# AGENDA
# HIDALGO COUNTY
# COMMISSIONERS COURT MEETING
# March 5, 2014
# 10:45 A.M.

**NOTICE is hereby given in accordance with Chapter 551, Texas Government Code, that a SPECIAL MEETING of the Commissioners' Court will be held at Edinburg Council Chambers, 415 W. University Drive, Edinburg, Hidalgo County, Texas. Discussion and possible action relating to the following business will be transacted:**

**1.** **Roll Call**

**2.** **Pledge of Allegiance**

**3.** **Prayer**

**4.** **Approval of Consent Agenda**

**5.** **Open Forum**

**6.** **County Judge's Office:**

**A.** **AI-43380** Authorization for Judge Ramon Garcia to sign the Certification by State or Local Official of PHA Plans Consistency with the Consolidated Plan form to be submitted by the Hidalgo County Housing Authority for their Annual Year Capital Fund Program application.

**B.** **AI-43378** Approval to process the following invoices as a claim with authority for County Treasurer to issue check after auditing procedures are completed by County Auditor.

| | ***Invoice Date*** | ***Invoice No.*** | ***Amount*** |
|---|---|---|---|
| ***Xerox Corporation*** | 12/01/2013 | 071376573 | $233.10 |
| | 01/01/2014 | 071874499 | $233.10 |
| | 02/02/2014 | 072510671 | $233.10 |

**7.** **Executive Officer - Valde Guerra:**

**A.** 1. Requesting exemption from competitive bidding requirements under the Texas Local Government Code, Section 262.024(A) (4) "a Professional Service" for the "provision of legal services/representation in connection with litigation."

2. Requesting engagement with the firm of _____ for the "Provision of Legal Services/Representation in connection with Litigation" and authority to submit letter of engagement

**B.** Presentation for discussion, consideration and action (if necessary) including, but not limited to the following:
1) Renovations to Former Administration Building 1st and 2nd Floors
2) Update on other ongoing county owned building construction and renovation repair projects
3) Emergency situations occurring since last agenda meeting

**C.** **AI-43346** Approval to accept settlement check from Allstate Insurance Company in the amount of $2,110.48 to settle auto accident with County vehicle. (Sheriff Office)

**D.** **AI-43347** Approval to accept settlement check from USAA Garrison Property & Casualty Insurance Company in the amount of $335.10 to settle auto accident with County vehicle. (Constable Precinct 3)

**E.** **AI-43391** Approval to accept settlement check from National Union Fire Insurance Company in the amount of $901.98 to settle auto accident with County vehicle. (HIDTA Task Force)

**F.** **AI-42922** Approval of 2014 Library Interlocal Agreements between Hidalgo County and the following cities: Alamo, Donna, Edinburg, Elsa, Hidalgo, La Joya, McAllen, Mercedes, Mission, Penitas, Pharr, San Juan and Weslaco

**G.** **AI-43404** Environmental Compliance:
Reporting the submittal of Hidalgo County's Tier 2 Chemical Inventory Report for 2013 to Texas Department of State Health Services and requesting payment of the associated fee of $100.00 based on types and quantities of materials stored by the county

**8.** **Constables:**

**A.** **AI-43320** Constable Pct. 3-LBSP (1284) :
1. Authorization and approval to accept the Local Border Security Program FY 2014 (LBSP-14) Grant Award No: LBSP-14-0030 in the amount of $46,000.00.
2. Authorization for County Judge, as authorized official, to sign grant award form and related documents.
3. Authorization to pay overtime reimbursable under the grant terms and conditions.
4. Approval of Certification of Revenues, as certified by the County Auditor, for the Local Border Security Program FY2014 (LBSP-14)
5. Approval to appropriate funds for LBSP-14 in the amount of $46,000.00.

**9.** **Health & Human Services Department - Eddie Olivarez**

**A.** **Health Care Funding District:**

**1.** Discussion and/or action, including but not limited to Health Care Funding District and/or Expenditures

**B.** **Indigent Health Care Program:**

**1.** Discussion and/or action, including but not limited to Indigent Health Care Program and 1115 Waiver and/or Expenditures

**C.** **AI-43300** Requesting approval to submit a request for increase in Bioterrorism Discretionary grant funds in the amount of $11,334.00 with a local match funding requirement of $1,259.00.

**D.** **AI-43301** Requesting approval to apply for the 2014 Binational Health Council funding in an amount up to $6,500.00.

**E.** **AI-43329** Public hearing to consider public comments for the Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, pursuant to Texas Health & Safety Code Ann. Section 437.001 ET Seq., as amended; 25 Texas Administrative Code Section 229.161 - 229.171, 229.173 - 229.175, as amended; 25 Texas Administrative Code section 229.373, as amended.
Topics for discussion include:
1. Fee changes
2. Permit application process
3. Inspections
4. Parking, water and electricity agreements
5. Push cart regulations
6. Flea market requirements
7. Mobile food vendor requirements

**F.** **AI-43330** Discussion, consideration and approval of the Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, pursuant to Texas Health & Safety Code Ann. Section 437.001 ET Seq., as amended; 25 Texas Administrative Code Section 229.161 - 229171, 229173 - 229.175, as amended; 25 Texas Administrative Code section 229.373, as amended.

**10.** **Adult Probation - Arnold K. Patrick:**

**A.** **AI-43218** Applications for Adult Probation for the 2015 Grant Cycle of the Criminal Justice Division (CJD) of the Governor's Office

1. DWI Court Program
a. Permission to apply for the continuation of the DWI Court Program
b. Permission to be appointed the Authorized Official for the DWI Court Program

2. Veterans Treatment Court Program

a. Permission to apply for the continuation of the Veterans Treatment Court Program
b. Permission to be appointed the Authorized Official for the Veterans Treatment Court Program

3. Monitoring Compliance for High Risk Offenders Program
a. Permission to apply for the continuation of the Monitoring Compliance for High Risk Offenders Program
b. Permission to be appointed the Authorized Official for the Monitoring Compliance for High Risk Offenders Program

4. Prostitution Prevention Court Program
a. Permission to apply for the continuation of the Prostitution Prevention Court Program
b. Permission to be appointed the Authorized Official for the Prostitution Prevention Court Program

**11. Urban County - Diana Serna:**

**A. AI-43333** Discussion, consideration and approval to accept counter offer to purchase a tract of land known as Parcels 2,3,4,6,8,9,10,11 and 12 for the Delta Area Connector / East Lateral Project (GLO 12-406-000-6453/DRS 210068).

**B. AI-43222** Urban County Program on behalf of the City of Mercedes is requesting authority to purchase fire station equipment (spreaders, quick kick ram support and twinline hose) for the Mercedes Fire Department. Purchase will be made from Wilson Fire Rescue (contract # EE08-13) an approved vendor through Hidalgo County's membership and participation with H-GAC. The total amount of purchase is $7,230.00 (quote attached) for the Mercedes Fire Department funded thru FY 26 (2013) Mercedes – Fire Station/Equipment line item and the city's general funds.

**C. AI-43225** Urban County Program on behalf of the City of Progreso is requesting authority to purchase playground equipment for the Progreso City Park. Purchase will be made from American Parks Company (contract # 423-13), an approved vendor through Hidalgo County's membership and participation with State of Texas Buy Board. The total amount of purchase including installation is $42,000.00 (quote attached) for the Progreso City Park funded thru FY's 24 & 26 (2011 & 2013) Progreso – Park, Recreational Facilities funds.

**12. Planning Department - Raul Sesin:**

**A. AI-43312** 1. Preliminary Approval with Variance Request
a. Maiz Acres No. 5 Subdivision – Pct. 1 (Evon Harbison)

2. Preliminary Approval
a. Campbell Estates Subdivision – Pct. 1 (David Campbell)
b. Rojas Subdivision – Pct. 4 (Rafael Rojas)

3. Final Approval
a. Huisache Acres No. 10 Subdivision – Pct. 4 (Rick Harbison)
b. Idea Quest Subdivision – Pct. 4 (Idea Public School)
c. RSBR DG (FM 2812) Subdivision – Pct. 4 (Esdgar Cantu)
d. Aurora Valley Phase 3 Subdivision – Pct. 1 (Mike Rhodes)

4. Final Approval with Financial Guarantee
a. Eduardo's No. 12 Subdivision – Pct. 3 (Diana Izaguirre)

**13. Precinct #2 - Comm. H. Palacios:**

**A. AI-43401** 1. Approval of interlocal agreement between the Regional Mobility Authority (RMA) and the County of Hidalgo, Tx to provide Right of Way Acquisition Services in which a portion of the proposed roadway is within the County for the US 281/Military Highway Overpass, State Highway 365, and International Bridge Trade Corridor Projects.
2. In accordance with Section 791.014 of the Texas Government Code, requesting approval of the interlocal cooperation agreement project to assist the Regional Mobility Authority (RMA) in the acquisition of right of way for the US 281/Military Highway Overpass, State Highway 365, and International Bridge Trade Corridor Projects.

**B. AI-43258** Appointment/Reappointment of Hidalgo County Regional Mobility Authority (HCRMA) member.

**C. AI-43319** Precinct 2 ICA W/SJ-Eldora & Sgt Trevino Rd (1200):
Approval of 2014 appropriation of funds from Pct 2 Road & Bridge fund balance in the total amount of $682,929.86 to fund construction contract# 13-293-12-20 with Texas Cordia Construction, LLC for "Hidalgo County Pct 2 Lowering of Canal Crossing & Road Widening at Eldora & Sgt Trevino Road.

**D. AI-43326** Requesting approval to process the following invoices as claims with authority for County Treasurer to issue payment after review, audit, and processing procedures are completed by the County Auditor.

| Vendor | Invoice No | Amount |
|---|---|---|
| Mobile Relays Partners, LTD | AIR0032819 | $30.00 |
| Mobile Relays Partners, LTD | AIR0032822 | $36.00 |
| Mobile Relays Partners, LTD | AIR0032824 | $79.99 |
| Mobile Relays Partners, LTD | AIR0032820 | $137.97 |
| Mobile Relays Partners, LTD | AIR0032818 | $875.90 |

**E. AI-43402** Pct 2 Road & Bridge (1200):
Approval of 2014 appropriation of funds into Various Precinct 2 Road & Bridge Projects in the amount of $650,000.00 to fund project expenditures from (1200) fund balance.

**14.** **Budget & Management - Sergio Cruz:**

**A.** **AI-43328** 1. Presentation, discussion, and direction on Sanitation Program.
2. Presentation and discussion of Tire Shredding Project.
3. Presentation, discussion and status update of various budget initiatives.

**B.** **AI-43364** Precinct No.4 TxDOT Projects:
1. Approval of Advance Funding Agreement (AFA) between Hidalgo County and Texas Department of Transportation from FM 1925 (Kenyon Road to FM907) CSJ: 1803-02-028 with authority for the County Judge to sign required documentation.

2. Approval of Agreement for Right of Way Procurement for FM 1925 (from Kenyon Road to FM 907) CSJ: 1803-02-033 with authority for the County Judge to sign required documentation.

3. Approval of Agreement for Right of Way Procurement for FM 2220 (from Mile 5 to FM 1924) CSJ: 2094-01-044.

**C.** **AI-43403** County Energy Transportation Reinvestment Zone (CETRZ):
1. Discussion, consideration and approval of an Order authorizing the creation of a County Energy Transportation Reinvestment Zone (segment of FM1017).

2. Approval and appointment of members of CERTZ Advisory Committee

3. Discussion, consideration and approval to apply for the FY2014 County Transportation Infrastructure Fund Grant Program

4. Discussion, authorization and approval of designating Wallace Road and Brushline Road Projects to be funded by the County Transportation Infrastructure Grant Program

5. Discussion, consideration and approval of accepting county road report(s) to be included in the minutes of the Commissioner's Court

**D.** **Budget Appropriations:**

**1.** **AI-43389** Precinct 4 TxDOT (1315):
Approval of 2014 appropriation of funds in the total amount of $19,465.00 for FM 2220 (Ware Road) TxDOT project (ROW CSJ:2094-01-044;CONST CSJ: 2094-01-038).

**15.** **Purchasing Department - Marty Salazar:**
**Notes:**
**A. FOR ANY CONTRACT(S) AWARDED AND APPROVED UNDER THIS AGENDA, EXECUTED COPIES OF THE CONTRACT(S) WILL BE AVAILABLE ON THE COUNTY INTRA-NET WEBSITE AND WILL BE FOWARDED VIA E-MAIL, FAX OR HAND DELIVERED TO HIDALGO**

**COUNTY AUDITOR'S OFFICE.**

**B. ANY AND ALL REQUESTS FOR PAYMENT(S) APPROVED WILL BE SUBJECT TO COUNTY AUDITORS PROCESSING PROCEDURES INCLUDING AUTHORITY FOR COUNTY TREASURER TO ISSUE PAYMENT(S)/CHECK(S).**

**A. Pct. 1**

1. **AI-43170** Presentation of sole bid received as detailed in tabulation sheet contained herein meeting all specifications and/ or requirements for the purpose of award and approval of contract for Request for Bid titled: Hidalgo County PCT 1- " Hauling Services for all Road Materials" through project No.: 2014-017-02-12-MEG.

2. **AI-43377** Acceptance and approval to purchase One (1) New 2014 Cat Model CT660 Roll-Off Truck with standard equipment through Hidalgo County's Membership participation with National Joint Powers Alliance (NJPA) awarded Contract #060311-CAT in the amount of $151,697.38.

**B. Pct. 2**

1. **AI-43248** A. Requesting exemption from competitive bidding requirements under the Texas Local Government Code, Section 262.024 (A) (4) a professional engineering services.

   B. Presentation of scoring grid (for the purpose of ranking by CC) of the firms graded and evaluated through the County's approved "pool" of professional engineering services for (as needed basis) for various precinct projects in Precinct No. 2.

| Evaluators | R. Gutierrez Engineering | S & G Engineering | R. E. Garcia and Associates |
|---|---|---|---|
| Scores | 97 | 94 | 82 |
| Ranking | | | |

   C. Authority for the Purchasing Department to negotiate a professional engineering services contract with the No. 1 ranked firm of _____ for: (as needed basis) for various precinct projects in Precinct No. 2.

2. **AI-43332** A. Requesting approval of an "order" granting an exemption from competitive bidding requirements under Texas Local Gov't Code, Chapter 262, Section .024 (a)(7) "an item that can be obtained from only one source.";

   B. Approval of a "Sole Source Declaration" with AEP Texas Central Company with authority to enter into a "Contribution-In-Aid-of Construction Agreement" in the amount of $10,951.41 commencing with the

new Precinct. #2 Equipment & Maintenance Facility for the installation/extension of an overhead single phase and thereafter for any other applicable elected office, department, program, agency (from all eligible and applicable funding sources).

3. **AI-43379** Requesting authority to advertise with approval of RFB plans and specifications developed by project engineer, Raul Sesin, P.E., Hidalgo County Planning Department for: Hidalgo County Precinct No. 2 -"Gearhart Drive Paving and Drainage Improvements"-RFB No. 2014-078-04-02-MSS.

**C. Pct. 3**

1. **AI-43355** Acceptance and approval of the following claims/invoices with Safehouse Security Systems for the provision of security monitoring services at the Penitas Landfill-Precinct 3 with the authority for the County Treasurer to issue payment/check after review, audit and processing procedures are completed by the County Auditor:

Invoice #120532-**$20.00**-01/01/14-01/31/14
Invoice #121024-**$20.00**-02/01/14-02/28/14

**D. Pct. 4**

1. **AI-43390** A. Requesting exemption from competitive bidding requirements under the Texas Local Government Code, Section 262.024 (A) (4) a professional appraisal services.

B. Presentation of scoring grid (for the purpose of ranking by CC) of the firms graded and evaluated through the County's approved "pool" of professional appraisal services for (as needed basis) for Fair Market Appraisal for County Owned Property located within Hidalgo County Precinct No. 4.

| evaluators | HLH Appraisal Services | Intrega Realty Resources | Leonel Garza Jr., & Associates |
|---|---|---|---|
| Evaluator | 93 | 91 | 96 |
| Ranking | | | |

C. Authority for the Purchasing Department to negotiate a professional appraisal services contract with the No. 1 ranked firm of _____ for: (as needed basis) for Fair market Appraisal for County Owned Property located within Hidalgo County Precinct No. 4.

2. **AI-43376** Requesting authority to advertise the construction with approval of plans and specifications developed/drafted by project architect, Mata-Garcia Architects, L.L.P. for Hidalgo County Precinct No. 4 -Construction of The Linn - San Manuel Emergency Service Facility . RFB No. 2014-067-04-02-MSS.

**E. WIC**

1. **AI-43353** Acceptance and approval of "First Amendment" to the current lease agreement with WIC Program to reflect name change of lessor from A&J Martinez, LP to Julcar, LLC.

**F. Sheriff's Office**

1. **AI-43160** Presentation of sole bid received as detailed in tabulation sheet contained herein meeting all specifications and/ or requirements for the purpose of award and approval of contract for Request for Bid titled: Hidalgo County Sheriff's Office- "Polygraph Examiner for (Pre-Employment, Criminal, Suitability)" through project No.: 2014-018-02-05-MEG.

**16. Closed Session:**
Commissioners' Court may go into Closed Session pursuant to Chapter 551, Texas Government Code, Sections 551.071 & 551.072 to discuss the following:

**A.** Real Estate Acquisition

**B.** Pending and/or potential litigation

**C. AI-43374** C-2643-11-C; Thomas Fonseca et al v. City of Weslaco and County of Hidalgo

**D. AI-43344** Claim of Veronica Espinoza

**E. AI-43349** Claim of Juan L. Fonseca

**F. AI-43387** Claim of Carlos Silva

**17. Open Session:**

**A.** Real Estate Acquisition and appropriation for same

**B.** Pending and/or potential litigation

**C. AI-43375** C-2643-11-C; Thomas Fonseca et al v. City of Weslaco and County of Hidalgo

**D. AI-43345** Claim of Veronica Espinoza

**E. AI-43350** Claim of Juan L. Fonseca

**F. AI-43388** Claim of Carlos Silva

**18.** **Closed Session:**
Commissioners' Court may reconvene into Closed Session for the discussion regarding the agenda items listed

**19.** **Open Session:**
Commissioners' Court may reconvene into Open Session for the discussion regarding the agenda items listed

**20.** **Adjourn**

**AI-43380** **County Judge's Office 6. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Jaime Longoria **Submitted By:** SANDRA DELEON, COUNTY JUDGE

**Department:** COUNTY JUDGE

## Information

**CAPTION**

Authorization for Judge Ramon Garcia to sign the Certification by State or Local Official of PHA Plans Consistency with the Consolidated Plan form to be submitted by the Hidalgo County Housing Authority for their Annual Year Capital Fund Program application.

**BACKGROUND**

## Attachments

form

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/28/2014 10:37 AM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 01:45 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: SANDRA DELEON Started On: 02/27/2014 03:20 PM

Final Approval Date: 02/28/2014

| Certification by State or Local Official of PHA Plans Consistency with the Consolidated Plan | U.S. Department of Housing and Urban Development<br>Office of Public and Indian Housing<br>Expires 4/30/2011 |
|---|---|

# Certification by State or Local Official of PHA Plans Consistency with the Consolidated Plan

I, Ramon Garcia the County Judge of Hidalgo County certify that the Five Year and Annual PHA Plan of the Housing Authority of the County of Hidalgo is consistent with the Consolidated Plan of The County of Hidalgo, Texas prepared pursuant to 24 CFR Part 91.

Signed / Dated by Appropriate State or Local Official

| PHA 5-Year and Annual Plan | U.S. Department of Housing and Urban Development<br>Office of Public and Indian Housing | OMB No. 2577-0226<br>Expires 8/30/2011 |
|---|---|---|

**1.0 PHA Information**

PHA Name: Hidalgo County housing Authority PHA Code: TX497

PHA Type: ☐ Small ☐ High Performing ☒ Standard ☐ HCV (Section 8)

PHA Fiscal Year Beginning: (MM/YYYY): 07/01/2014

**2.0 Inventory** (based on ACC units at time of FY beginning in 1.0 above)

Number of PH units: 55 Number of HCV units: 716

**3.0 Submission Type**

☐ 5-Year and Annual Plan ☒ Annual Plan Only ☐ 5-Year Plan Only

**4.0 PHA Consortia** ☐ PHA Consortia: (Check box if submitting a joint Plan and complete table below.)

| Participating PHAs | PHA Code | Program(s) Included in the Consortia | Programs Not in the Consortia | No. of Units in Each Program | |
|---|---|---|---|---|---|
| | | | | PH | HCV |
| PHA 1: | | | | | |
| PHA 2: | | | | | |
| PHA 3: | | | | | |

**5.0 5-Year Plan.** Complete items 5.1 and 5.2 only at 5-Year Plan update.

**5.1 Mission.** State the PHA's Mission for serving the needs of low-income, very low-income, and extremely low income families in the PHA's jurisdiction for the next five years:

**5.2 Goals and Objectives.** Identify the PHA's quantifiable goals and objectives that will enable the PHA to serve the needs of low-income and very low-income, and extremely low-income families for the next five years. Include a report on the progress the PHA has made in meeting the goals and objectives described in the previous 5-Year Plan.

**6.0 PHA Plan Update**

(a) Identify all PHA Plan elements that have been revised by the PHA since its last Annual Plan submission:

(b) Identify the specific location(s) where the public may obtain copies of the 5-Year and Annual PHA Plan. For a complete list of PHA Plan elements, see Section 6.0 of the instructions.

Main Administration office of the PHA: 1800 N. Texas Blvd., Weslaco, Texas 78599

PHA Development Management office: 1102 Lilia Dr.,Weslaco, Texas 78599

1200 N. Standard, San Juan, Texas 78589

**7.0 Hope VI, Mixed Finance Modernization or Development, Demolition and/or Disposition, Conversion of Public Housing, Homeownership Programs, and Project-based Vouchers.** *Include statements related to these programs as applicable.*

**8.0 Capital Improvements.** Please complete Parts 8.1 through 8.3, as applicable.

**8.1 Capital Fund Program Annual Statement/Performance and Evaluation Report.** As part of the PHA 5-Year and Annual Plan, annually complete and submit the *Capital Fund Program Annual Statement/Performance and Evaluation Report,* form HUD-50075.1, for each current and open CFP grant and CFFP financing.

**8.2 Capital Fund Program Five-Year Action Plan.** As part of the submission of the Annual Plan, PHAs must complete and submit the *Capital Fund Program Five-Year Action Plan,* form HUD-50075.2, and subsequent annual updates (on a rolling basis, e.g., drop current year, and add latest year for a five year period). Large capital items must be included in the Five-Year Action Plan.

**8.3 Capital Fund Financing Program (CFFP).**

☐ Check if the PHA proposes to use any portion of its Capital Fund Program (CFP)/Replacement Housing Factor (RHF) to repay debt incurred to finance capital improvements.

**9.0 Housing Needs.** Based on information provided by the applicable Consolidated Plan, information provided by HUD, and other generally available data, make a reasonable effort to identify the housing needs of the low-income, very low-income, and extremely low-income families who reside in the jurisdiction served by the PHA, including elderly families, families with disabilities, and households of various races and ethnic groups, and other families who are on the public housing and Section 8 tenant-based assistance waiting lists. The identification of housing needs must address issues of affordability, supply, quality, accessibility, size of units, and location.

| | |
|---|---|
| 9.1 | **Strategy for Addressing Housing Needs.** Provide a brief description of the PHA's strategy for addressing the housing needs of families in the jurisdiction and on the waiting list in the upcoming year. **Note: Small, Section 8 only, and High Performing PHAs complete only for Annual Plan submission with the 5-Year Plan.** |
| 10.0 | **Additional Information.** Describe the following, as well as any additional information HUD has requested.<br><br>(a) Progress in Meeting Mission and Goals. Provide a brief statement of the PHA's progress in meeting the mission and goals described in the 5-Year Plan.<br>(b) Significant Amendment and Substantial Deviation/Modification. Provide the PHA's definition of "significant amendment" and "substantial deviation/modification" |

| | |
|---|---|
| 11.0 | **Required Submission for HUD Field Office Review.** In addition to the PHA Plan template (HUD-50075), PHAs must submit the following documents. Items (a) through (g) may be submitted with signature by mail or electronically with scanned signatures, but electronic submission is encouraged. Items (h) through (i) must be attached electronically with the PHA Plan. **Note:** Faxed copies of these documents will not be accepted by the Field Office.<br><br>(a) Form HUD-50077, *PHA Certifications of Compliance with the PHA Plans and Related Regulations* (which includes all certifications relating to Civil Rights)<br>(b) Form HUD-50070, *Certification for a Drug-Free Workplace* (PHAs receiving CFP grants only)<br>(c) Form HUD-50071, *Certification of Payments to Influence Federal Transactions* (PHAs receiving CFP grants only)<br>(d) Form SF-LLL, *Disclosure of Lobbying Activities* (PHAs receiving CFP grants only)<br>(e) Form SF-LLL-A, *Disclosure of Lobbying Activities Continuation Sheet* (PHAs receiving CFP grants only)<br>(f) Resident Advisory Board (RAB) comments. Comments received from the RAB must be submitted by the PHA as an attachment to the PHA Plan. PHAs must also include a narrative describing their analysis of the recommendations and the decisions made on these recommendations.<br>(g) Challenged Elements<br>(h) Form HUD-50075.1, *Capital Fund Program Annual Statement/Performance and Evaluation Report* (PHAs receiving CFP grants only)<br>(i) Form HUD-50075.2, *Capital Fund Program Five-Year Action Plan* (PHAs receiving CFP grants only) |

This information collection is authorized by Section 511 of the Quality Housing and Work Responsibility Act, which added a new section 5A to the U.S. Housing Act of 1937, as amended, which introduced 5-Year and Annual PHA Plans. The 5-Year and Annual PHA plans provide a ready source for interested parties to locate basic PHA policies, rules, and requirements concerning the PHA's operations, programs, and services, and informs HUD, families served by the PHA, and members of the public of the PHA's mission and strategies for serving the needs of low-income and very low-income families. This form is to be used by all PHA types for submission of the 5-Year and Annual Plans to HUD. Public reporting burden for this information collection is estimated to average 12.68 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. HUD may not collect this information, and respondents are not required to complete this form, unless it displays a currently valid OMB Control Number.

**Privacy Act Notice.** The United States Department of Housing and Urban Development is authorized to solicit the information requested in this form by virtue of Title 12, U.S. Code, Section 1701 et seq., and regulations promulgated thereunder at Title 12, Code of Federal Regulations. Responses to the collection of information are required to obtain a benefit or to retain a benefit. The information requested does not lend itself to confidentiality

# Instructions form HUD-50075

**Applicability.** This form is to be used by all Public Housing Agencies (PHAs) with Fiscal Year beginning April 1, 2008 for the submission of their 5-Year and Annual Plan in accordance with 24 CFR Part 903. The previous version may be used only through April 30, 2008.

**1.0 PHA Information**
Include the full PHA name, PHA code, PHA type, and PHA Fiscal Year Beginning (MM/YYYY).

**2.0 Inventory**
Under each program, enter the number of Annual Contributions Contract (ACC) Public Housing (PH) and Section 8 units (HCV).

**3.0 Submission Type**
Indicate whether this submission is for an Annual and Five Year Plan, Annual Plan only, or 5-Year Plan only.

**4.0 PHA Consortia**
Check box if submitting a Joint PHA Plan and complete the table.

**5.0 Five-Year Plan**
Identify the PHA's Mission, Goals and/or Objectives (24 CFR 903.6). Complete only at 5-Year update.

**5.1 Mission.** A statement of the mission of the public housing agency for serving the needs of low-income, very low-income, and extremely low-income families in the jurisdiction of the PHA during the years covered under the plan.

**5.2 Goals and Objectives.** Identify quantifiable goals and objectives that will enable the PHA to serve the needs of low income, very low-income, and extremely low-income families.

**6.0 PHA Plan Update.** In addition to the items captured in the Plan template, PHAs must have the elements listed below readily available to the public. Additionally, a PHA must:

(a) Identify specifically which plan elements have been revised since the PHA's prior plan submission.

(b) Identify where the 5-Year and Annual Plan may be obtained by the public. At a minimum, PHAs must post PHA Plans, including updates, at each Asset Management Project (AMP) and main office or central off ice of the PHA. PHAs are strongly encouraged to post complete PHA Plans on its official website. PHAs are also encouraged to provide each resident council a copy of its 5-Year and Annual Plan.

**PHA Plan Elements.** (24 CFR 903.7)

1. **Eligibility, Selection and Admissions Policies, including Deconcentration and Wait List Procedures.** Describe the PHA's policies that govern resident or tenant eligibility, selection and admission including admission preferences for both public housing and HCV and unit assignment policies for public housing; and procedures for maintaining waiting lists for admission to public housing and address any site-based waiting lists.

2. **Financial Resources.** A statement of financial resources, including a listing by general categories, of the PHA's anticipated resources, such as PHA Operating, Capital and other anticipated Federal resources available to the PHA, as well as tenant rents and other income available to support public housing or tenant-based assistance. The statement also should include the non-Federal sources of funds supporting each Federal program, and state the planned use for the resources.

3. **Rent Determination.** A statement of the policies of the PHA governing rents charged for public housing and HCV dwelling units.

4. **Operation and Management.** A statement of the rules, standards, and policies of the PHA governing maintenance management of housing owned, assisted, or operated by the public housing agency (which shall include measures necessary for the prevention or eradication of pest infestation, including cockroaches), and management of the PHA and programs of the PHA.

5. **Grievance Procedures.** A description of the grievance and informal hearing and review procedures that the PHA makes available to its residents and applicants.

6. **Designated Housing for Elderly and Disabled Families.** With respect to public housing projects owned, assisted, or operated by the PHA, describe any projects (or portions thereof), in the upcoming fiscal year, that the PHA has designated or will apply for designation for occupancy by elderly and disabled families. The description shall include the following information: 1) development name and number; 2) designation type; 3) application status; 4) date the designation was approved, submitted, or planned for submission, and; 5) the number of units affected.

7. **Community Service and Self-Sufficiency.** A description of: (1) Any programs relating to services and amenities provided or offered to assisted families; (2) Any policies or programs of the PHA for the enhancement of the economic and social self-sufficiency of assisted families, including programs under Section 3 and FSS; (3) How the PHA will comply with the requirements of community service and treatment of income changes resulting from welfare program requirements. **(Note: applies to only public housing).**

8. **Safety and Crime Prevention.** For public housing only, describe the PHA's plan for safety and crime prevention to ensure the safety of the public housing residents. The statement must include: (i) A description of the need for measures to ensure the safety of public housing residents; (ii) A description of any crime prevention activities conducted or to be conducted by the PHA; and (iii) A description of the coordination between the PHA and the appropriate police precincts for carrying out crime prevention measures and activities.

9. **Pets.** A statement describing the PHAs policies and requirements pertaining to the ownership of pets in public housing.

10. **Civil Rights Certification.** A PHA will be considered in compliance with the Civil Rights and AFFH Certification if: it can document that it examines its programs and proposed programs to identify any impediments to fair housing choice within those programs; addresses those impediments in a reasonable fashion in view of the resources available; works with the local jurisdiction to implement any of the jurisdiction's initiatives to affirmatively further fair housing; and assures that the annual plan is consistent with any applicable Consolidated Plan for its jurisdiction.

11. **Fiscal Year Audit.** The results of the most recent fiscal year audit for the PHA.

12. **Asset Management.** A statement of how the agency will carry out its asset management functions with respect to the public housing inventory of the agency, including how the agency will plan for the long-term operating, capital investment, rehabilitation, modernization, disposition, and other needs for such inventory.

13. **Violence Against Women Act (VAWA).** A description of: **1)** Any activities, services, or programs provided or offered by an agency, either directly or in partnership with other service providers, to child or adult victims of domestic violence, dating violence, sexual assault, or stalking; **2)** Any activities, services, or programs provided or offered by a PHA that helps child and adult victims of domestic violence, dating violence, sexual assault, or stalking, to obtain or maintain housing; and **3)** Any activities, services, or programs provided or offered by a public housing agency to prevent domestic violence, dating violence, sexual assault, and stalking, or to enhance victim safety in assisted families.

**7.0 Hope VI, Mixed Finance Modernization or Development, Demolition and/or Disposition, Conversion of Public Housing, Homeownership Programs, and Project-based Vouchers**

(a) **Hope VI or Mixed Finance Modernization or Development.** **1)** A description of any housing (including project number (if known) and unit count) for which the PHA will apply for HOPE VI or Mixed Finance Modernization or Development; and **2)** A timetable for the submission of applications or proposals. The application and approval process for Hope VI, Mixed Finance Modernization or Development, is a separate process. See guidance on HUD's website at: http://www.hud.gov/offices/pih/programs/ph/hope6/index.cfm

(b) **Demolition and/or Disposition.** With respect to public housing projects owned by the PHA and subject to ACCs under the Act: **(1)** A description of any housing (including project number and unit numbers [or addresses]), and the number of affected units along with their sizes and accessibility features) for which the PHA will apply or is currently pending for demolition or disposition; and **(2)** A timetable for the demolition or disposition. The application and approval process for demolition and/or disposition is a separate process. See guidance on HUD's website at: http://www.hud.gov/offices/pih/centers/sac/demo_dispo/index.cfm
**Note:** This statement must be submitted to the extent that **approved and/or pending** demolition and/or disposition has changed.

(c) **Conversion of Public Housing.** With respect to public housing owned by a PHA: **1)** A description of any building or buildings (including project number and unit count) that the PHA is required to convert to tenant-based assistance or that the public housing agency plans to voluntarily convert; **2)** An analysis of the projects or buildings required to be converted; and **3)** A statement of the amount of assistance received under this chapter to be used for rental assistance or other housing assistance in connection with such conversion. See guidance on HUD's website at: http://www.hud.gov/offices/pih/centers/sac/conversion.cfm

(d) **Homeownership.** A description of any homeownership (including project number and unit count) administered by the agency or for which the PHA has applied or will apply for approval.

(e) **Project-based Vouchers.** If the PHA wishes to use the project-based voucher program, a statement of the projected number of project-based units and general locations and how project basing would be consistent with its PHA Plan.

**8.0 Capital Improvements.** This section provides information on a PHA's Capital Fund Program. With respect to public housing projects owned, assisted, or operated by the public housing agency, a plan describing the capital improvements necessary to ensure long-term physical and social viability of the projects must be completed along with the required forms. Items identified in 8.1 through 8.3, must be signed where directed and transmitted electronically along with the PHA's Annual Plan submission.

**8.1 Capital Fund Program Annual Statement/Performance and Evaluation Report.** PHAs must complete the *Capital Fund Program Annual Statement/Performance and Evaluation Report* (form HUD-50075.1), for each Capital Fund Program (CFP) to be undertaken with the current year's CFP funds or with CFFP proceeds. Additionally, the form shall be used for the following purposes:

(a) To submit the initial budget for a new grant or CFFP;

(b) To report on the Performance and Evaluation Report progress on any open grants previously funded or CFFP; and

(c) To record a budget revision on a previously approved open grant or CFFP, e.g., additions or deletions of work items, modification of budgeted amounts that have been undertaken since the submission of the last Annual Plan. The Capital Fund Program Annual Statement/Performance and Evaluation Report must be submitted annually.

Additionally, PHAs shall complete the Performance and Evaluation Report section (see footnote 2) of the *Capital Fund Program Annual Statement/Performance and Evaluation* (form HUD-50075.1), at the following times:

1. At the end of the program year; until the program is completed or all funds are expended;

2. When revisions to the Annual Statement are made, which do not require prior HUD approval, (e.g., expenditures for emergency work, revisions resulting from the PHAs application of fungibility); and

3. Upon completion or termination of the activities funded in a specific capital fund program year.

**8.2 Capital Fund Program Five-Year Action Plan**

PHAs must submit the *Capital Fund Program Five-Year Action Plan* (form HUD-50075.2) for the entire PHA portfolio for the first year of participation in the CFP and annual update thereafter to eliminate the previous year and to add a new fifth year (rolling basis) so that the form always covers the present five-year period beginning with the current year.

**8.3 Capital Fund Financing Program (CFFP).** Separate, written HUD approval is required if the PHA proposes to pledge any

portion of its CFP/RHF funds to repay debt incurred to finance capital improvements. The PHA must identify in its Annual and 5-year capital plans the amount of the annual payments required to service the debt. The PHA must also submit an annual statement detailing the use of the CFFP proceeds. See guidance on HUD's website at: http://www.hud.gov/offices/pih/programs/ph/capfund/cffp.cfm

**9.0 Housing Needs.** Provide a statement of the housing needs of families residing in the jurisdiction served by the PHA and the means by which the PHA intends, to the maximum extent practicable, to address those needs. (Note: Standard and Troubled PHAs complete annually; Small and High Performers complete only for Annual Plan submitted with the 5-Year Plan).

**9.1 Strategy for Addressing Housing Needs.** Provide a description of the PHA's strategy for addressing the housing needs of families in the jurisdiction and on the waiting list in the upcoming year. (Note: Standard and Troubled PHAs complete annually; Small and High Performers complete only for Annual Plan submitted with the 5-Year Plan).

**10.0 Additional Information.** Describe the following, as well as any additional information requested by HUD:

(a) **Progress in Meeting Mission and Goals.** PHAs must include (i) a statement of the PHAs progress in meeting the mission and goals described in the 5-Year Plan; (ii) the basic criteria the PHA will use for determining a significant amendment from its 5-year Plan; and a significant amendment or modification to its 5-Year Plan and Annual Plan. **(Note: Standard and Troubled PHAs complete annually; Small and High Performers complete only for Annual Plan submitted with the 5-Year Plan).**

(b) **Significant Amendment and Substantial Deviation/Modification.** PHA must provide the definition of "significant amendment" and "substantial deviation/modification". **(Note: Standard and Troubled PHAs complete annually; Small and High Performers complete only for Annual Plan submitted with the 5-Year Plan.)**

(c) PHAs must include or reference any applicable memorandum of agreement with HUD or any plan to improve performance. **(Note: Standard and Troubled PHAs complete annually).**

**11.0 Required Submission for HUD Field Office Review.** In order to be a complete package, PHAs must submit items (a) through (g), with signature by mail or electronically with scanned signatures. Items (h) and (i) shall be submitted electronically as an attachment to the PHA Plan.

(a) Form HUD-50077, *PHA Certifications of Compliance with the PHA Plans and Related Regulations*

(b) Form HUD-50070, *Certification for a Drug-Free Workplace* **(PHAs receiving CFP grants only)**

(c) Form HUD-50071, *Certification of Payments to Influence Federal Transactions* **(PHAs receiving CFP grants only)**

(d) Form SF-LLL, *Disclosure of Lobbying Activities* **(PHAs receiving CFP grants only)**

(e) Form SF-LLL-A, *Disclosure of Lobbying Activities Continuation Sheet* **(PHAs receiving CFP grants only)**

(f) Resident Advisory Board (RAB) comments.

(g) Challenged Elements. Include any element(s) of the PHA Plan that is challenged.

(h) Form HUD-50075.1, ***Capital Fund Program Annual Statement/Performance and Evaluation Report*** **(Must be attached electronically for PHAs receiving CFP grants only).** See instructions in 8.1.

(i) Form HUD-50075.2, *Capital Fund Program Five-Year Action Plan* **(Must be attached electronically for PHAs receiving CFP grants only).** See instructions in 8.2.

| **Civil Rights Certification** | **U.S. Department of Housing and Urban Development**<br>Office of Public and Indian Housing<br>**Expires 08/30/2011** |
|---|---|

## Civil Rights Certification

### Annual Certification and Board Resolution

*Acting on behalf of the Board of Commissioners of the Public Housing Agency (PHA) listed below, as its Chairman or other authorized PHA official if there is no Board of Commissioner, I approve the submission of the Plan for the PHA of which this document is a part and make the following certification and agreement with the Department of Housing and Urban Development (HUD) in connection with the submission of the Plan and implementation thereof:*

The PHA certifies that it will carry out the public housing program of the agency in conformity with title VI of the Civil Rights Act of 1964, the Fair Housing Act, section 504 of the Rehabilitation Act of 1973, and title II of the Americans with Disabilities Act of 1990, and will affirmatively further fair housing.

Hidalgo County Housing Authority — PHA Name

TX497 — PHA Number/HA Code

I hereby certify that all the information stated herein, as well as any information provided in the accompaniment herewith, is true and accurate. Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

| Name of Authorized Official | Title |
|---|---|
| Eloy Avila | Board Chairman |
| Signature | Date 1/24/14 |

# Certification for a Drug-Free Workplace

U.S. Department of Housing and Urban Development

Applicant Name

Hidalgo County Housing Authority

Program/Activity Receiving Federal Grant Funding

Streamlined Annual PHA Plan

Acting on behalf of the above named Applicant as its Authorized Official, I make the following certifications and agreements to the Department of Housing and Urban Development (HUD) regarding the sites listed below:

I certify that the above named Applicant will or will continue to provide a drug-free workplace by:

a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Applicant's workplace and specifying the actions that will be taken against employees for violation of such prohibition.

b. Establishing an on-going drug-free awareness program to inform employees ---

(1) The dangers of drug abuse in the workplace;

(2) The Applicant's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

c. Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph a.;

d. Notifying the employee in the statement required by paragraph a. that, as a condition of employment under the grant, the employee will ---

(1) Abide by the terms of the statement; and

(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

e. Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph d.(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federalagency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

f. Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph d.(2), with respect to any employee who is so convicted ---

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

g. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs a. thru f.

**2. Sites for Work Performance.** The Applicant shall list (on separate pages) the site(s) for the performance of work done in connection with the HUD funding of the program/activity shown above: Place of Performance shall include the street address, city, county, State, and zip code. Identify each sheet with the Applicant name and address and the program/activity receiving grant funding.)

Check here ☐ if there are workplaces on file that are not identified on the attached sheets.

I hereby certify that all the information stated herein, as well as any information provided in the accompaniment herewith, is true and accurate.
**Warning:** HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

| Name of Authorized Official | Title |
|---|---|
| Eloy Avila | Board Chairman |
| **Signature** | **Date** |
| X | 1/24/14 |

form HUD-50070 (3/98)
ref. Handbooks 7417.1, 7475.13, 7485.1 & .3

OMB Approval No. 2577-0157 (Exp. 01/31/2014)

# Certification of Payments to Influence Federal Transactions

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing

Hidalgo County Housing Authority
Applicant Name

Streamlined Annual PHA Plan
Program/Activity Receiving Federal Grant Funding

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying, in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all sub recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

I hereby certify that all the information stated herein, as well as any information provided in the accompaniment herewith, is true and accurate. **Warning:** HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

| Name of Authorized Official | Title |
|---|---|
| Eloy Avila | Board Chairman |

| Signature | Date (mm/dd/yyyy) |
|---|---|
| | 01/24/2014 |

Previous edition is obsolete form HUD 50071 (3/98)

ref. Handbooks 7417.1, 7475.13, 7485.1, & 7485.3

# DISCLOSURE OF LOBBYING ACTIVITIES

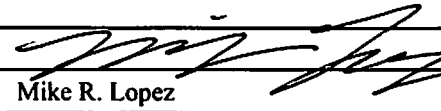
Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

| 1. Type of Federal Action: | 2. Status of Federal Action: | 3. Report Type: |
|---|---|---|
| [b] a. contract<br>b. grant<br>c. cooperative agreement<br>d. loan<br>e. loan guarantee<br>f. loan insurance | [a] a. bid/offer/application<br>b. initial award<br>c. post-award | [a] a. initial filing<br>b. material change<br>**For Material Change Only:**<br>year _____ quarter _____<br>date of last report _____ |

| 4. Name and Address of Reporting Entity: | 5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime: |
|---|---|
| [x] Prime [ ] Subawardee<br>Tier _____, *if known*:<br><br>**Congressional District**, *if known*: 4c 15 | **Congressional District**, *if known*: |
| **6. Federal Department/Agency:**<br>Department of Housing and Urban Development | **7. Federal Program Name/Description:**<br><br>CFDA Number, *if applicable*: _____ |
| **8. Federal Action Number**, *if known*: | **9. Award Amount**, *if known*:<br>$ |
| **10. a. Name and Address of Lobbying Registrant**<br>(*if individual, last name, first name, MI*): | **b. Individuals Performing Services** (*including address if different from No. 10a*)<br>(*last name, first name, MI*): |

**11.** Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: 
Print Name: Mike R. Lopez
Title: Executive Director
Telephone No.: (956)969-5865 Date: 1/24/14

**Federal Use Only:**

Authorized for Local Reproduction
Standard Form LLL (Rev. 7-97)

**AI-43378** **County Judge's Office 6. B.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Jaime Longoria **Submitted By:** SANDRA DELEON, COUNTY JUDGE

**Department:** COUNTY JUDGE

## Information

**CAPTION**

Approval to process the following invoices as a claim with authority for County Treasurer to issue check after auditing procedures are completed by County Auditor.

| | *Invoice Date* | *Invoice No.* | *Amount* |
|---|---|---|---|
| ***Xerox Corporation*** | 12/01/2013 | 071376573 | $233.10 |
| | 01/01/2014 | 071874499 | $233.10 |
| | 02/02/2014 | 072510671 | $233.10 |

**BACKGROUND**

4-1100-413-00-110-077-0-780

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-413-00-110-077-0-780

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funds available as of 2/28/2014.

## Attachments

invoices

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/28/2014 10:35 AM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 02:43 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: SANDRA DELEON Started On: 02/27/2014 02:52 PM

Final Approval Date: 02/28/2014

2135-001

Customer Information

XEROX CORPORATION
PO BOX 660502
DALLAS TX
75266

THE EASY WAY
TO ORDER SUPPLIES
CALL OUR TOLL
FREE NUMBER
1-800-822-2200

10083603
Purchase Order Number

C1080
Special Reference

VTX00000X-000
Contract Number

NET 30 DAYS
Terms Of Payment

RECEIVED
DEC 04 2013
COUNTY JUDGE

Telephone888-435-6333
Please Direct Inquiries To:
Ship To/Installed At:

HIIDALGO COUNTY
EMBRGENCY MGMT
302 W UNIVERSITY DR
EDINBURG TX
78539

Bill To:
2135-001
(DAH)HIDALGO COUNTY
PURCHASING
281
2802 S BUSINESS HWY
EDINBURG TX
78539

12-01-13
Invoice Date

071376573
Invoice Number

712166636
Customer Number

Invoice

5740PT WC5740 PRNTR/4TRAY SER.# XEK-498637

| | | | AMOUNT |
|---|---|---|---|
| BASE CHARGE | NOVEMBER | | 233.10 |
| METER USAGE | 08-21-13 TO 11-21-13 | | |
| METER 1 | 111146 113572 | 2426 | |
| PRINT CHARGES | | | |
| METER 1 PRINTS | 2426 | | |
| LESS ALLOWANCE | 60000 | | |
| NET BILLABLE PRINTS | 0 .009100 | .00 | |
| TOTAL EXCESS PRINT CHARGES | | | .00 |
| BASIC OFC FINISHER | SER.# BAS3OFIN | | INCL |
| 4K SHT HIGH CAP FD | SER.# 4KHCF | | INCL |
| | SUB TOTAL | | 233.10 |
| | TOTAL | | 233.10 |

INVOICE FOR THE PERIODIC PAYMENT ON YOUR XEROX AGREEMENT
THIS AGREEMENT INCLUDES EQUIPMENT, MAINTENANCE AND SUPPLY CHARGES
THIS COST PER COPY AGREEMENT RENEWS ON 01-30-14
TOTAL OF INVOICE MAY VARY ACCORDING TO METER USAGE BILLED

XEROX FEDERAL IDENTIFICATION #16-0468020

Payment

PLEASE INCLUDE THIS STUB WITH YOUR PAYMENT, OR WRITE YOUR INVOICE NUMBER(S) ON YOUR CHECK.

Ship To/Installed At
HIIDALGO COUNTY
EMBRGENCY MGMT
302 W UNIVERSITY DR
EDINBURG TX
78539

Bill To
(DAH)HIDALGO COUNTY
PURCHASING
281
2802 S BUSINESS HWY
EDINBURG TX
78539

When Paying By Mail
Send Payment To:
XEROX CORPORATION
PO BOX 731892
DALLAS, TX
75373-1892

☐ Please check here if your "Bill To" address or "Ship To/Installed At" location has changed and complete reverse side.

Invoice Amount

07-461-7804 4 712166636 071376573 12-01-13 PLEASE PAY THIS AMOUNT $233.10
RF101886 C 020111 VTX85
03 6R4B 06XR N A7310 2TC3 1 115

202100008070060 0713765739 0300233106 271216663648

1035-001

xerox

## Customer Information

XEROX CORPORATION
PO BOX 660502
DALLAS TX
75266

THE EASY WAY
TO ORDER SUPPLIES
CALL OUR TOLL
FREE NUMBER
1-800-822-2200

10083603
Purchase Order Number

C1080
Special Reference

VTX00000X-000
Contract Number

NET 30 DAYS
Terms Of Payment

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Please Direct Inquiries To:
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HIIDALGO COUNTY
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EDINBURG TX
78539

Bill To:
1035-001
(DAH)HIDALGO COUNTY
PURCHASING
281
2802 S BUSINESS HWY
EDINBURG TX
78539

01-01-14
Invoice Date

071874499
Invoice Number

712166636
Customer Number

## Invoice

5740PT WC5740 PRNTR/4TRAY SER.# XEK-498637

| | | AMOUNT |
|---|---|---|
| BASE CHARGE | DECEMBER | 233.10 |
| BASIC OFC FINISHER | SER.# BAS30FIN | INCL |
| 4K SHT HIGH CAP FD | SER.# 4KHCF | INCL |
| | SUB TOTAL | 233.10 |
| | TOTAL | 233.10 |

RECEIVED
JAN 09 2014
COUNTY JUDGE

INVOICE FOR THE PERIODIC PAYMENT ON YOUR XEROX AGREEMENT
THIS AGREEMENT INCLUDES EQUIPMENT, MAINTENANCE AND SUPPLY CHARGES
THIS COST PER COPY AGREEMENT RENEWS ON 01-30-14

XEROX FEDERAL IDENTIFICATION #16-0468020

## Payment

PLEASE INCLUDE THIS STUB WITH YOUR PAYMENT, OR WRITE YOUR INVOICE NUMBER(S) ON YOUR CHECK.

Ship To/Installed At
HIIDALGO COUNTY
EMBRGENCY MGMT
302 W UNIVERSITY DR
EDINBURG TX
78539

Bill To
(DAH)HIDALGO COUNTY
PURCHASING
281
2802 S BUSINESS HWY
EDINBURG TX
78539

When Paying By Mail
Send Payment To:
XEROX CORPORATION
PO BOX 731892
DALLAS, TX
75373-1892

☐ Please check here if your "Bill To" address or "Ship To/Installed At" location has changed and complete reverse side.

*Invoice Amount*

07-461-7804 4 712166636 071874499 01-01-14 PLEASE PAY THIS AMOUNT $233.10
RF104364 C 020111 VTX85
03 6R4B 06XR N 00000 2TC3 1 B15

202100008070060 0718744999 0300233106 271216663646

0841-001

## Customer Information

XEROX CORPORATION
PO BOX 660502
DALLAS TX
75266

THE EASY WAY TO ORDER SUPPLIES CALL OUR TOLL FREE NUMBER 1-800-822-2200

10083603
Purchase Order Number

C1080
Special Reference

VTX00000X-000
Contract Number

NET 30 DAYS
Terms Of Payment

Telephone 888-435-6333
Please Direct Inquiries To:
Ship To/Installed At:

HIIDALGO COUNTY
EMBRGENCY MGMT
302 W UNIVERSITY DR
EDINBURG TX
78539

Bill To:
0841-001
(DAH)HIDALGO COUNTY
PURCHASING
281
2802 S BUSINESS HWY
EDINBURG TX
78539

02-02-14
Invoice Date

072510671
Invoice Number

712166636
Customer Number

## Invoice

5740PT WC5740 PRNTR/4TRAY SER.# XEK-498637

| | | | AMOUNT |
|---|---|---|---|
| BASE CHARGE | JANUARY | | 233.10 |
| METER USAGE | 11-21-13 TO 01-30-14 | | |
| METER 1 | 113572 114713 | 1141 | |
| PRINT CHARGES | | | |
| METER 1 PRINTS | 1141 | | |
| LESS ALLOWANCE | 45999 | | |
| LESS SERVICE CREDITS | 100 | | |
| NET BILLABLE PRINTS | 0 .009100 | .00 | |
| TOTAL EXCESS PRINT CHARGES | | | .00 |
| BASIC OFC FINISHER | SER.# BAS3OFIN | | INCL |
| 4K SHT HIGH CAP FD | SER.# 4KHCF | | INCL |
| | SUB TOTAL | | 233.10 |
| | TOTAL | | 233.10 |

** ALLOWANCE PRORATED FOR 069 DAYS
FINAL INVOICE FOR PERIOD ENDING 01-30-14
CONTRACT RENEWED TO 01-30-15

NEW FISCAL PERIOD MAY REQUIRE PURCHASE ORDER FOR ABOVE EQUIPMENT.
CONTACT YOUR LOCAL BRANCH FOR COPY OF CURRENT CATALOG/PRICE LIST.
INVOICE FOR THE PERIODIC PAYMENT ON YOUR XEROX AGREEMENT
THIS AGREEMENT INCLUDES EQUIPMENT, MAINTENANCE AND SUPPLY CHARGES
TOTAL OF INVOICE MAY VARY ACCORDING TO METER USAGE BILLED

XEROX FEDERAL IDENTIFICATION #16-0468020

---

## Payment

PLEASE INCLUDE THIS STUB WITH YOUR PAYMENT, OR WRITE YOUR INVOICE NUMBER(S) ON YOUR CHECK.

Ship To/Installed At
HIIDALGO COUNTY
EMBRGENCY MGMT
302 W UNIVERSITY DR
EDINBURG TX
78539

Bill To
(DAH)HIDALGO COUNTY
PURCHASING
281
2802 S BUSINESS HWY
EDINBURG TX
78539

When Paying By Mail
Send Payment To:
XEROX CORPORATION
PO BOX 731892
DALLAS, TX
75373-1892

☐ Please check here if your "Bill To" address or "Ship To/Installed At" location has changed and complete reverse side.

*Invoice Amount*

PLEASE PAY THIS AMOUNT $233.10

07-461-7804 4 712166636 072510671 02-02-14
RR005989 C 020111 VTX85
03 6R4B 06XR N A7315 2TC3 1 115

202100008070060 0725106719 0300233106 2712166636 44

**AI-43346** **Comm. Court Executive Office 7. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

### CAPTION

Approval to accept settlement check from Allstate Insurance Company in the amount of $2,110.48 to settle auto accident with County vehicle. (Sheriff Office)

### BACKGROUND

DOI: 12/24/13

Acct #: 4-1100-360-00-000-005-0-000

## Attachments

Allstate Settlement Check

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/27/2014 09:59 AM |
| Obdett Calzada | Obdett Calzada | 02/27/2014 03:08 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/26/2014 03:13 PM

Final Approval Date: 02/28/2014

Allstate Insurance Company - Claims Payment Processing
P.O. Box 650048 , Dallas, TX 75265 , United States

COUNTY OF HIDALGO TEXAS
9805 N 10TH ST
MCALLEN TX 78504-9529

Allstate
You're in good hands.

02/19/2014

COUNTY OF HIDALGO TEXAS,

ENCLOSED PLEASE FIND PAYMENT IN THE AMOUNT OF $2,110.48 FOR YOUR LOSS ON 12/24/2013.

PLEASE REFERENCE CLAIM DETAILS BELOW.

CLAIM NUMBER: 0311175616
DATE OF LOSS: 12/24/2013
INSURED: SANTOS HERNANDEZ

In payment for Property Damage Liability for Date of Loss 12/24/2013.

ALLSTATE FIRE AND CASUALTY INSURANCE COMPANY
1-800-255-7828

3-2055SW 00000201402190008902CT03001001000912

INSURED: SANTOS HERNANDEZ
CLAIMANT: COUNTY OF HIDALGO TEXAS
IN PAYMENT OF: LOSS ON 12/24/2013.

| POLICY NUMBER | CLAIM NUMBER | |
|---|---|---|
| 816851059 | 0311175616 | |
| TAX ID | DESK LOC | EMPLOYEE ID |
| | TNN | J146 |
| Bank of America NA Atlanta,Dekalb Cty,Georgia | Bank of America Customer Connection | |

64-1278
611

PAY: TWO THOUSAND ONE HUNDRED TEN DOLLARS AND FORTY-EIGHT CENTS

2,110.48

Allstate

| INVOICE NUMBER | MCO | DATE ISSUED |
|---|---|---|
| | 8280 | 02/19/2014 |

151278191

TO THE ORDER OF COUNTY OF HIDALGO TEXAS
9805 N 10TH ST
MCALLEN TX 78504-9529

COMPANY: ALLSTATE FIRE AND CASUALTY INSURANCE COMPANY

VOID IF NOT PRESENTED WITHIN THREE HUNDRED, SIXTY-FIVE DAYS OF DATE OF ISSUE

Catherine S Bruce
Samuel H. Pilch
AUTHORIZED SIGNATURES

SECURITY FEATURES INCLUDED - SEE DETAILS ON BACK

⑈151278191⑈ ⑆061112788⑆ 329 911 9562⑈

# Repair Invoice

| HCSO Motor Pool | |
|---|---|
| 711 El Cibolo Rd | |
| Edinburg, Texas 78539 | |
| 956.393.6185 | 956.393.6189 |

***Javier Zarate***

| 286 | UNIT |
|---|---|
| 711 EL CIBOLO RD | |
| | |
| Edinburg, Texas | |
| | |
| | |

| INV0004300 | |
|---|---|
| 12/31/2013 | |
| 12/31/2013 | |
| FORD | EXPEDITION |
| 1FMFU15508LA06010 | 1020282 |
| 152506 | 2008 |

**PROBLEM DESCRIPTION:**

| QUANTITY | PART NUMBER | PART DESCRIPTION | PRICE | TOTAL |
|---|---|---|---|---|
| 1 | 2L3Z-06A050-AA | TRAILER HITCH | | $137.16 |
| 1 | <40010 | KIFTGATE | | $1,583.32 |

| QUANTITY | SERVICE | SERVICE | PRICE | TOTAL |
|---|---|---|---|---|
| 1 | MAINT | REPLACE | | $390.00 |

***Always check your tires, lights, and fluid levels.***

| | |
|---|---|
| Other: | $0.00 |
| Tax: | $0.00 |
| **Total:** | $2,110.48 |
| Amount Paid: | $2,110.48 |
| **Balance Due:** | $0.00 |

Authorized signature _____

**AI-43347** **Comm. Court Executive Office 7. D.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

### CAPTION

Approval to accept settlement check from USAA Garrison Property & Casualty Insurance Company in the amount of $335.10 to settle auto accident with County vehicle. (Constable Precinct 3)

### BACKGROUND

DOI: 01/16/14

Acct #: 4-1100-360-00-000-005-0-000

## Attachments

USAA Garrison Property & Casualty Settlement Check

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/27/2014 10:04 AM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 11:30 AM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/26/2014 03:20 PM

Final Approval Date: 02/28/2014

MAIL DIRECT

03292.17GYQ.JSS803597088.01.01.436
COUNTY OF HILDAGO
9805 N 10TH ST
MCALLEN, TX 78504

USAA Garrison Property and Casualty Insurance Company
PO Box 33490
San Antonio, TX 78265

INVOICE #: USAA-77710245814035045920
USAA #: 024587177
LOSS RPT #: 1
LOSS DATE: 01/16/2014
POLICYHOLDER:
SUSANA GUERRERO

LOB: AUT
CLAIMS REP: 08097-06
CHECK #: 0007374963
CHECK DATE: 02/18/2014

| EXPLANATION OF PAYMENT | TOTAL PAYMENT AMOUNT |
|---|---|
| Payment under Property Damage Liability Coverage county of hildago, 2006 FORD F-150 4X4 STYLESIDE | $**335.10 |

18433-1013 93868-1209

FACE OF DOCUMENT HAS A COLORED BACKGROUND. THE BACK CONTAINS AN ARTIFICIAL WATERMARK. HOLD AT ANGLE TO VIEW.

USAA®

USAA Garrison Property and Casualty Insurance Company
PO Box 33490
San Antonio, TX 78265

0007374963

DATE
02/18/2014

CHECK AMOUNT
$**335.10

PAY **Three Hundred Thirty-Five and 10/100 s**

TO THE ORDER OF: COUNTY OF HILDAGO

USAA #: 024587177 / LR #: 1

NATURE OF PAYMENT:
Payment under Property Damage Liability Coverage county of hildago, 2006
FORD F-150 4X4 STYLESIDE
BANK OF AMERICA - HARTFORD, CT

VOID 180 DAYS FROM ISSUE DATE

AUTHORIZED SIGNATURE

⑈0007374963⑈ ⑆011900445⑆ 224001566 5⑈

02/04/2014 at 11:50 AM File ID: 1284329
114819

**AUDIT SERVICES INC.**
**USAA Estimate Audit**
2123 Eastview Parkway
Conyers, GA 30013
(800)647-3626x6339 Fax: (800)952-5371
Written By: WILLIAM NELSON 02/04/2014 11:50 AM

For: **USAA - Tampa**
Adjuster: Luke Hulslander

**ESTIMATE OF RECORD**

**Insured:** SUSANA GUERRERO
**Owner:** county of hildago
**Address:** 9805 N 10TH ST
MCALLEN, TX 78504
**Day:**
**Evening:**

**Claim #**024587177000000001002
**Policy #**024587177
**Date of Loss:** 01/16/2014 at 12:00 AM
**Type of Loss:** Liability
**Point of Impact:** 8. Left Quarter Po

**Inspect Location:** county of hildago
9805 N 10TH ST
MCALLEN, TX 78504

OTHER

**Repair Facility:** J&D AUTO REFINISH CENTER
1015 W KIKA DE LA GARZA
FAX (956) 580-9965
MISSION, TX 78752

**Business:** (956)580-2810
2 Days to Repair
**License #** FEIN - 742859064

2006 FORD F150 4X2 SUPERCAB 8-4.6L-FI 4D SHORT GOLD Int:
**VIN:** 1FTPX12V16KD82030 **Lic:** 230188 TX **Prod Date:** **Odometer:** 0

| | | |
|---|---|---|
| Air Conditioning | Intermittent Wipers | Tilt Wheel |
| Message Center | Dual Mirrors | Clear Coat Paint |
| Power Steering | Power Brakes | AM Radio |
| FM Radio | Stereo | Search/Seek |
| Driver Side Air Bag | Passenger Air Bag | Anti-Lock Brakes (4) |
| 4 Wheel Disc Brakes | Rear Step Bumper | Automatic Transmission |
| Overdrive | | |

| NO. | OP. | DESCRIPTION | QTY | EXT. PRICE | LABOR | PAINT |
|---|---|---|---|---|---|---|
| 1 | | REAR BUMPER | | | | |
| 2 | R&I | R&I bumper assy | | | 0.6 | |
| 3 | | PICK UP BOX | | | | |
| 4* | Rpr | LT Side panel 6.5 foot bed w/o whl opng | | | 2.0 | 1.9 |
| 5 | | Add for Clear Coat | | | | 0.8 |
| 6 | | REAR LAMPS | | | | |
| 7 | R&I | LT Tail lamp assy | | | 0.3 | |
| 8# | Repl | LT Tail lamp (already replaced by owner, pay per invoice) | 1 | 39.10 | Incl. | |
| 9# | Subl | Hazardous Waste Removal | 1 | 3.00 | | |
| 10# | Repl | Car Cover | 1 | 10.00 | | |

02/04/2014 at 11:50 AM File ID: 1284329
114819

**ESTIMATE OF RECORD**

2006 FORD F150 4X2 SUPERCAB 8-4.6L-FI 4D SHORT GOLD Int:

| NO. | OP. | DESCRIPTION | QTY | EXT. PRICE | LABOR | PAINT |
|---|---|---|---|---|---|---|
| | | Subtotals ==> | | 52.10 | 2.9 | 2.7 |

Estimate Notes:
AN AGREED COST OF REPAIRS HAS BEEN SECURED WITH LUCIANO AT THE SHOP ON 02/04/14. ESTIMATE COPY FAXED TO SHOP. PLEASE CALL THE LISTED ESTIMATOR OR ALL SUPPLEMENTS. SUPPLEMENTS WILL NOT BE PROCESSED WITHOUT SUPPORTING DOCUMENTS INCLUDING PARTS INVOICES AND PHOTOS. PLEASE SEND SUPPLEMENT DOCUMENTATION AND PHOTOS TO SUPPLEMENTS@ASICLAIMS.COM. VEHICLE IS DRIVEABLE. DATE OF MANUFACTURE UNAVAILABLE, THE VEHICLE IS SUBJECT TO QRP. A COPY OF THE ESTIMATE AND QRP BROCHURE HAVE BEEN MAILED TO THE VEHICLE OWNER. DATE ESTIMATE RECEIVED 02/03/14. DATE ESTIMATE REVIEWED 01/29/14. DATE ESTIMATE REVIEW UPLOADED 02/04/14. ASI HAS CONTACTED THE VEHICLE OWNER AND NOTIFIED THEM OF THE REVISED ESTIMATE AMOUNT.

ASI HAS CONTACTED THE VEHICLE OWNER AND NOTIFIED THEM OF THE REVISED ESTIMATE AMOUNT.

| | | |
|---|---|---|
| Parts | | 52.10 |
| Body Labor | 2.9 hrs @ $ 38.00/hr | 110.20 |
| Paint Labor | 2.7 hrs @ $ 38.00/hr | 102.60 |
| Paint Supplies | 2.7 hrs @ $ 26.00/hr | 70.20 |
| SUBTOTAL | | $ 335.10 |
| TOTAL COST OF REPAIRS | | $ 335.10 |
| TOTAL ADJUSTMENTS | | $ 0.00 |
| NET COST OF REPAIRS | | $ 335.10 |

THIS ESTIMATE AUDIT DOES NOT REPRESENT AUTHORIZATION TO REPAIR OR AN ACCEPTANCE/DETERMINATION OF LIABILITY. THIS ESTIMATE AUDIT DOES NOT CONFIRM THAT PAYMENT WILL BE ISSUED. SIGNED AUTHORIZATION MUST BE OBTAINED BY THE REPAIR FACILITY FROM THE VEHICLE OWNER PRIOR TO STARTING REPAIR. THE VEHICLE OWNER SHOULD CONFIRM COVERAGE WITH HIS /HER CLAIM REPRESENTATIVE PRIOR TO SIGNING ANY REPAIR AUTHORIZATION. A COPY OF THIS ESTIMATE AUDIT MUST BE PRESENTED TO THE REPAIR SHOP OF YOUR CHOICE PRIOR TO THE START OF REPAIRS. ALL SUPPLEMENTS REQUIRE PRIOR APPROVAL. PLEASE CALL (800) 647-3626 FOR ANY QUESTIONS REGARDING SUPPLEMENTS ETC.

**AI-43391** **Comm. Court Executive Office 7. E.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Approval to accept settlement check from National Union Fire Insurance Company in the amount of $901.98 to settle auto accident with County vehicle. (HIDTA Task Force)

**BACKGROUND**

DOI: 01/28/14

Acct #: 4-1100-360-00-000-005-0-000

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-360-00-000-005-0-000

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Revenues...

## Attachments

National Union Fire Insurance Settlement Check

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/28/2014 11:13 AM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 01:33 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/28/2014 10:58 AM

Final Approval Date: 02/28/2014

P4000028001

**AMERICAN INTERNATIONAL GROUP - (LMS)**
P.O. Box 9918
Amarillo, TX 79105-5918

RECEIVED FEB 27 2014

201402214700

**Electronic Service Requested**

ENV 11961 1 OF 1

MIXED AADC 783
11961 0.3820 FP 0.460

COUNTY OF HILDGO
ATTN: CHRIS YATES
PO BOZX 5719
MCALLEN, TX 78502

295

**Check No.:** 25731962
**RFP No.:** 423479
**Check Date:** 02/21/2014
**Check Amount:** 901.98
**Insured:** TRES AGUILAS ENTERPRISES LLC
**Claimant:** COUNTY OF HILDGO

**Claim Office:** 683
**Insuring Company:** NATIONAL UNION FIRE INSURANCE CO. OF PITTSBURGH
**Payee Name:** COUNTY OF HILDGO

| Policy No. | Claim No. | Symbol | Date of Loss | Type | Status | Amount |
|---|---|---|---|---|---|---|
| 000000939702 | 00598496 | 01 | 01/28/2014 | IND | C | 901.98 |
| | | | | | **Total Amount** | 901.98 |

**Reason for Payment**
PER EST FROM BOGGUS FORD.

**Use File # 683/ 00598496 on all correspondence for prompt processing.**
**For check information call: 877-802-5246**

FOR SECURITY PURPOSES, THE FACE OF THIS DOCUMENT CONTAINS A BLUE BACKGROUND AND MICROPRINTING IN THE BORDER
NATIONAL UNION FIRE INSURANCE CO. OF PITTSBURGH

50-937/213

Claim No: 00598496 Policy No.: 000000939702
Reason for Payment PER EST FROM BOGGUS FORD.

| | |
|---|---|
| CHECK No. | 25731962 |
| RFP No. | 00423479 |
| DATE | 02/21/2014 |

*********Nine Hundred One & 98/100 Dollars***

**AMOUNT PAID**
*******$901.98

Void after 90 Days

Pay TO THE ORDER OF
COUNTY OF HILDGO
PO BOX 5719
MCALLEN
TX, 78502

6465842

JPMORGAN CHASE BANK, N.A
SYRACUSE, NY 13206

ABF006

AUTHORIZED SIGNATURE

DO NOT CASH IF WATERMARK IS NOT PRESENT ON THE REVERSE SIDE OF THIS DOCUMENT - HOLD AT AN ANGLE TO VIEW

⑈25731962⑈ ⑆021309379⑆ 7864205391⑈

# BOGGUS FORD-MC ALLEN

1400 E US HIGHWAY 83, MC ALLEN, TX 78501
Phone: (956) 686-0911
FAX: (956) 686-0974

Workfile ID: cc7bd680
Federal ID: 275381820

## Preliminary Estimate

**Customer: HIDALGO COUNTY HIDTA TASK FORCE** **Job Number:**

Written By: RICK MENDOZA

| | | | |
|---|---|---|---|
| Insured: | HIDALGO COUNTY HIDTA TASK FORCE | Policy #: | Claim #: |
| Type of Loss: | | Date of Loss: | Days to Repair: 0 |
| Point of Impact: | 06 Rear | | |

**Owner:**
HIDALGO COUNTY HIDTA TASK FORCE
PO BOX 5719
MCALLEN, TX
(956) 381-0444 Business
(111) 111-1111 x11 Cell

**Inspection Location:**
BOGGUS FORD-MC ALLEN
1400 E US HIGHWAY 83
MC ALLEN, TX 78501
Repair Facility
(956) 686-0911 Day

**Insurance Company:**

## VEHICLE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year: | 2013 | Body Style: | 4D SED | VIN: | 3FA6P0G72DR311871 | Mileage In: | |
| Make: | FORD | Engine: | 4-2.5L-FI | License: | | Mileage Out: | |
| Model: | FUSION S | Production Date: | | State: | | Vehicle Out: | |
| Color: | Int: | Condition: | | Job #: | | | |

**TRANSMISSION**
Automatic Transmission

**POWER**
Power Steering
Power Brakes
Power Windows
Power Locks
Power Mirrors

**DECOR**
Dual Mirrors
Tinted Glass
Console/Storage
Overhead Console

**CONVENIENCE**
Air Conditioning
Intermittent Wipers
Tilt Wheel
Cruise Control
Rear Defogger
Keyless Entry
Alarm
Message Center
Steering Wheel Touch Controls
Telescopic Wheel
Climate Control

**RADIO**
AM Radio
FM Radio
Stereo
Search/Seek
CD Player
Auxiliary Audio Connection

**SAFETY**
Drivers Side Air Bag
Passenger Air Bag
Anti-Lock Brakes (4)
4 Wheel Disc Brakes
Front Side Impact Air Bags
Head/Curtain Air Bags
Hands Free Device

**SEATS**
Cloth Seats
Bucket Seats

**WHEELS**
Styled Steel Wheels

**PAINT**
Clear Coat Paint

**OTHER**
Traction Control
Stability Control
Power Trunk/Gate Release

## Preliminary Estimate

**Customer: HIDALGO COUNTY HIDTA TASK FORCE** **Job Number:**

Vehicle: 2013 FORD FUSION S 4D SED 4-2.5L-FI

| Line | | Oper | Description | Part Number | Qty | Extended Price $ | Labor | Paint |
|---|---|---|---|---|---|---|---|---|
| 1 | **TRUNK LID** | | | | | | | |
| 2 | * | Rpr | Trunk lid w/o spoiler | | | | 3.0 | 2.3 |
| 3 | | | Add for Clear Coat | | | | | 0.9 |
| 4 | | R&I | Lower panel | | | | 0.3 | |
| 5 | * | Rpr | Lower panel | | | | 1.0 | 1.0 |
| 6 | | | Add for Clear Coat | | | | | 0.2 |
| 7 | * | R&I | Emblem "FORD" | | | | 0.3 | |
| 8 | * | R&I | Nameplate "FUSION" | | | | 0.2 | |
| 9 | **REAR LAMPS** | | | | | | | |
| 10 | | Repl | RT Backup lamp assy w/o ENERGI | DS7Z13404A | 1 | 125.40 | 0.2 | |
| 11 | **REAR BUMPER** | | | | | | | |
| 12 | * | Rpr | Bumper cover w/park sensors w/o auto park | | | | 1.5 | 2.0 |
| 13 | | | Add for Clear Coat | | | | | 0.8 |
| | | | **SUBTOTALS** | | | **125.40** | **6.5** | **7.2** |

### ESTIMATE TOTALS

| Category | Basis | | Rate | Cost $ |
|---|---|---|---|---|
| Parts | | | | 125.40 |
| Body Labor | 6.5 hrs | @ | $ 40.00 /hr | 260.00 |
| Paint Labor | 7.2 hrs | @ | $ 40.00 /hr | 288.00 |
| Paint Supplies | 7.2 hrs | @ | $ 28.00 /hr | 201.60 |
| Subtotal | | | | 875.00 |
| Sales Tax | $ 327.00 | @ | 8.2500 % | 26.98 |
| **Grand Total** | | | | **901.98** |
| Deductible | | | | 0.00 |
| **CUSTOMER PAY** | | | | **0.00** |
| **INSURANCE PAY** | | | | **901.98** |

**Customer: HIDALGO COUNTY HIDTA TASK FORCE** **Job Number:**

Vehicle: 2013 FORD FUSION S 4D SED 4-2.5L-FI

Estimate based on MOTOR CRASH ESTIMATING GUIDE. Unless otherwise noted all items are derived from the Guide DR2JP13, CCC Data Date 2/14/2014, and the parts selected are OEM-parts manufactured by the vehicles Original Equipment Manufacturer. OEM parts are available at OE/Vehicle dealerships. OPT OEM (Optional OEM) or ALT OEM (Alternative OEM) parts are OEM parts that may be provided by or through alternate sources other than the OEM vehicle dealerships. OPT OEM or ALT OEM parts may reflect some specific, special, or unique pricing or discount. OPT OEM or ALT OEM parts may include "Blemished" parts provided by OEM's through OEM vehicle dealerships. Asterisk (*) or Double Asterisk (**) indicates that the parts and/or labor information provided by MOTOR may have been modified or may have come from an alternate data source. Tilde sign (~) items indicate MOTOR Not-Included Labor operations. The symbol (<>) indicates the refinish operation WILL NOT be performed as a separate procedure from the other panels in the estimate. Non-Original Equipment Manufacturer aftermarket parts are described as Non OEM or A/M. Used parts are described as LKQ, RCY, or USED. Reconditioned parts are described as Recond. Recored parts are described as Recore. NAGS Part Numbers and Benchmark Prices are provided by National Auto Glass Specifications. Labor operation times listed on the line with the NAGS information are MOTOR suggested labor operation times. NAGS labor operation times are not included. Pound sign (#) items indicate manual entries.

Some 2014 vehicles contain minor changes from the previous year. For those vehicles, prior to receiving updated data from the vehicle manufacturer, labor and parts data from the previous year may be used. The CCC ONE estimator has a complete list of applicable vehicles. Parts numbers and prices should be confirmed with the local dealership.

The following is a list of additional abbreviations or symbols that may be used to describe work to be done or parts to be repaired or replaced:

SYMBOLS FOLLOWING PART PRICE:
m=MOTOR Mechanical component. s=MOTOR Structural component. T=Miscellaneous Taxed charge category. X=Miscellaneous Non-Taxed charge category.

SYMBOLS FOLLOWING LABOR:
D=Diagnostic labor category. E=Electrical labor category. F=Frame labor category. G=Glass labor category. M=Mechanical labor category. S=Structural labor category. (numbers) 1 through 4=User Defined Labor Categories.

OTHER SYMBOLS AND ABBREVIATIONS:
Adj.=Adjacent. Algn.=Align. ALU=Aluminum. A/M=Aftermarket part. Blnd=Blend. BOR=Boron steel. CAPA=Certified Automotive Parts Association. D&R=Disconnect and Reconnect. HSS=High Strength Steel. HYD=Hydroformed Steel. Incl.=Included. LKQ=Like Kind and Quality. LT=Left. MAG=Magnesium. Non-Adj.=Non Adjacent. NSF=NSF International Certified Part. O/H=Overhaul. Qty=Quantity. Refn=Refinish. Repl=Replace. R&I=Remove and Install. R&R=Remove and Replace. Rpr=Repair. RT=Right. SAS=Sandwiched Steel. Sect=Section. Subl=Sublet. UHS=Ultra High Strength Steel. N=Note(s) associated with the estimate line.

CCC ONE Estimating - A product of CCC Information Services Inc.

The following is a list of abbreviations that may be used in CCC ONE Estimating that are not part of the MOTOR CRASH ESTIMATING GUIDE:
BAR=Bureau of Automotive Repair. EPA=Environmental Protection Agency. NHTSA= National Highway Transportation and Safety Administration. PDR=Paintless Dent Repair. VIN=Vehicle Identification Number.

**AI-42922** **Comm. Court Executive Office 7. F.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Monica Badillo,
EXECUTIVE OFFICE

**Department:** EXECUTIVE OFFICE

## Information

**CAPTION**

Approval of 2014 Library Interlocal Agreements between Hidalgo County and the following cities: Alamo, Donna, Edinburg, Elsa, Hidalgo, La Joya, McAllen, Mercedes, Mission, Penitas, Pharr, San Juan and Weslaco

**BACKGROUND**

Agreements have been attached.

Acct. #4-1100-455-00-125-024-0-841 - $ 230,026.04 available

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-455-00-125-024-0-841

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Funds available as of 02/06/2014. $230,026.04.

## Attachments

MINUTES
legal
1
2
3
4
5
6
7
8
9
10
11
12
13

# Form Review

| Inbox | Reviewed By | Date |
| --- | --- | --- |
| Budget & Management | Debbie Tamez | 01/31/2014 02:44 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Monica Badillo Started On: 01/29/2014

Final Approval Date: 02/28/2014

**Hidalgo County Li rary System**
**Ad isory Board Meeting**
**Date: Fe ruary 20, 2014**
**Location: P arr Memorial Li rary**

**Directors (or Representati es) Present:**

| | | | |
|---|---|---|---|
| **Socorro Gracia** | Mercedes | **Arnoldo Bec o** | Weslaco |
| **Elodia Rios** | Donna | **Mayra Roc a** | Mission |
| **Letty Lei a** | Edinburg | **Yenni Espino a** | Peñitas |
| **Hilda Molina** | Elsa | **Adol o Garcia** | Pharr |
| **Ed ard Lope** | Hidalgo | **Armandina Ses n** | San Juan |
| **Susana Villegas** | La Joya | | |
| **ate Horan** | McAllen | | |

**Board Mem ers Present:**

| | |
|---|---|
| **C ristine Warren** | Weslaco |

**Ot ers Present:**

| | | | |
|---|---|---|---|
| **Jaime Cardo a** | Edinburg | **Da n Rapo a** | McAllen |
| **Jorge L. Gon ale** | McAllen | | |

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**Call to Order:** Arnoldo Becho called the meeting to order at 11:00 a.m.

**Re ie o Minutes:** *Hilda from Elsa made a Motion to approve the minutes as corrected and Yenni from Peñitas seconded the Motion. The Motion passes unanimously.*

**Old Business**

**HCLS Interlocals:** The Interlocals will be distributed after they have been approved at a Hidalgo County Commissioners' meeting. It looks likely that the Interlocal Agreement will be placed on the agenda of the next Commissioners' meeting. HCLS needs to send the minutes with a vote regarding fund distribution and expenditure.

*Kate Horan from McAllen then made a motion: The Hidalgo County Library System (HCLS) will divide the funds allocated by Hidalgo County, for the libraries in HCLS, equally among the libraries after paying for TLC. Letty Leija from Edinburg seconded the Motion. The Motion passed unanimously.*

HCLS may consider products for purchase as a consortium over the next year in order to perhaps use next year's County funds for these products. A discussion ensued about Overdrive, E-Books, and the best options available to create an E-book collection for HCLS. Other vendors and other services were also considered. Adolfo suggested formation of a committee to look into what other items or services we may be interested in. Adolfo was chosen to Chair that Committee.

**We site updates, Sc edule, By la s:** Adolfo supplied the information needed to update the website and Jaime has made some of those changes. Arnold asked that we look at the website and suggest corrections. Please send this information to Jaime and Arnold. Letty asked that we put information about FESTIBA on the website and

the librarians consented. Last year during FESTIBA HCLS had a booth and plans are being made to again attend FESTIBA as a group. FESTIBA is going to take place the 21st of March within the courtyard of Edinburg City Hall. Kate from McAllen will look for a banner for the HCLS booth. Letty will coordinate with libraries who wish to attend.

**Ne Business**

**ILL Issues and Na igator:** A discussion ensued on ILL issues. The Interlocal ILL (email/TLC) process was discussed. No official procedures exist and no understanding was found within the meeting. The libraries did agree to use the next 30 days to examine possible procedures for adoption next meeting.

**E-Rate Priority 2:** Priority 2 (equipment and maintenance) funding is being considered for denial by USAC. A discussion ensued on this item. Kate commented that we should write a letter from HCLS to the FCC Board, Congressman Hinojosa and Congressman Vela requesting support for Priority 2 funding.

**HCLS Secretary:** There was confusion about the secretary post for HCLS. At the last meeting, the President and Vice-President were elected but not the Secretary. The minutes, from the last meeting, state that Armandina from the San Juan Library is the Secretary and that the group would like her to remain as such, but there was no vote. *At this meeting Adolfo made a Motion for Armandina to stay as Secretary and Arnoldo seconded it. The Motion passed unanimously*.

**inio Consortium:** Edinburg, Mercedes, Mission, Pharr and Weslaco have begun building a magazine consortium through Zinio. Mayra from Mission will send the list of electronic magazines to all of the other libraries that are interested in joining. The platform fee is about $1,200.00 and the content cost is not known at this time. If more libraries join, the cost will be lower. On March 5th, a representative from Recorded Books will be at the Phar Library. Adolfo invited everyone to attend. The presentation will be at 11::00 a.m.

**Sc edule, Presenters, Wor s ops:** More workshops are being requested. The library hosting the meeting is responsible for presenting these workshops. A discussion ensued regarding CE credits. The Directors, as per the Sate Library, have to have 10 CE credits per year. Arnoldo will contact the State Library to find out which workshops and or webinars qualify for CE credits.

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**By La s and ot er Agreements:** These items were tabled for our next meeting. *Adolfo made a Motion to adjourn the meeting and Armandina seconded. The meeting was adjourned at 1:25 p.m.*

**Addendum**

**In ormation Exc ange:** There was no information exchange.

**Zimbra** **monica.badillo@co.hidalgo.tx.us**

## RE: 2014 Interlocal w cities

**From :** Josephine L. Ramirez <josephine.ramirez@da.co.hidalgo.tx.us> Thu, Feb 06, 2014 10:02 AM
**Subject :** RE: 2014 Interlocal w cities
**To :** 'Monica Badillo' <monica.badillo@co.hidalgo.tx.us>
**Reply To :** josephine ramirez <josephine.ramirez@da.co.hidalgo.tx.us>

Monica - the agreement is fine. Do you have a schedule for the amount allotted to each city? How have you done it in the past?

**Josephine Ramirez Solis**
*Assistant Criminal District Attorney*
County Affairs Section
**Office of Criminal District Attorney**
Hidalgo County, Texas
100 N Closner Rm 303
Edinburg, TX 78539
(956) 318-2313 ext. 3823
(956) 318-2079 FAX
josephine.ramirez@da.co.hidalgo.tx.us

**********
The information contained in this e-mail may be 1.SUBJECT TO THE ATTORNEY-CLIENT PRIVILEGE; 2.ATTORNEY WORK PRODUCT; and/or 3.CONFIDENTIAL. It is intended only for the individual or entity designated above. Any distribution, copying, or use of or reliance upon the information contained in this e-mail by or to anyone other than the recipient designated above by the sender is unauthorized and strictly prohibited. **IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE ADVISE THE SENDER BY REPLY E-MAIL TO josephine.ramirez@da.co.hidalgo.tx.us AND DELETE THE COMMUNICATION.**
**********

**From:** Monica Badillo [mailto:monica.badillo@co.hidalgo.tx.us]
**Sent:** Tuesday, February 04, 2014 5:30 PM
**To:** josephine ramirez
**Subject:** 2014 Interlocal w cities

Hi Josie,
Please review and advise. (This is the yearly agreement for the 13 libraries (each city). I have just sent you one.
Thanks,

**Monica Badillo, Court Administrator**
Hidalgo County Executive Office
2818 S. Bus. Hwy. 281
Edinburg, Texas 78539
(956) 292-7655 ext. 5602
(956) 292-7034 (fax)

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

## INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF ALAMO, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF ALAMO, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Alamo, Texas
Attn: City Manager
420 N. Tower Road
Alamo, Texas 78516

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF ALAMO, TEXAS

_____
Diana Martinez, Mayor

ATTEST:

By: _____
Margot Saenz, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

## INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF DONNA, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF DONNA, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Donna, Texas
Attn: City Manager
307 S 12th Street
Donna, Texas 78537

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ___day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF DONNA, TEXAS

_____
David Simmons, Mayor

ATTEST:

By: _____
_____, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ ,City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

# INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF EDINBURG, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF EDINBURG, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

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WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

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3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

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If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Edinburg, Texas
Attn: City Manager
415 W. University Dr.
Edinburg, Texas 78539

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

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15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms.

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____ day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF EDINBURG, TEXAS

_____
Richard H. Garcia, Mayor

ATTEST:

By: _____
Myra L. Ayala Garza, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____, City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

# INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF ELSA, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF ELSA, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Elsa, Texas
Attn: City Manager
216 E 4th Street
Elsa, Texas 78543

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF ELSA, TEXAS

_____
_____, Mayor

ATTEST:

By: _____
_____, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____

By: _____

_____, City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

# INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF HIDALGO, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF HIDALGO, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Hidalgo, Texas 78539

If to City: City of Hidalgo, Texas
Attn: City Manager
704 E Texano Dr.
Hidalgo, Texas 78557

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____ day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF HIDALGO, TEXAS

_____
Martin Cepeda, Mayor

ATTEST:

By: _____
Joe Vera III, City Manager

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

**INTERLOCAL COOPERATION AGREEMENT**
**BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF LA JOYA, TE AS**

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF LA JOYA, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. Univeristy Dr.
Edinburg, Texas 78539

If to City: City of La Joya, Texas
Attn: City Manager
101 N Leo Ave
La Joya, Texas 78560

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF LA JOYA, TEXAS

_____
Jose A. “Fito” Salinas, Mayor

ATTEST:

By: _____
_____, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY’S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

## INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF MCALLEN, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF MCALLEN, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be

allocated to County libraries in accordance with a formula established, reviewed and approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or

amendment thereof, contrary to which the parties have no legal right to contract, the latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of McAllen, Texas
Attn: City Manager
1300 Houston Ave
McAllen, Texas 78501

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF MCALLEN, TEXAS

_____
Richard Cortez, Mayor

ATTEST:

By: _____
_____,City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____
Kevin Pagan, City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

## INTERLOCAL COOPERATION AGREEMENT
## BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF MERCEDES, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF MERCEDES, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Mercedes, Texas
Attn: City Manager
400 S Ohio St
Mercedes, Texas 78570

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF MERCEDES, TEXAS

_____
Henry Hinojosa, Mayor

ATTEST:

By: _____
_____, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

## INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF MISSION, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF MISSION, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr
Edinburg, Texas 78539

If to City: City of Mission, Texas
Attn: City Manager
1201 E 8th Street
Mission, Texas 78572

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this____ day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF MISSION, TEXAS

_____
Norberto Salinas, Mayor

ATTEST:

By: _____
Anna Carrillo, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

# INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF PENITAS, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF PENITAS, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Penitas, Texas
Attn: City Manager
_____
P.O. Box 204
Peñitas, TX 78576

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF PENITAS, TEXAS

_____
Marcos Ochoa, Mayor

ATTEST:

By: _____
Ana Cantu, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

## INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF PHARR, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF PHARR, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Pharr, Texas
Attn: City Manager
118 S Cage Blvd
Pharr, Texas 78577

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____ day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF PHARR, TEXAS

_____
Leopoldo “Polo” Palacios, Jr., Mayor

ATTEST:

By: _____
Hilda Pedraza, City Clerk

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY’S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

# INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF SAN JUAN, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF SAN JUAN, TEXAS hereinafter referred to as “City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of San Juan, Texas
Attn: City Manager
701 S Nebraska
San Juan , Texas 78589

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF SAN JUAN, TEXAS

_____
San Juanita Sanchez, Mayor

ATTEST:

By: _____
Bobby Rodriguez, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

# INTERLOCAL COOPERATION AGREEMENT BETWEEN COUNTY OF HIDALGO, TE AS AND CITY OF WESLACO, TE AS

This Agreement is made effective as of this 5th day of March, 2014, by and between HIDALGO COUNTY, TEXAS hereinafter referred to as "County," and the CITY OF WESLACO, TEXAS hereinafter referred to as 'City" pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

WHEREAS, the County has established the Hidalgo County Library System (hereinafter "HCLS");

WHEREAS, the County wishes to Contract with the City for library privileges from the City's established library;

WHEREAS, pursuant to Tex. Loc. Gov't Code Section 323.011 the City understands that the City's library will assume the functions of a County library within the County;

WHEREAS, pursuant to standard HCLS operating procedures, HCLS acquires library materials, supplies and services, electronic database services, audiovisual equipment, and computer hardware, software and other resources for library services for the free use of City's library by residents of rural areas of the County;

WHEREAS, the County and City desire to clarify the terms and conditions of the operation of HCLS, and to provide direct funding to City in certain circumstances;

WHEREAS, the County finds that the City is suitably organized to provide efficient and effective free library services to County residents under Chapter 323; and

WHEREAS, the County therefore desires to expend funds to assist City in with the expenses of establishing, operating and maintaining its free library in the County.

NOW THEREFORE, for and in good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the County and the City hereby agree as follows:

1. The County shall budget an estimated amount each year for the following fiscal year and allocate such amount from the County's General Fund as payment for various libraries of County of which City library is one. Such estimated amount will be allocated to County libraries in accordance with a formula established, reviewed and

approved by HCLS. This allocation formula shall be reviewed and approved annually at the beginning of the County fiscal year by HCLS meeting in regular-session. Funds disbursed to the City shall be in consideration for the City agreeing that the City's library will assume the functions of a county library within Hidalgo County. Funds disbursed to the City pursuant to this paragraph and HCLS provisions shall be used by City only for the City library to purchase contractual services and library materials, including but not limited to, books, supplies and services, Internet connectivity, electronic database services and connections, equipment and furnishings, and computer hardware and software.

2. The City agrees to maintain and operate its city library in accordance with the standards of the State of Texas, the State Library System Act and Local Government Code Chapter 323. The City specifically covenants to assure that the librarian of the City's library meets the minimum standards established by Texas State Library and Archives Commission ("State Library"), including any and all certification mandated by the State Library. The City further agrees to cooperate with the County in any programs, promotions or interlocal initiatives in furtherance of the purposes of HCLS.

3. The City agrees to supervise the activities and operation of its library and agrees to assume full responsibility and liability for any and all activities conducted under the terms of this Agreement.

4. The City library personnel shall not be entitled to any of the benefits of an employee of the County, including, but not limited to, County fringe benefits or the County Civil Service program.

5. This Agreement shall continue until December 31, 2014; or until amended, replaced or terminated in accordance with Chapter 323. Either party may terminate this Agreement by providing six (6) months' advance written notice to the other party. The parties agree that any property acquired under this Agreement is subject to division upon termination of this contract in accordance with Texas Local Government Code Section 323.011(c). Upon termination of this Agreement, any property acquired under this Agreement shall remain in the possession of the City in the City library and the City agrees to take any and all necessary measures to ensure that such property is safeguarded from theft and/or damage.

6. The City agrees to give County and its authorized representatives access to, and the right, to examine, excerpt and transcribe all books, accounts, records, reports, files and other papers, documents, things, or property belonging to or in use by the City in relation to its library operations for so long as such are maintained by City.

7. Conflict of Applicable Law: Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of their Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the

latter shall prevail, but in such event the affected provision(s) of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

8. No Waiver: No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

9. Entire Agreement: This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by City and County, and not otherwise.

TEXAS LAW TO APPLY. THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATION OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

10. Notice. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

If to County: County of Hidalgo
Attention: Ramon Garcia, Hidalgo County Judge
302 W. University Dr.
Edinburg, Texas 78539

If to City: City of Weslaco, Texas
Attn: City Manager
255 S Kansas Ave
Weslaco, Texas 78596

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

11. Additional Documents. The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement.

12. Successors. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

13. Assignment. This Agreement shall not be assignable.

14. Headings. The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

15. Gender and Number. All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

16. Authority to Execute. The execution and performance of this Agreement by City and County have been duly authorized by all necessary laws, resolutions corporate action, and this Agreement constitutes the valid and enforceable obligations of City and County in accordance with its terms

17. Governmental Purpose. Each party hereto is entering into this agreement for the purpose of providing for governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

18. Commitment of Current Revenues Only. In the event that, during any term, hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

[SIGNATURE PAGE TO FOLLOW]

WITNESS THE HANDS OF THE PARTIES this ____ day of March, 2014.

HIDALGO COUNTY, TEXAS

_____
Ramon Garcia, Hidalgo County Judge

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

CITY OF WESLACO, TEXAS

_____
Miguel D. Wise, Mayor

ATTEST:

By: _____
_____, City Secretary

APPROVED AS TO FORM:

HIDALGO COUNTY DISTRICT ATTORNEY'S OFFICE

By: _____
Josephine R. Solis

By: _____

_____ , City Attorney

**AI-43404** **Comm. Court Executive Office 7. G.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Monica Badillo,
EXECUTIVE OFFICE

**Department:** EXECUTIVE OFFICE

## Information

**CAPTION**

Environmental Compliance:
Reporting the submittal of Hidalgo County's Tier 2 Chemical Inventory Report for 2013 to Texas Department of State Health Services and requesting payment of the associated fee of $100.00 based on types and quantities of materials stored by the county

**BACKGROUND**

Funding: refer to AI 43406

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-413-00-125-001-0-890

**FUNDS AVAILABLE Y/N?:** Y/Pending **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

funding pending approval of AI# 43406

## Attachments

1
2

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/28/2014 03:54 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 04:36 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Monica Badillo Started On: 02/28/2014 03:43 PM

Final Approval Date: 02/28/2014

From: "DSHS T2Sdatafiles" <T2Sdatafiles@dshs.state.tx.us>
To: "Martin Ramirez" <martin.ramirez@mail.hchd.org>
Subject: Email has been received
Date: 2/28/2014 2:49:31 PM

The Texas Tier II Reporting Program has received your email. If you have any questions, please contact us at the phone number or email below. Thank you.

**Tier II Reporting Program**
**Chemical & Product Safety Licensing Group**
**Division for Regulatory Services**
**Texas Department of State Health Services**
**Phone: 512-834-6603, ext. 2432 or**
**Phone: 800-452-2791, ext. 2432 (toll-free in Texas)**
**Fax:512-834-6779; tiertwohelp@dshs.state.tx.us**
**Website:www.texastiertwo.com**

*NOTE:* *T2Sdata*files@dshs.state.tx.us is reserved for submission of data files only

# TEXAS DEPARTMENT OF STATE HEALTH SERVICES

P.O. Box 149347
Austin, Texas 78714-9347
1-888-963-7111
TTY: 1-800-735-2989
www.dshs.state.tx.us

DAVID L. LAKEY, M.D.
COMMISSIONER

December 20, 2013

COUNTY OF HIDALGO
ATTN: HEALTH & SAFETY PERSONNEL
1902 JOE STEPHENS STE 101
WESLACO, TX 78596

**Fee Payment Form & Instructions:**

The Texas Tier Two Chemical Inventory Report for calendar year 2013 is due between January 1- March 1, 2014. The Texas Tier Two Program requires reports to be submitted electronically using the 2013 Tier2 Submit software. Once you have used the software to create your report, **Please e-mail your submission to:**

**T2Sdatafiles@dshs.state.tx.us**

****PLEASE REVIEW CHANGES TO TIER2 SUBMIT 2013 PAGE FOR NEW REPORTING REQUIREMENTS****

You will need to mail in your filing fee with this Fee Payment Form to the address given below. Please include your TXT2 number on the following items: the subject line of your email; the check/money order memo line; and the State Fields screen in the Tier2 Submit software.

For additional information, please contact DSHS staff as indicated below:

E-mail: tiertwohelp@dshs.state.tx.us
Web: www.texastiertwo.com
Phone: (512) 834-6603
Toll Free (TX only): (800) 452-2791

After you have submitted your Tier Two report, please take the short survey on our website at: https://reglicensing.questionpro.com/

If you have questions related to your fees, please use the fee calculators located on the left hand side of our website.

Please make your check payable to: Texas Department of State Health Services – ZZ109-180

TXT2 No.: **68687** Total: $ 100.00 Check No.:_____ No. of facilities: 9
Owner/Operator: **COUNTY OF HIDALGO**
Submitter Name: Martin Ramirez
Contact Phone No.: 956-292-7000 ext 4082 or 956-318-2980

Mailing Address Change: Attn: Martin Ramirez
Environmental Compliance Office
2818 S. Bus. Hwy 281
Edinburg TX 78539

Cash Receipts – MC 2005
DSHS – Tier Two Chemical Reporting Program
PO Box 149347
Austin, TX 78714-9347

**Facility Name:** HIDALGO COUNTY PRECINCT 1

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 1
Dept: MECHANIC SHOP
1902 JOE STEPHENS, SUITE 101
WESLACO, TX 78596 USA
County: HIDALGO
Latitude: 26.177494
Longitude: -97.96873
MAILING ADDRESS: 1212 S. 25th Street, Suite B
Edinburg, TX 78542-7223 USA
Facility Phone: 956-472-3747

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 45

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Moreno, Ricardo
Title: Shop Foreman Contact Type 1: Other Contact Type 2: Precinct Contact- Maintenance Shop
Address: 1902 Joe Stephens Ave., Weslaco, TX, 78596 USA
Phones: Mobile - Cell: 956-472-4156

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

Mata, Esteban
Title: Pct. 1 Safety Officer Contact Type 1: Other Contact Type 2: Precinct Contact- Safety

**Facility Name:** HIDALGO COUNTY PRECINCT 1

Address: MILE 11 NORTH & 1 1/2 WEST, Mercedes , TX, 78570 USA
Phones: Mobile - Cell: 956-532-8784
Email: Esteban.mata@co.hidalgo.tx.us

Sustaita, Arnulfo
Contact Type 1: Emergency Contact Contact Type 2: Other Contact Type 3: Precinct Contact
Address: Mile 11 and Mile 1 1/2 West , Mercedes, TX, 78570 USA
Phones: 24-hour: 956-472-3747 : 956-968-8733
Email: anulfo.sustaita@co.hidalgo.tx.us

CHEMICAL DESCRIPTIONS:
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CHEM NAME: NATURAL GASOLINE
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [ ] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 12450 pounds Max Daily Amt code: 06 (10,000 - 24,999 pounds)
Avg Amt: 12450 pounds Avg Daily Amt code: 06 (10,000 - 24,999 pounds)
Max quantity in largest container: 12450 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: SOUTHWEST SIDE OF MECHANIC SHOP Amount: 2000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas
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FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: $50

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

**Facility Name:** HIDALGO COUNTY PRECINCT 1

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3,**
**and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 02/28/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

**Facility Name:** HIDALGO COUNTY PRECINCT 2

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 2
Dept: MECHANIC SHOP
3001 EAST STATE
PHARR, TX 78577 USA
County: HIDALGO
Latitude: 26.195194
Longitude: -98.180316
MAILING ADDRESS: 1212 S. 25th Street, Suite B
Edinburg, TX 78542-7223 USA
Facility Phone: 956-369-0823

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 45

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Cavazos, Roque
Title: Shop Foreman Contact Type 1: Other Contact Type 2: Shop Foreman
Address: 301 E. State Ave., Pharr, TX, 78577-3977

USA
Phones: 24-hour: 956-533-4601 Work: 956-787-1891

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

**Facility Name:** HIDALGO COUNTY PRECINCT 2

Cuellar, Ricardo
Title: Field Operations Director
Contact Type 1: Emergency Contact
Address: 301 E. State St., Pharr, TX, 78577 USA
Phones: Work: 956-787-1891 24-hour: 956-369-0823
Email: ricardo.cuellar@co.hidalgo.tx.us

CHEMICAL DESCRIPTIONS:

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CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 21912 pounds Max Daily Amt code: 06 (10,000 - 24,999 pounds)
Avg Amt: 21912 pounds Avg Daily Amt code: 06 (10,000 - 24,999 pounds)
Max quantity in largest container: 21912 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EAST OF MAINTENANCE SHOP Amount: 3000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: NATURAL GASOLINE
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 5810 pounds Max Daily Amt code: 05 (5,000 - 9,999 pounds)
Avg Amt: 5810 pounds Avg Daily Amt code: 05 (5,000 - 9,999 pounds)
Max quantity in largest container: 5810 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EAST SIDE OF MAIN OFFICE Amount: 1000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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**Facility Name:** HIDALGO COUNTY PRECINCT 2

FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: $50

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 02/28/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

**Facility Name:** HIDALGO COUNTY PRECINCT 4

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 4
Dept: MECHANIC SHOP
1102 NORTH DOOLITTLE RD
EDINBURG, TX 78539 USA
County: HIDALGO
Latitude: 26.195194
Longitude: -98.180316
MAILING ADDRESS: 1212 S. 25th St., Suite B
EDINBURG, TX 78542-7223 USA
Facility Phone: 956-279-1068

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 15

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Segovia, Joe
Title: Safety Officer Contact Type 1: Emergency Contact Contact Type 2: Other Contact Type 3: Precinct Contact- Safety Officer
Address: 1051 N. Doolittle Rd.
, Edinburg, TX, 78539 USA
Phones: 24-hour: 956-279-1068 Work: 956-383-3112
Email: jose.segovia@co.hidalgo.tx.us

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

Perez, Carlos
Title: Risk Mgr. Contact Type 1: Other Contact Type 2: Fuel Supplier Risk Mgr.
Address: 4506 Highway 359, Laredo, TX, 78042 USA
Phones: Work: 956-722-5251
Email: carlos.perez@argpetro.com

Arguindegui Oil Co. II LTD.,
Title: Owner Contact Type 1: Owner / Operator
Address: 4506 State Highway 359, Laredo, TX, 78042 USA
Phones: Work: 956-722-5251
Email: carlos.perez@argpetro.com

CHEMICAL DESCRIPTIONS:

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CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
CHEMICAL COMPONENTS:
[ ] EHS, CAS: , Component: , % , Max Amt code:
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 146080 pounds Max Daily Amt code: 10 (100,000 - 499,999 pounds)
Avg Amt: 146080 pounds Avg Daily Amt code: 10 (100,000 - 499,999 pounds)
Max quantity in largest container: 43824 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: SOUTHSIDE OF YARD Amount: 6000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: SOUTHSIDE OF YARD Amount: 6000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: CENTER OF YARD Amount: 4000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: CENTER OF YARD Amount: 4000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: NATURAL GASOLINE
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:

**Facility Name:** HIDALGO COUNTY PRECINCT 4

[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 12450 pounds Max Daily Amt code: 06 (10,000 - 24,999 pounds)
Avg Amt: 12450 pounds Avg Daily Amt code: 06 (10,000 - 24,999 pounds)
Max quantity in largest container: 12450 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EAST SIDE OF MECHANIC SHOP Amount: 2000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: PETROLEUM ASPHALT (SS-1 & CRS-2)
CAS: 8052-42-4
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 41915 pounds Max Daily Amt code: 07 (25,000 - 49,999 pounds)
Avg Amt: 41915 pounds Avg Daily Amt code: 07 (25,000 - 49,999 pounds)
Max quantity in largest container: 41915 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Greater than ambient temperature Location: EAST SIDE OF MECHANIC SHOP Amount: 5000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: $50.00

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

NOTES: Arguindegui Oil Co., II LTD owns the 2,000 gallon tank holding gasoline and the two 6,000 gallon tanks holding diesel at the Pct. 4 Mechanic's Shop Site. Hidalgo County is allowed to use these tanks as part of the fuel supply contract with Arguindegui Oil.

**Facility Name:** HIDALGO COUNTY PRECINCT 4

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 4,**
**and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 02/28/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

**Facility Name:** HIDALGO COUNTY SHERIFF'S OFFICE

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY SHERIFF'S OFFICE
Dept: SHERIFF'S OFFICE
711 EAST EL CIBOLO RD.
EDINBURG, TX 78557 USA
County: HIDALGO
Latitude: 26.195194
Longitude: -98.180316
MAILING ADDRESS: 1212 S. 25th St., Suite B
Edinburg, TX 78542-7223 USA
Facility Phone: 956-383-8114

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 120

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

OZUNA, RICHARD
Title: Captain Contact Type 1: Emergency Contact
Address: 711 EAST EL CIBOLO RD. , EDINBURG, TX, 78557 USA
Phones: Mobile - Cell: 956-457-4236 24-hour: 956-383-8114
Email: richard.ozuna@hidalgoso.org

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

**Facility Name:** HIDALGO COUNTY SHERIFF'S OFFICE

CHEMICAL DESCRIPTIONS:

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CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 58432 pounds Max Daily Amt code: 08 (50,000 - 74,999 pounds)
Avg Amt: 58432 pounds Avg Daily Amt code: 08 (50,000 - 74,999 pounds)
Max quantity in largest container: 29216 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EASTSIDE OF JAIL Amount: 2400 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EASTSDIE OF JAIL Amount: 2400 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTHEAST OF ADMINISTRATIVE OFFICE Amount: 1000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: SOUTHSIDE OF ACADEMY Amount: 600 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTHSIDE OF MAINTENANCE SHOP Amount: 150 gallons
Container Type: Below ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: SOUTHSIDE OF MAINTENANCE SHOP Amount: 4000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: NATURAL GASOLINE
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 124500 pounds Max Daily Amt code: 10 (100,000 - 499,999 pounds)
Avg Amt: 124500 pounds Avg Daily Amt code: 10 (100,000 - 499,999 pounds)
Max quantity in largest container: 124500 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Below ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: SOUTH SIDE OF MOTOR POOL Amount: 20000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

**Facility Name:** HIDALGO COUNTY SHERIFF'S OFFICE

---

FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: $50.00

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 02/27/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

**Facility Name:** HIDALGO COUNTY PRECINCT 1

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 1
Dept: SUNRISE HILL- SANITATION
MILE 11 NORTH & 1 1/2 WEST
MERCEDES, TX 78570 USA
County: HIDALGO
Latitude: 26.177494
Longitude: -97.96873
MAILING ADDRESS: 1902 JOE STEPHENS SUITE 101
WESLACO, TX 78596 USA
Facility Phone: 956-472-3747

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 87

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Flores, Juan
Title: Materiels Manager Contact Type 1: Other Contact Type 2: Precinct Contact- Sunrise Hill
Address: 1902 Joe Stephens, Suite 101, Weslaco, TX, 78596 USA
Phones: Mobile - Cell: 956-212-4242

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

Perez, Carlos
Title: Risk Mgr. Contact Type 1: Other Contact Type 2: Fuel Supplier Risk Mgr.

Address: 4506 Highway 359, Laredo, TX, 78042 USA
Phones: Work: 956-722-5251
Email: carlos.perez@argpetro.com

Arguindegui Oil Co. II LTD.,
Title: Owner Contact Type 1: Owner / Operator
Address: 4506 State Highway 359, Laredo, TX, 78042 USA
Phones: Work: 956-722-5251
Email: carlos.perez@argpetro.com

Mata, Esteban
Title: Pct. 1 Safety Officer Contact Type 1: Other Contact Type 2: Precinct Contact- Safety
Address: MILE 11 NORTH & 1 1/2 WEST, Mercedes , TX, 78570 USA
Phones: Mobile - Cell: 956-532-8784
Email: Esteban.mata@co.hidalgo.tx.us

Sustaita, Arnulfo
Contact Type 1: Emergency Contact Contact Type 2: Other Contact Type 3: Precinct Contact
Address: Mile 11 and Mile 1 1/2 West , Mercedes, TX, 78570 USA
Phones: 24-hour: 956-472-3747 : 956-968-8733
Email: anulfo.sustaita@co.hidalgo.tx.us

CHEMICAL DESCRIPTIONS:

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CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 29216 pounds Max Daily Amt code: 07 (25,000 - 49,999 pounds)
Avg Amt: 29216 pounds Avg Daily Amt code: 07 (25,000 - 49,999 pounds)
Max quantity in largest container: 14608 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTHWEST OF MAIN OFFICE Amount: 1000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTHWEST OF MAIN OFFICE Amount: 1000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTHWEST OF MAIN OFFICE Amount: 2000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: PETROLEUM ASPHALT (SS-1 & CRS-2)

**Facility Name:** HIDALGO COUNTY PRECINCT 1

CAS: 8052-42-4
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 83830 pounds Max Daily Amt code: 09 (75,000 - 99,999 pounds)
Avg Amt: 83830 pounds Avg Daily Amt code: 09 (75,000 - 99,999 pounds)
Max quantity in largest container: 41915 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Greater than ambient temperature Location: NORTH SIDE OF MAIN OFFICE Amount: 5000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Greater than ambient temperature Location: NORTH SIDE OF MAIN OFFICE Amount: 5000 pounds
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: $50

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

NOTES: Arguindegui Oil Co., II LTD owns the 2,000 gallon tank holding diesel at the Pct. 1 Sunrise Hill Sanitation Site. Hidalgo County is allowed to use it as part of the fuel supply contract with Arguindegui Oil.

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 02/28/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

**Facility Name:** HIDALGO COUNTY PRECINCT 3

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 3
Dept: ROAD AND BRIDGE
NORTH SIDE OF FM 2221 E. OF IOWA RD.
LA JOYA, TX 78572 USA
County: HIDALGO
Latitude: 26.195194
Longitude: -98.180316
MAILING ADDRESS: 1212 S. 25th St., Suite B
Edinburg, TX 78542-7223 USA
Facility Phone: 956-313-8124

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 60

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Ramirez, Saul
Title: Rd. & Bridge Manager Contact Type 1: Emergency Contact Contact Type 2: Other Contact Type 3: Rd. & Bridge Manager
Address: 724 N. Breyfogle, Mission, TX, 78574 USA
Phones: 24-hour: 956-313-8124 : 956-585-4509
Email: saul.ramirez@co.hidalgo.tx.us

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

**Facility Name:** HIDALGO COUNTY PRECINCT 3

Perez, Carlos
Title: Risk Mgr. Contact Type 1: Other Contact Type 2: Fuel Supplier Risk Mgr.
Address: 4506 Highway 359, Laredo, TX, 78042 USA
Phones: Work: 956-722-5251
Email: carlos.perez@argpetro.com

Arguindegui Oil Co. II LTD.,
Title: Owner Contact Type 1: Owner / Operator
Address: 4506 State Highway 359, Laredo, TX, 78042 USA
Phones: Work: 956-722-5251
Email: carlos.perez@argpetro.com

CHEMICAL DESCRIPTIONS:

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CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 29216 pounds Max Daily Amt code: 07 (25,000 - 49,999 pounds)
Avg Amt: 29216 pounds Avg Daily Amt code: 07 (25,000 - 49,999 pounds)
Max quantity in largest container: 29216 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTH EAST CORNER OF MAIN OFFICE Amount: 4000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: NATURAL GASOLINE
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 12450 pounds Max Daily Amt code: 06 (10,000 - 24,999 pounds)
Avg Amt: 12450 pounds Avg Daily Amt code: 06 (10,000 - 24,999 pounds)
Max quantity in largest container: 12450 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential

**Facility Name:** HIDALGO COUNTY PRECINCT 3

Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NORTH EAST CORNER OF MAIN OFFICE Amount: 2000 gallons

CHEMICALS IN INVENTORY STATE FIELDS:

No additional chemical information is required by Texas

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CHEM NAME: PETROLEUM ASPHALT (SS-1 & CRS-2)
CAS: 8052-42-4

[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS

PHYSICAL & HEALTH HAZARDS:

[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)

INVENTORY:

[ ] Below Reporting Thresholds
Max Amt: 67064 pounds Max Daily Amt code: 08 (50,000 - 74,999 pounds)
Avg Amt: 67064 pounds Avg Daily Amt code: 08 (50,000 - 74,999 pounds)
Max quantity in largest container: 33532 pounds
No. of days on-site: 365

STORAGE CODES & STORAGE LOCATIONS:

[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Greater than ambient temperature Location: NORTHEAST SIDE OF MAIN OFFICE Amount: 4000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Greater than ambient temperature Location: NORTHEAST SIDE OF MAIN OFFICE Amount: 4000 pounds

CHEMICALS IN INVENTORY STATE FIELDS:

No additional chemical information is required by Texas

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FACILITY STATE FIELDS:

Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: $50

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

NOTES: Arguindegui Oil Co., II LTD owns the 2,000 gallon tank holding gasoline and the 4,000 gallon tank holding diesel at the Pct. 3 Road and Bridge Shop Site. Hidalgo County is allowed to use these tanks as part of the fuel supply contract with Arguindegui Oil.

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

Martin Ramirez — **Name and official title of owner/operator OR owner/operator's authorized representative**

**Signature**

02/28/2014 — **Date signed**

**Facility Name:** HIDALGO COUNTY PRECINCT 3

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 3
Dept: PENITAS LANDFILL
0.5 MILE W OF FM 1427 ON MILITARY HIGHWAY
PENITAS, TX 78576 USA
County: Hidalgo
Latitude: 26.195194
Longitude: -98.180316
MAILING ADDRESS: 724 NORTH BREYFOGLE
MISSION, TX 78574 USA
Facility Phone: 956-313-8124

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 25

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Ocanas, George
Title: Landfill Mgr Contact Type 1: Other Contact Type 2: Precinct Contact- Landfill
Address: 724 N. Breyfogle, Mission, TX, 78577 USA
Phones: Mobile - Cell: 956-639-9245

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

Ramirez, Saul
Title: Rd. & Bridge Manager Contact Type 1: Emergency Contact Contact Type 2: Other Contact Type 3: Rd. & Bridge

**Facility Name:** HIDALGO COUNTY PRECINCT 3

Manager
Address: 724 N. Breyfogle, Mission, TX, 78574 USA
Phones: 24-hour: 956-313-8124 : 956-585-4509
Email: saul.ramirez@co.hidalgo.tx.us

CHEMICAL DESCRIPTIONS:

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CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 14608 pounds Max Daily Amt code: 06 (10,000 - 24,999 pounds)
Avg Amt: 14608 pounds Avg Daily Amt code: 06 (10,000 - 24,999 pounds)
Max quantity in largest container: 7304 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NEXT TO ENTRANCE SOUTH OF OFFICE Amount: 1000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: NEXT TO ENTRANCE SOUTH OF OFFICE Amount: 1000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: None.

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

Martin Ramirez — **Name and official title of owner/operator OR owner/operator's authorized representative**

**Signature**

02/28/2014 — **Date signed**

**Facility Name:** HIDALGO COUNTY PRECINCT 3

**********
**********

FACILITY IDENTIFICATION:
HIDALGO COUNTY PRECINCT 3
Dept: DRAINAGE DEPARTMENT
2800 W. FM 2221
MISSION, TX 78574 USA
County: Hidalgo
Latitude: 26.195194
Longitude: -98.180316
MAILING ADDRESS: 1212 S. 25th St., Suite B
Edinburg, TX 78542-7223 USA

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (Executive Offices)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 11

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Henry, David
Title: Drainage Mgr. Contact Type 1: Other Contact Type 2: Precinct Contact- Drainage
Address: 724 N. Breyfogle, Mission, TX, 78574 USA
Phones: Mobile - Cell: 956-279-6903

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

Ramirez, Saul
Title: Rd. & Bridge Manager Contact Type 1: Emergency Contact Contact Type 2: Other Contact Type 3: Rd. & Bridge Manager

**Facility Name:** HIDALGO COUNTY PRECINCT 3

Address: 724 N. Breyfogle, Mission, TX, 78574 USA
Phones: 24-hour: 956-313-8124 : 956-585-4509
Email: saul.ramirez@co.hidalgo.tx.us

CHEMICAL DESCRIPTIONS:

---

CHEM NAME: DIESEL FUEL
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 14608 pounds Max Daily Amt code: 06 (10,000 - 24,999 pounds)
Avg Amt: 14608 pounds Avg Daily Amt code: 06 (10,000 - 24,999 pounds)
Max quantity in largest container: 7304 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EASTSIDE OF YARD Amount: 1000 gallons
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EASTSIDE OF YARD Amount: 1000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: GASOLINE
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[x] Pure [ ] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 6225 pounds Max Daily Amt code: 05 (5,000 - 9,999 pounds)
Avg Amt: 6225 pounds Avg Daily Amt code: 05 (5,000 - 9,999 pounds)
Max quantity in largest container: 6225 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: EASTSIDE OF YARD Amount: 1000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

---

**Facility Name:** HIDALGO COUNTY PRECINCT 3

FACILITY STATE FIELDS:
Texas requests the following:
[ ] Initial
[ ] Updated
[x] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: None.

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3,**

**and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 02/28/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

**Facility Name:** Hidalgo County Sheriff's Department Substation

**********
**********

FACILITY IDENTIFICATION:
Hidalgo County Sheriff's Department Substation
Dept: Hidalgo County Sheriff's Department
3003 E. Mile 11 North Road
Weslaco, TX 78596 USA
County: Hidalgo
Latitude: 26.214141
Longitude: 97.962529
Facility Phone: 956-973-7880

[ ] All facility information (not including chemical information) is identical to last year's submission

IDENTIFICATION NUMBERS:
Dun & Bradstreet: N/A
NAICS: 92111 (All Other General Government)
SIC: 9131 (EXEC & LEGIS OFFICES COMBINED)

Is the facility manned? [x] Manned [ ] Unmanned
Maximum No. of Occupants: 25

REGULATORY INFORMATION:
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? [ ] Yes [x] No
Subject to Chem. Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Mgmt. Pgm.)? [ ] Yes [x] No

CONTACT INFORMATION:

OZUNA, RICHARD
Title: Captain Contact Type 1: Emergency Contact
Address: 711 EAST EL CIBOLO RD. , EDINBURG, TX, 78557 USA
Phones: Mobile - Cell: 956-457-4236 24-hour: 956-383-8114
Email: richard.ozuna@hidalgoso.org

Lopez, Genaro
Title: Captain Contact Type 1: Emergency Contact Contact Type 2: Commanding Officer
Address: 3003 E. Mile 11 North Road, Weslaco, TX, 78596 USA
Phones: Work: 956-292-7000 ext 7536 Mobile - Cell: 956-289-0448 24-hour: 956-973-7880
Email: genaro.lopez@hidalgoso.org

Ramirez, Martin
Title: Environmental Coordinator Contact Type 1: Regulatory Point of Contact Contact Type 3: Tier II Information Contact Contact Type 4: Submitter
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA
Phones: Work: 956-292-7000 ext 4082
Email: martin.ramirez@hchd.org

Hidalgo County,
Title: Owner/Operator Contact Type 1: Owner / Operator
Address: 1212 S. 25th St., Suite B, Edinburg, TX, 78542-7223 USA

**Facility Name:** Hidalgo County Sheriff's Department Substation

Phones: Work: 956-292-7000 ext 4082
Email: stormwater@hchd.org

CHEMICAL DESCRIPTIONS:

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CHEM NAME: Diesel Fuel
CAS: 68476-34-6
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [ ] Immediate (acute) [x] Delayed (chronic)
INVENTORY:
[x] Below Reporting Thresholds
Max Amt: 7304 pounds Max Daily Amt code: 05 (5,000 - 9,999 pounds)
Avg Amt: 7304 pounds Avg Daily Amt code: 05 (5,000 - 9,999 pounds)
Max quantity in largest container: 7304 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: Northwest corner of property. Amount: 1000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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CHEM NAME: Unleaded Gasoline
CAS: 86290-81-5
[ ] Identical to previous year
[ ] TRADE SECRET
[ ] Pure [x] Mix [ ] Solid [x] Liquid [ ] Gas [ ] EHS
PHYSICAL & HEALTH HAZARDS:
[x] Fire [ ] Sudden Release of Pressure [ ] Reactivity [x] Immediate (acute) [ ] Delayed (chronic)
INVENTORY:
[ ] Below Reporting Thresholds
Max Amt: 62250 pounds Max Daily Amt code: 08 (50,000 - 74,999 pounds)
Avg Amt: 62250 pounds Avg Daily Amt code: 08 (50,000 - 74,999 pounds)
Max quantity in largest container: 62250 pounds
No. of days on-site: 365
STORAGE CODES & STORAGE LOCATIONS:
[ ] Confidential
Container Type: Above ground tank Pressure: Ambient pressure Temp: Ambient temperature Location: Northwest corner of property. Amount: 10000 gallons
CHEMICALS IN INVENTORY STATE FIELDS:
No additional chemical information is required by Texas

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FACILITY STATE FIELDS:
Texas requests the following:
[x] Initial

**Facility Name:** Hidalgo County Sheriff's Department Substation

[ ] Updated
[ ] Annual
TXT2 Number:: 68687

STATE / LOCAL FEES: None.

[ ] I have attached a site plan
[ ] I have attached a list of site coordinate abbreviations
[ ] I have attached a description of dikes and other safeguard measures

NOTES: This is a sheriff's department facility that is manned 24 hours a day.

**Certification (Read and sign after completing all sections)**

**I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 3,**

**and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.**

| Martin Ramirez | | 2/28/2014 |
|---|---|---|
| **Name and official title of owner/operator OR owner/operator's authorized representative** | **Signature** | **Date signed** |

# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

| | |
|---|---|
| **Material name** | **UNLEADED GASOLINE** |
| **Version #** | 01 |
| **Revision date** | 10-23-2010 |
| **MSDS Number** | 002 |
| **Product use** | Motor fuels. |
| **Synonym(s)** | Regular/Premium/Midgrade - Unleaded Gasoline, RFG - Reformulated Unleaded Gasoline, Conventional Unleaded Gasoline, Oxygenated Unleaded Gasoline, Non-Oxygenated Unleaded Gasoline, CARB (California Air Resource Board) Unleaded Gasoline, RBOB - Reformulated Blendstock for Oxygenate Blending, CBOB - Conventional Blendstock for Oxygenate Blending, Petrol, Motor Fuel.<br>See section 16 for complete information. |
| **Manufacturer information** | Valero Marketing & Supply Company and Affiliates<br>P.O. Box 696000<br>San Antonio, TX 78269-6000<br>General Assistance 210-345-4593<br>24 Hour Emergency 866-565-5220<br>1-800-424-9300 (CHEMTREC USA) |

## 2. Hazards Identification

| | |
|---|---|
| **Physical state** | Liquid. |
| **Appearance** | Light straw to red clear liquid with characteristic strong odor of gasoline. |
| **Emergency overview** | DANGER!<br>Extremely flammable liquid and vapor - vapor may cause flash fire. Will be easily ignited by heat, spark or flames. Heat may cause the containers to explode.<br><br>Harmful if inhaled, absorbed through skin, or swallowed. Aspiration may cause lung damage. Irritating to eyes, respiratory system and skin. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea. Contains benzene. Cancer hazard - can cause cancer. Mutagen. May cause heritable genetic damage. May cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| **OSHA regulatory status** | This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). |
| **Potential health effects** | |
| **Routes of exposure** | Inhalation. Ingestion. Skin contact. Eye contact. |
| **Eyes** | Contact may irritate or burn eyes. Eye contact may result in corneal injury. |
| **Skin** | Harmful if absorbed through skin. Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. |
| **Inhalation** | Harmful if inhaled. Irritating to respiratory system. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea. May cause breathing disorders and lung damage. May cause cancer by inhalation. Prolonged inhalation may be harmful. |
| **Ingestion** | Harmful if swallowed. Ingestion may result in vomiting; aspiration (breathing) of vomitus into lungs must be avoided as even small quantities may result in aspiration pneumonitis. Irritating to mouth, throat, and stomach. |
| **Target organs** | Blood. Eyes. Liver. Respiratory system. Skin. Kidneys. Central nervous system. |
| **Chronic effects** | Cancer hazard. Contains material which may have reproductive toxicity, teratogenetic or mutagenic effects. Liver injury may occur. Kidney injury may occur. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. |
| **Signs and symptoms** | Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. |
| **Potential environmental effects** | Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. |

## 3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|---|---|---|
| Gasoline | 86290-81-5 | 0-100 |
| Toluene | 108-88-3 | 0-30 |
| Hexane (Other Isomers) | 96-14-0 | 5-25 |
| Xylene (o, m, p isomers) | 1330-20-7 | 0-25 |
| Octane (All isomers) | 111-65-9 | 0-18.5 |
| Ethanol | 64-17-5 | 0-10 |
| 1,2,4, Trimethylbenzene | 95-63-6 | 0-6 |
| n-Heptane | 142-82-5 | 1-5 |
| Pentane | 109-66-0 | 1-5 |
| Cumene | 98-82-8 | 0-5 |
| Ethylbenzene | 100-41-4 | 0-5 |
| Benzene | 71-43-2 | 0-4.9 |
| n-Hexane | 110-54-3 | 0-3 |
| Cyclohexane | 110-82-7 | 0-3 |

## 4. First Aid Measures

**First aid procedures**

**Eye contact** — Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

**Skin contact** — Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.

**Inhalation** — Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Ingestion** — Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Get medical attention immediately.

**Notes to physician** — In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General advice** — If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.

## 5. Fire Fighting Measures

**Flammable properties** — Flammable by OSHA criteria. Containers may explode when heated.

**Extinguishing media**

**Suitable extinguishing media** — Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** — Do not use a solid water stream as it may scatter and spread fire.

**Protection of firefighters**

**Specific hazards arising from the chemical** — Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

**Protective equipment and precautions for firefighters** — Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

| | |
|---|---|
| **Fire fighting equipment/instructions** | Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gases to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed. |
| **Specific methods** | In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers. |
| **Hazardous combustion products** | Carbon monoxide. Carbon Dioxide. Sulfur oxides. Nitrogen oxides (NOx). Hydrocarbons. |

## 6. Accidental Release Measures

| | |
|---|---|
| **Personal precautions** | Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the MSDS for Personal Protective Equipment. |
| **Environmental precautions** | Gasoline may contain oxygenated blend products (Ethanol, etc.) that are soluble in water and therefore precautions should be taken to protect surface and groundwater sources from contamination. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Extremely flammable. Review Fire Fighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300. |
| **Methods for containment** | Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. |
| **Methods for cleaning up** | Use non-sparking tools and explosion-proof equipment.<br><br>Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste.<br><br>Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment. |
| **Other information** | Clean up in accordance with all applicable regulations. |

## 7. Handling and Storage

| | |
|---|---|
| **Handling** | Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment. |

**Storage**

Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

## 8. Exposure Controls / Personal Protection

### Occupational exposure limits

**US. ACGIH Threshold Limit Values**

| Components | Type | Value |
|---|---|---|
| 1,2,4, Trimethylbenzene (95-63-6) | TWA | 25 ppm |
| Benzene (71-43-2) | STEL | 2.5 ppm |
| | TWA | 0.5 ppm |
| Cumene (98-82-8) | TWA | 50 ppm |
| Cyclohexane (110-82-7) | TWA | 100 ppm |
| Ethanol (64-17-5) | STEL | 1000 ppm |
| Ethylbenzene (100-41-4) | STEL | 125 ppm |
| | TWA | 100 ppm |
| Gasoline (86290-81-5) | STEL | 500 ppm |
| | TWA | 300 ppm |
| Hexane (Other Isomers) (96-14-0) | STEL | 1000 ppm |
| | TWA | 500 ppm |
| n-Heptane (142-82-5) | STEL | 500 ppm |
| | TWA | 400 ppm |
| n-Hexane (110-54-3) | TWA | 50 ppm |
| Octane (All isomers) (111-65-9) | TWA | 300 ppm |
| Pentane (109-66-0) | TWA | 600 ppm |
| Toluene (108-88-3) | TWA | 20 ppm |
| Xylene (o, m, p isomers) (1330-20-7) | STEL | 150 ppm |
| | TWA | 100 ppm |

**US. OSHA Table Z-2 (29 CFR 1910.1000)**

| Components | Type | Value |
|---|---|---|
| Benzene (71-43-2) | Ceiling | 25 ppm |
| | STEL | 5 ppm |
| | TWA | 1 ppm |
| Cumene (98-82-8) | PEL | 50 ppm<br>245 mg/m3 |
| Cyclohexane (110-82-7) | PEL | 300 ppm<br>1050 mg/m3 |
| Ethanol (64-17-5) | PEL | 1900 mg/m3<br>1000 ppm |
| Ethylbenzene (100-41-4) | PEL | 435 mg/m3<br>100 ppm |
| n-Heptane (142-82-5) | PEL | 500 ppm<br>2000 mg/m3 |
| n-Hexane (110-54-3) | PEL | 500 ppm<br>1800 mg/m3 |
| Octane (All isomers) (111-65-9) | PEL | 500 ppm<br>2350 mg/m3 |
| Pentane (109-66-0) | PEL | 1000 ppm<br>2950 mg/m3 |
| Toluene (108-88-3) | Ceiling | 300 ppm |
| | TWA | 200 ppm |
| Xylene (o, m, p isomers) (1330-20-7) | PEL | 435 mg/m3<br>100 ppm |

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

| Components | Type | Value |
|---|---|---|
| 1,2,4, Trimethylbenzene (95-63-6) | TWA | 25 ppm |
| | | 123 mg/m3 |
| Benzene (71-43-2) | STEL | 2.5 ppm |
| | | 8 mg/m3 |
| | TWA | 1.6 mg/m3 |
| | | 0.5 ppm |
| Cumene (98-82-8) | TWA | 50 ppm |
| | | 246 mg/m3 |
| Cyclohexane (110-82-7) | TWA | 344 mg/m3 |
| | | 100 ppm |
| Ethanol (64-17-5) | TWA | 1880 mg/m3 |
| | | 1000 ppm |
| Ethylbenzene (100-41-4) | STEL | 125 ppm |
| | | 543 mg/m3 |
| | TWA | 100 ppm |
| | | 434 mg/m3 |
| Gasoline (86290-81-5) | STEL | 500 ppm |
| | TWA | 300 ppm |
| Hexane (Other Isomers) (96-14-0) | STEL | 1000 ppm |
| | | 3500 mg/m3 |
| | TWA | 1760 mg/m3 |
| | | 500 ppm |
| n-Heptane (142-82-5) | STEL | 2050 mg/m3 |
| | | 500 ppm |
| | TWA | 400 ppm |
| | | 1640 mg/m3 |
| n-Hexane (110-54-3) | TWA | 176 mg/m3 |
| | | 50 ppm |
| Octane (All isomers) (111-65-9) | TWA | 300 ppm |
| | | 1400 mg/m3 |
| Pentane (109-66-0) | TWA | 600 ppm |
| | | 1770 mg/m3 |
| Toluene (108-88-3) | TWA | 188 mg/m3 |
| | | 50 ppm |

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

| Components | Type | Value |
|---|---|---|
| 1,2,4, Trimethylbenzene (95-63-6) | TWA | 25 ppm |
| Benzene (71-43-2) | STEL | 2.5 ppm |
| | TWA | 0.5 ppm |
| Cumene (98-82-8) | STEL | 75 ppm |
| | TWA | 25 ppm |
| Cyclohexane (110-82-7) | TWA | 100 ppm |
| Ethanol (64-17-5) | STEL | 1000 ppm |
| Ethylbenzene (100-41-4) | STEL | 125 ppm |
| | TWA | 100 ppm |
| Gasoline (86290-81-5) | STEL | 500 ppm |
| | TWA | 300 ppm |
| Hexane (Other Isomers) (96-14-0) | TWA | 200 ppm |
| n-Heptane (142-82-5) | STEL | 500 ppm |
| | TWA | 400 ppm |
| n-Hexane (110-54-3) | TWA | 20 ppm |
| Octane (All isomers) (111-65-9) | TWA | 300 ppm |
| Pentane (109-66-0) | TWA | 600 ppm |
| Toluene (108-88-3) | TWA | 20 ppm |

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

| Components | Type | Value |
|---|---|---|
| Xylene (o, m, p isomers) (1330-20-7) | STEL | 150 ppm |
| | TWA | 100 ppm |

**Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)**

| Components | Type | Value |
|---|---|---|
| 1,2,4, Trimethylbenzene (95-63-6) | TWA | 123 mg/m3 |
| | | 25 ppm |
| Benzene (71-43-2) | STEL | 2.5 ppm |
| | TWA | 0.5 ppm |
| Cumene (98-82-8) | TWA | 245 mg/m3 |
| | | 50 ppm |
| Cyclohexane (110-82-7) | TWA | 100 ppm |
| Ethanol (64-17-5) | TWA | 1900 mg/m3 |
| | | 1000 ppm |
| Ethylbenzene (100-41-4) | STEL | 540 mg/m3 |
| | | 125 ppm |
| | TWA | 100 ppm |
| | | 435 mg/m3 |
| Gasoline (86290-81-5) | STEL | 500 ppm |
| | TWA | 300 ppm |
| Hexane (Other Isomers) (96-14-0) | STEL | 1000 ppm |
| | | 3520 mg/m3 |
| | TWA | 500 ppm |
| | | 1760 mg/m3 |
| n-Heptane (142-82-5) | STEL | 500 ppm |
| | | 2045 mg/m3 |
| | TWA | 400 ppm |
| | | 1635 mg/m3 |
| n-Hexane (110-54-3) | TWA | 50 ppm |
| | | 176 mg/m3 |
| Octane (All isomers) (111-65-9) | STEL | 375 ppm |
| | | 1750 mg/m3 |
| | TWA | 300 ppm |
| | | 1400 mg/m3 |
| Pentane (109-66-0) | STEL | 750 ppm |
| | | 2210 mg/m3 |
| | TWA | 600 ppm |
| | | 1770 mg/m3 |
| Toluene (108-88-3) | TWA | 20 ppm |
| Xylene (o, m, p isomers) (1330-20-7) | STEL | 150 ppm |
| | | 650 mg/m3 |
| | TWA | 100 ppm |
| | | 435 mg/m3 |

**Canada. Quebec OELS. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

| Components | Type | Value |
|---|---|---|
| 1,2,4, Trimethylbenzene (95-63-6) | TWA | 25 ppm |
| | | 123 mg/m3 |
| Benzene (71-43-2) | STEL | 15.5 mg/m3 |
| | | 5 ppm |
| | TWA | 3 mg/m3 |
| | | 1 ppm |
| Cumene (98-82-8) | TWA | 246 mg/m3 |
| | | 50 ppm |
| Cyclohexane (110-82-7) | TWA | 300 ppm |
| | | 1030 mg/m3 |

**Canada. Quebec OELS. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

| Components | Type | Value |
|---|---|---|
| Ethanol (64-17-5) | TWA | 1880 mg/m3<br>1000 ppm |
| Ethylbenzene (100-41-4) | STEL | 543 mg/m3<br>125 ppm |
| | TWA | 100 ppm<br>434 mg/m3 |
| Hexane (Other Isomers) (96-14-0) | STEL | 3500 mg/m3<br>1000 ppm |
| | TWA | 500 ppm<br>1760 mg/m3 |
| n-Heptane (142-82-5) | STEL | 500 ppm<br>2050 mg/m3 |
| | TWA | 400 ppm<br>1640 mg/m3 |
| n-Hexane (110-54-3) | TWA | 50 ppm<br>176 mg/m3 |
| Octane (All isomers) (111-65-9) | STEL | 375 ppm<br>1750 mg/m3 |
| | TWA | 300 ppm<br>1400 mg/m3 |
| Pentane (109-66-0) | TWA | 120 ppm<br>350 mg/m3 |
| Toluene (108-88-3) | TWA | 188 mg/m3<br>50 ppm |
| Xylene (o, m, p isomers) (1330-20-7) | STEL | 651 mg/m3<br>150 ppm |
| | TWA | 100 ppm<br>434 mg/m3 |

**Mexico. Occupational Exposure Limit Values**

| Components | Type | Value |
|---|---|---|
| 1,2,4, Trimethylbenzene (95-63-6) | STEL | 35 ppm<br>170 mg/m3 |
| | TWA | 25 ppm<br>125 mg/m3 |
| Benzene (71-43-2) | STEL | 5 ppm<br>16 mg/m3 |
| | TWA | 3.2 mg/m3<br>1 ppm |
| Cumene (98-82-8) | STEL | 365 mg/m3<br>75 ppm |
| | TWA | 50 ppm<br>245 mg/m3 |
| Cyclohexane (110-82-7) | STEL | 375 ppm<br>1300 mg/m3 |
| | TWA | 300 ppm<br>1050 mg/m3 |
| Ethanol (64-17-5) | TWA | 1900 mg/m3<br>1000 ppm |
| Ethylbenzene (100-41-4) | STEL | 125 ppm<br>545 mg/m3 |
| | TWA | 100 ppm<br>435 mg/m3 |
| Hexane (Other Isomers) (96-14-0) | STEL | 3500 mg/m3<br>1000 ppm |
| | TWA | 500 ppm<br>1760 mg/m3 |
| n-Heptane (142-82-5) | STEL | 500 ppm |

**Mexico. Occupational Exposure Limit Values**

| Components | Type | Value |
|---|---|---|
| | TWA | 2000 mg/m3<br>400 ppm |
| n-Hexane (110-54-3) | TWA | 1600 mg/m3<br>50 ppm |
| Octane (All isomers) (111-65-9) | STEL | 176 mg/m3<br>375 ppm |
| | TWA | 1800 mg/m3<br>300 ppm |
| Pentane (109-66-0) | STEL | 1450 mg/m3<br>760 ppm |
| | TWA | 2250 mg/m3<br>600 ppm |
| Toluene (108-88-3) | TWA | 1800 mg/m3<br>188 mg/m3 |
| Xylene (o, m, p isomers) (1330-20-7) | STEL | 50 ppm<br>655 mg/m3 |
| | TWA | 150 ppm<br>100 ppm<br>435 mg/m3 |

**Engineering controls** Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

**Personal protective equipment**

**Eye / face protection** Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

**Skin protection** Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

**Respiratory protection** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

**General hygiene considerations** Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical & Chemical Properties

**Appearance** Light straw to red clear liquid with characteristic strong odor of gasoline.

**Color** Light straw to red clear.

**Odor** Characteristic Gasoline Odor (Strong).

**Odor threshold** Not available.

**Physical state** Liquid.

**Form** Liquid.

**pH** Not available.

**Melting point** Not available.

**Freezing point** 44 °F (6.67 °C) May start to solidify at this temperature. This is based on data for the following ingredient: Cyclohexane. Weighted average: -91.9 deg C (-133.4 deg F)

**Boiling point** 80.1 - 440.1 °F (26.7 - 226.7 °C)

**Flash point** -40 °F (-40 °C) (closed cup)

**Evaporation rate** 10 - 11 BuAc

**Flammability limits in air, upper, % by volume** 7.1 %

| | |
|---|---|
| **Flammability limits in air, lower, % by volume** | 1.3 % |
| **Vapor pressure** | 60.8 - 101.3 kPa (20°C) |
| **Vapor density** | 3 - 4 (Air=1) |
| **Specific gravity** | 0.66 - 0.75 (Water=1) (60°F) |
| **Solubility (water)** | Very slightly soluble. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Auto-ignition temperature** | > 500 °F (> 260 °C) |
| **Decomposition temperature** | Not available. |
| **VOC** | 100 % |

## 10. Chemical Stability & Reactivity Information

| | |
|---|---|
| **Chemical stability** | Stable under normal temperature conditions and recommended use. |
| **Conditions to avoid** | Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous decomposition products** | Carbon oxides. Sulfur oxides. Nitrogen oxides (NOx). Hydrocarbons. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |

## 11. Toxicological Information

**Toxicological data**

| Components | Test Results |
|---|---|
| Ethylbenzene (100-41-4) | Acute Dermal LD50 Rabbit: > 5000 mg/kg |
| Toluene (108-88-3) | Acute Oral LD50 Rat: 3500 mg/kg<br>Acute Oral LD50 Rat: 5.46 g/kg<br>Acute Dermal LD50 Rabbit: 14.1 ml/kg |
| Pentane (109-66-0) | Acute Inhalation LC50 Rat: 8000 mg/l 4 Hours<br>Acute Oral LD50 Rat: 2.6 g/kg<br>Acute Inhalation LC50 Rat: 364 mg/l 4 Hours |
| Cyclohexane (110-82-7) | Acute Oral LD50 Rat: 12705 mg/kg |
| Octane (All isomers) (111-65-9) | Acute Inhalation LC50 Rat: 118 mg/l 4 Hours |
| Xylene (o, m, p isomers) (1330-20-7) | Acute Oral LD50 Mouse: 1590 mg/kg |
| n-Heptane (142-82-5) | Acute Oral LD50 Rat: 6670 mg/kg<br>Acute Inhalation LC50 Rat: 103 mg/l 4 Hours |
| Ethanol (64-17-5) | Acute Inhalation LC50 Rat: 20000 ppm 10 hr |
| Benzene (71-43-2) | Acute Oral LD50 Rat: 6.2 g/kg<br>Acute Oral LD50 Rat: 3306 mg/kg |
| 1,2,4, Trimethylbenzene (95-63-6) | Acute Dermal LD50 Rabbit: > 3160 mg/kg |
| Cumene (98-82-8) | Acute Inhalation LC50 Rat: > 2000 mg/l 48 Hours<br>Acute Oral LD50 Rat: 6 g/kg<br>Acute Inhalation LC50 Mouse: 2000 mg/l 7 Hours |
| | Acute Inhalation LC50 Rat: 8000 mg/l 4 Hours<br>Acute Oral LD50 Rat: 1400 mg/kg<br>Acute Oral LD50 Rat: 2.91 g/kg |

**Acute effects** Harmful if inhaled, absorbed through skin, or swallowed. Harmful: may cause lung damage if swallowed. Irritating to eyes, respiratory system and skin. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

**Local effects**

**US ACGIH Threshold Limit Values: Skin designation**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Can be absorbed through the skin. |
| n-Hexane (CAS 110-54-3) | Can be absorbed through the skin. |

**Sensitization**

This substance may have a potential for sensitization which may provoke an allergic reaction among sensitive individuals.

**Chronic effects**

Repeated exposure of laboratory animals to high concentrations of gasoline vapors has caused kidney damage and cancer in rats and cancer in mice. Gasoline was evaluated for genetic activity in assays using microbial cells, cultured mammalian cells and rat bone marrow cells. The results were all negative so gasoline was considered nonmutagenic under these conditions. Overexposure to this product or its components has been suggested as a cause of liver abnormalities in laboratory animals and humans. Lifetime studies by the American Petroleum Institute have shown that kidney damage and kidney cancer can occur in male rats after prolonged inhalation exposures at elevated concentrations of total gasoline. Kidneys of mice and female rats were unaffected. The U.S. EPA Risk Assessment Forum has concluded that the male rat kidney tumor results are not relevant for humans. Total gasoline exposure also produced liver tumors in female mice only. The implication of these data for humans has not been determined.

**Subchronic effects**

Subchronic inhalation of benzene by rats produced decreased white blood cell counts, decreased bone marrow cell activity, increased red blood cell activity and cataracts. Blood disorders may occur after prolonged inhalation, prolonged skin contact and/or ingestion. Liver and kidney damage may occur after prolonged and repeated exposure.

**Carcinogenicity**

**ACGIH Carcinogens**

| | |
|---|---|
| Benzene (CAS 71-43-2) | A1 Confirmed human carcinogen. |
| Ethanol (CAS 64-17-5) | A3 Confirmed animal carcinogen with unknown relevance to humans. |
| Ethylbenzene (CAS 100-41-4) | A3 Confirmed animal carcinogen with unknown relevance to humans. |
| Gasoline (CAS 86290-81-5) | A3 Confirmed animal carcinogen with unknown relevance to humans. |
| Toluene (CAS 108-88-3) | A4 Not classifiable as a human carcinogen. |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | A4 Not classifiable as a human carcinogen. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| Benzene (CAS 71-43-2) | 1 Carcinogenic to humans. |
| Ethylbenzene (CAS 100-41-4) | 2B Possibly carcinogenic to humans. |
| Gasoline (CAS 86290-81-5) | 2B Possibly carcinogenic to humans. |
| Toluene (CAS 108-88-3) | 3 Not classifiable as to carcinogenicity to humans. |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | 3 Not classifiable as to carcinogenicity to humans. |

**US NTP Report on Carcinogens: Known carcinogen**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Known carcinogen. |

**US OSHA Specifically Regulated Substances: Cancer hazard**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Cancer hazard. |

**Epidemiology**

Contains benzene. Human epidemiology studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-producing system and serious blood disorders, including leukemia. Animal tests suggest that prolonged and/or repeated overexposure to benzene may damage the embryo/fetus. The relevance of these animal studies to humans has not been fully established. Studies have shown a risk of spontaneous abortions in women exposed to high concentrations of organic solvents during pregnancy.

**Mutagenicity**

In in-vitro experiments, neither benzene, toluene nor xylene changed the number of sister-chromatid exchanges (SCEs) or the number of chromosomal aberrations in human lymphocytes. However, toluene and xylene caused a significant cell growth inhibition which was not observed with benzene in the same concentrations. In in-vivo experiments, toluene changed the number of sister-chromatid exchanges (SCEs) in human lymphocytes. Toluene may cause heritable genetic damage.

**Neurological effects**

Chronic exposure to high concentrations of various hydrocarbon blends may lead to polyneuropathy (peripheral nerve damage), characterized by progressive weakness and numbness in the extremities, loss of deep tendon reflexes and reduction of motor nerve conduction velocity. Numerous cases of polyneuritis have been reported following prolonged exposures to a petroleum fraction containing various isomers of heptane as major ingredients. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue) and/or damage.

| | |
|---|---|
| **Reproductive effects** | Benzene, xylene and toluene have demonstrated animal effects of reproductive toxicity. Animal studies of benzene have shown testicular effects, alterations in reproductive cycles, chromosomal aberrations and embryo/fetotoxicity. Ethanol has demonstrated human effects of reproductive toxicity. May damage fertility or the unborn child. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Avoid exposure to women during early pregnancy. Avoid contact during pregnancy/while nursing. |
| **Teratogenicity** | Abusive inhalation of toluene ("glue sniffing") has been reported to be associated with birth defects in the offspring of abusers. Rats exposed to benzene and xylene vapor during pregnancy showed embryo/fetotoxic effects. Ethanol has demonstrated human effects of teratogenicity. |
| **Further information** | Symptoms may be delayed. |

## 12. Ecological Information

**Ecotoxicological data**

| Components | Test Results |
|---|---|
| Ethylbenzene (100-41-4) | LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 4.2 mg/l 96 hours |
| Toluene (108-88-3) | LC50 Coho salmon,silver salmon (Oncorhynchus kisutch): 5.5 mg/l 96 hours |
| n-Hexane (110-54-3) | LC50 Fathead minnow (Pimephales promelas): 2.101 - 2.981 mg/l 96 hours |
| Cyclohexane (110-82-7) | LC50 Fathead minnow (Pimephales promelas): 3.961 - 5.181 mg/l 96 hours |
| n-Heptane (142-82-5) | LC50 Mozambique tilapia (Tilapia mossambica): 375 mg/l 96 hours |
| Ethanol (64-17-5) | EC50 Water flea (Daphnia magna): 7.7 - 11.2 mg/l 48 hours |
| | LC50 Fathead minnow (Pimephales promelas): > 100 mg/l 96 hours |
| Benzene (71-43-2) | LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 5.3 mg/l 96 hours |
| 1,2,4, Trimethylbenzene (95-63-6) | LC50 Fathead minnow (Pimephales promelas): 7.19 - 8.28 mg/l 96 hours |
| Cumene (98-82-8) | LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 2.7 mg/l 96 hours |

| | |
|---|---|
| **Ecotoxicity** | Contains a substance which causes risk of hazardous effects to the environment. |
| **Environmental effects** | The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment. |
| **Aquatic toxicity** | Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. |
| **Persistence and degradability** | Not available. |
| **Bioaccumulation / Accumulation** | No data available. |
| **Partition coefficient (n-octanol/water)** | Not available. |
| **Mobility in environmental media** | No data available. |

## 13. Disposal Considerations

| | |
|---|---|
| **Waste codes** | D001: Waste Flammable material with a flash point <140 °F<br>D018: Waste Benzene |
| **Disposal instructions** | Dispose in accordance with all applicable regulations. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. |

## 14. Transport Information

**DOT**

**Basic shipping requirements:**

| | |
|---|---|
| **UN number** | UN1203 |
| **Proper shipping name** | Gasoline |

| | |
|---|---|
| **Hazard class** | 3 |
| **Packing group** | II |
| **Labels required** | 3 |
| **Additional information:** | |
| **Special provisions** | 139, B33, B101, T8 |
| **Packaging exceptions** | 150 |
| **Packaging non bulk** | 202 |
| **Packaging bulk** | 242 |
| **ERG number** | 128 |

**IATA**

| | |
|---|---|
| **Basic shipping requirements:** | |
| **UN number** | 1203 |
| **Proper shipping name** | Gasoline |
| **Hazard class** | 3 |
| **Packing group** | II |
| **Additional information:** | |
| **ERG code** | 3H |

**IMDG**

| | |
|---|---|
| **Basic shipping requirements:** | |
| **UN number** | 1203 |
| **Proper shipping name** | Gasoline |
| **Hazard class** | 3 |
| **Packing group** | II |
| **EmS No.** | F-E, S-E |

**TDG**

| | |
|---|---|
| **Basic shipping requirements:** | |
| **Proper shipping name** | GASOLINE; MOTOR SPIRIT; or PETROL |
| **Hazard class** | 3 |
| **UN number** | UN1203 |
| **Packing group** | II |
| **Marine pollutant** | Yes |
| **Additional information:** | |
| **Special provisions** | 17 |

**DOT**

**IATA**

**IMDG**

**TDG**

## 15. Regulatory Information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

**US TSCA Section 12(b) Export Notification: Export Notification requirement/De minimis concentration**

| | |
|---|---|
| n-Heptane (CAS 142-82-5) | 1.0 % One-Time Export Notification only. |
| Pentane (CAS 109-66-0) | 1.0 % One-Time Export Notification only. |

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | 1.0 % |
| Benzene (CAS 71-43-2) | 0.1 % |
| Cumene (CAS 98-82-8) | 1.0 % |
| Cyclohexane (CAS 110-82-7) | 1.0 % |
| Ethylbenzene (CAS 100-41-4) | 0.1 % |
| n-Hexane (CAS 110-54-3) | 1.0 % |
| Toluene (CAS 108-88-3) | 1.0 % |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | 1.0 % |

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | Listed. |
| Benzene (CAS 71-43-2) | Listed. |
| Cumene (CAS 98-82-8) | Listed. |
| Cyclohexane (CAS 110-82-7) | Listed. |
| Ethylbenzene (CAS 100-41-4) | Listed. |
| n-Hexane (CAS 110-54-3) | Listed. |
| Toluene (CAS 108-88-3) | Listed. |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | Listed. |

**CERCLA (Superfund) reportable quantity (lbs)**

Gasoline 100
Toluene 100
Hexane (Other Isomers) 100
Xylene (o, m, p isomers) 1000
Octane (All isomers) 100
n-Heptane 100
Pentane 100
Cumene 5000
Ethylbenzene 1000
Benzene 10
n-Hexane 5000
Cyclohexane 1000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

| | |
|---|---|
| **Hazard categories** | Immediate Hazard - Yes<br>Delayed Hazard - Yes<br>Fire Hazard - Yes<br>Pressure Hazard - No<br>Reactivity Hazard - No |
| **Section 302 extremely hazardous substance** | No |
| **Section 311 hazardous chemical** | No |

**Drug Enforcement Agency (DEA)** Not controlled

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS status** Controlled

**WHMIS classification**

B2 - Flammable/Combustible
D1A - Immediate/Serious-VERY TOXIC
D2A - Other Toxic Effects-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

**WHMIS labeling**

**Inventory status**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**US - California Hazardous Substances (Director's): Listed substance**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | Listed. |
| Benzene (CAS 71-43-2) | Listed. |
| Cumene (CAS 98-82-8) | Listed. |
| Cyclohexane (CAS 110-82-7) | Listed. |
| Ethanol (CAS 64-17-5) | Listed. |
| Ethylbenzene (CAS 100-41-4) | Listed. |
| Hexane (Other Isomers) (CAS 96-14-0) | Listed. |
| n-Heptane (CAS 142-82-5) | Listed. |
| n-Hexane (CAS 110-54-3) | Listed. |
| Octane (All isomers) (CAS 111-65-9) | Listed. |
| Pentane (CAS 109-66-0) | Listed. |
| Toluene (CAS 108-88-3) | Listed. |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | Listed. |

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Listed. |
| Ethylbenzene (CAS 100-41-4) | Listed. |
| Toluene (CAS 108-88-3) | Listed. |

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Listed: February 27, 1987 Carcinogenic. |
| Ethylbenzene (CAS 100-41-4) | Listed: June 11, 2004 Carcinogenic. |

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Listed: December 26, 1997 Developmental toxin. |
| Toluene (CAS 108-88-3) | Listed: January 1, 1991 Developmental toxin. |

**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

| | |
|---|---|
| Toluene (CAS 108-88-3) | Listed: August 7, 2009 Female reproductive toxin. |

**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Listed: December 26, 1997 Male reproductive toxin. |

**US - Massachusetts RTK - Substance: Listed substance**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | Listed. |
| Benzene (CAS 71-43-2) | Listed. |
| Cumene (CAS 98-82-8) | Listed. |
| Cyclohexane (CAS 110-82-7) | Listed. |
| Ethanol (CAS 64-17-5) | Listed. |
| Ethylbenzene (CAS 100-41-4) | Listed. |
| Hexane (Other Isomers) (CAS 96-14-0) | Listed. |

| | |
|---|---|
| n-Heptane (CAS 142-82-5) | Listed. |
| n-Hexane (CAS 110-54-3) | Listed. |
| Octane (All isomers) (CAS 111-65-9) | Listed. |
| Pentane (CAS 109-66-0) | Listed. |
| Toluene (CAS 108-88-3) | Listed. |

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | 500 LBS |
| Benzene (CAS 71-43-2) | 500 LBS |
| Cumene (CAS 98-82-8) | 500 LBS |
| Cyclohexane (CAS 110-82-7) | 500 LBS |
| Ethylbenzene (CAS 100-41-4) | 500 LBS |
| n-Hexane (CAS 110-54-3) | 500 LBS |
| Pentane (CAS 109-66-0) | 500 LBS |
| Toluene (CAS 108-88-3) | 500 LBS |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | 500 LBS |

**US - New Jersey RTK - Substances: Listed substance**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | Listed. |
| Benzene (CAS 71-43-2) | Listed. |
| Cumene (CAS 98-82-8) | Listed. |
| Cyclohexane (CAS 110-82-7) | Listed. |
| Ethanol (CAS 64-17-5) | Listed. |
| Ethylbenzene (CAS 100-41-4) | Listed. |
| n-Heptane (CAS 142-82-5) | Listed. |
| n-Hexane (CAS 110-54-3) | Listed. |
| Octane (All isomers) (CAS 111-65-9) | Listed. |
| Pentane (CAS 109-66-0) | Listed. |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | Listed. |

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

| | |
|---|---|
| 1,2,4, Trimethylbenzene (CAS 95-63-6) | Listed. |
| Benzene (CAS 71-43-2) | Listed. |
| Cumene (CAS 98-82-8) | Listed. |
| Cyclohexane (CAS 110-82-7) | Listed. |
| Ethanol (CAS 64-17-5) | Listed. |
| Ethylbenzene (CAS 100-41-4) | Listed. |
| Gasoline (CAS 86290-81-5) | Listed. |
| Hexane (Other Isomers) (CAS 96-14-0) | Listed. |
| n-Heptane (CAS 142-82-5) | Listed. |
| n-Hexane (CAS 110-54-3) | Listed. |
| Octane (All isomers) (CAS 111-65-9) | Listed. |
| Pentane (CAS 109-66-0) | Listed. |
| Toluene (CAS 108-88-3) | Listed. |
| Xylene (o, m, p isomers) (CAS 1330-20-7) | Listed. |

**US - Pennsylvania RTK - Hazardous Substances: Special hazard**

| | |
|---|---|
| Benzene (CAS 71-43-2) | Special hazard. |

## 16. Other Information

**Further information**

HMIS® is a registered trade and service mark of the NPCA.

**Other information**

Note: This Material Safety Data Sheet applies to the listed products and synonym descriptions for Hazard Communication purposes only. Technical Specifications vary greatly depending on the products and are not reflected in this document. Consult specification sheets for technical information.

**HMIS® ratings**

Health: 2*
Flammability: 3
Physical hazard: 0

**NFPA ratings**

Health: 1
Flammability: 3
Instability: 0

**Disclaimer**

This Material Safety Data Sheet (MSDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this MSDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use , the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.

**Issue date**

10-23-2010

# No. 2 Diesel Fuel

**Safety Data Sheet**

## Section 1: Identification of the substance or mixture and of the supplier

| | |
|---|---|
| **Product Name:** | No. 2 Diesel Fuel |
| **SDS Number:** | 001847 |
| **Synonyms/Other Means of Identification:** | CARB Diesel TF3; CARB Diesel; CARB Diesel 10%; CARB Diesel Ultra Low Sulfur - Dyed and Undyed; EPA Low Sulfur Diesel Fuel - Dyed and Undyed; EPA Off Road High Sulfur Diesel - Dyed; High Sulfur Diesel Fuel; Low Sulfur Diesel Fuel; No. 2 Diesel Fuel Oil; No. 2 High Sulfur Diesel - Dyed; No. 2 Low Sulfur Diesel - Dyed; No. 2 Low Sulfur Diesel - Undyed; No. 2 Low Sulfur Distillate; No. 2 Diesel with Renewable Diesel; No. 2 Ultra Low Sulfur Diesel - Dyed; No. 2 Ultra Low Sulfur Diesel - Undyed; Super Diesel Fuel; Super Diesel Fuel II-LS; Virgin Diesel Fuel; No. 2 Distillate; ULSD; Super Diesel Fuel; Super Diesel Fuel II-LS; Virgin Diesel Fuel; Distillate Blend Stock;#2 DSL ULS 15 NRLM D<br>Fuels, Diesel |
| **MARPOL Annex I Category:** | Gas Oils, Including Ship's Bunkers |
| **Intended Use:** | Fuel |
| **Manufacturer:** | ConocoPhillips<br>600 N. Dairy Ashford<br>Houston, Texas 77079-1175 |
| **Emergency Health and Safety Number:** | Chemtrec: 800-424-9300 (24 Hours) |
| **Customer Service:** | 800-527-5476 |
| **Technical Information:** | 800-527-5476 |
| **SDS Information:** | Phone: 800-762-0942<br>Email: MSDS@conocophillips.com<br>URL: www.conocophillips.com |

## Section 2: Hazard(s) Identification

**DANGER**

**NFPA**

**Flammable liquid and vapor. (H226)***
**Causes skin irritation. (H315)***
**May be fatal if swallowed and enters airways. (H304)***
**Harmful if inhaled. (H332)***
**May cause damage to organs through prolonged or repeated exposure. (H373)***
**Suspected of causing cancer. (H351)***
**Very toxic to aquatic life with long lasting effects. (H410)***

**Precautionary Statement(s):**
Obtain special instructions before use. (P201)*
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. (P210)*
Do not breathe vapors or mists. (P260)*
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. (P301+P310)*
Do NOT induce vomiting. (P331)*
Dispose of contents/container to approved disposal facility. (P501)*

** (Applicable GHS hazard code.)*

## Section 3: Composition / Information on Ingredients

| Component | CASRN | Concentration[1] |
|---|---|---|
| Diesel Fuel No. 2 | 68476-34-6 | 95-100 |
| Renewable Diesel | Proprietary | 0-5 |
| Naphthalene | 91-20-3 | <1 |

**Total Sulfur:** < 0.1 wt%

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## Section 4: First Aid Measures

**Eye Contact:** If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin Contact:** Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

**Inhalation (Breathing):** If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

**Ingestion (Swallowing):** Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

**Notes to Physician:** When using high-pressure equipment, injection of product under the skin can occur. In this case , the casualty should be sent immediately to hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**Medical Conditions Aggravated by Exposure:** Conditions which may be aggravated by exposure include skin disorders, blood disorders, liver disorders and immune system disorders.

## Section 5: Fire-Fighting Measures

**NFPA 704 Hazard Class**

**Health:** 1 **Flammability:** 2 **Instability:** 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

**Fire Fighting Instructions:** For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

**See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits**

## Section 6: Accidental Release Measures

**Personal Precautions:** Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

**Environmental Precautions:** Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

**Methods for Containment and Clean-Up:** Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

## Section 7: Handling and Storage

**Precautions for safe handling:** Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Nonsparking tools should be used. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors or mists. Use only outdoors or in well-ventilated area. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

For use as a motor fuel only. Do not use as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Diesel engine exhaust contains hazardous combustion products and has been classified as a probable cancer hazard in humans.

Static Accumulation Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that special slow load procedures for "switch loading" are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**Conditions for safe storage:** Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

## Section 8: Exposure Controls / Personal Protection

| Component | ACGIH | OSHA | Other |
|---|---|---|---|
| Diesel Fuel No. 2 | TWA: 100 mg/m$^3$ | --- | --- |
| Naphthalene | STEL: 15 ppm | TWA: 10 ppm<br>TWA: 50 mg/m$^3$ | TWA: 0.2 mg/m$^3$ (as total of 17 PNA's measured by NIOSH Method 5506) (ConocoPhillips Guidelines) |

**Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.**

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Eye/Face Protection:** The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

**Skin/Hand Protection:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

**Respiratory Protection:** Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

**Other Protective Equipment:** Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

**Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

## Section 9: Physical and Chemical Properties

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

| | |
|---|---|
| **Appearance:** | Straw colored to dyed red |
| **Physical Form:** | Liquid |
| **Odor:** | Diesel fuel |
| **Odor Threshold:** | No data |
| **pH:** | Not applicable |
| **Vapor Pressure:** | 0.40 mm Hg |
| **Vapor Density (air=1):** | > 3 |
| **Initial Boiling Point/Range:** | 300-690°F / 149-366°C |
| **Melting/Freezing Point:** | No data |
| **Solubility in Water:** | Negligible |
| **Partition Coefficient (n-octanol/water) (Kow):** | No data |
| **Specific Gravity (water=1):** | 0.81-0.88 @ 60ºF (15.6ºC) |
| **Bulk Density:** | 7.08 lbs/gal |
| **Percent Volatile:** | Negligible @ ambient conditions |
| **Evaporation Rate (nBuAc=1):** | <1 |
| **Flash Point:** | 125 -180°F / 52 -82°C |
| **Test Method:** | Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010 |
| **Lower Explosive Limits (vol % in air):** | 0.3 |
| **Upper Explosive Limits (vol % in air):** | 10.0 |
| **Auto-ignition Temperature:** | 500°F / 260°C |

## Section 10: Stability and Reactivity

**Stability:** Stable under normal ambient and anticipated conditions of use.

**Conditions to Avoid:** Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

**Materials to Avoid (Incompatible Materials):** Avoid contact with strong oxidizing agents and strong reducing agents.

**Hazardous Decomposition Products:** Not anticipated under normal conditions of use.

**Hazardous Polymerization:** Not known to occur.

## Section 11: Toxicological Information

**Information on Toxicological Effects of Substance/Mixture**

| Acute Toxicity | Hazard | Additional Information | LC50/LD50 Data |
|---|---|---|---|
| **Inhalation** | Harmful if inhaled | | > 4.65 mg/L (mist) |

## Section 11: Toxicological Information

| | | | |
|---|---|---|---|
| **Skin Absorption** | Unlikely to be harmful | | > 4.1 g/kg |
| **Ingestion (Swallowing)** | Unlikely to be harmful | | > 5 g/kg |

**Aspiration Hazard:** May be fatal if swallowed and enters airways.

**Skin Corrosion/Irritation:** Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

**Serious Eye Damage/Irritation:** Causes mild eye irritation.

**Signs and Symptoms:** While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting.

**Skin Sensitization:** Not expected to be a skin sensitizer.

**Respiratory Sensitization:** No information available.

**Specific Target Organ Toxicity (Single Exposure):** Not expected to cause organ effects from single exposure.

**Specific Target Organ Toxicity (Repeated Exposure):** May cause damage to organs through prolonged or repeated exposure. Dermal application of a distillate fuel component at doses > 125 mg/kg, 5 d/wk, for 13 weeks resulted in decreased liver, thymus, and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy and necrosis, decreased hematopoesis and lymphocyte depletion.

**Carcinogenicity:** Suspected of causing cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation.

**Germ Cell Mutagenicity:** Not expected to cause heritable genetic effects.

**Reproductive Toxicity:** Inadequate information available.

**Information on Toxicological Effects of Components**

**Naphthalene**

***Carcinogenicity:*** Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

## Section 12: Ecological Information

**Toxicity:** Experimental studies of gas oils show that acute aquatic toxicity values are typically in the range 2-20 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. They should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411; Chronic Cat 2.

**Persistence and Degradability:** Gas oils are complex combinations of individual hydrocarbon species. Based on the known or expected properties of individual constituents, category members are not predicted to be readily biodegradable. Some hydrocarbon constituents of gas oils are predicted to meet the criteria for persistence; on the other hand, some components can be easily degraded by microorganisms under aerobic conditions.

**Persistence per IOPC Fund definition:** Non-Persistent

**Bioaccumulative Potential:** Gas oil components have measured or calculated Log Kow values in the range of 3.9 to 6 which indicates a high potential to bioaccumulate. Lower molecular weight compounds are readily metabolized and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

**Mobility in Soil:** Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilization is an important loss process and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapors react readily with hydroxyl radicals with half-lives of less than one day. Photoxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water, the majority of components will be adsorbed on sediment. Adsorption is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

**Other Adverse Effects:** None anticipated.

## Section 13: Disposal Considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

**EPA Waste Number(s)**
- D001 - Ignitability characteristic

## Section 14: Transport Information

**U.S. Department of Transportation (DOT)**

**Shipping Description:** ***Aquatic toxicity studies indicate material may be classified as a Marine Pollutant. This classification impacts bulk and water shipments.***
NA1993, Diesel fuel, Combustible liquid, III
**Non-Bulk Package Marking:** Not Regulated ***[49 CFR 173.150(f)(2)]***
**Non-Bulk Package Labeling:** Not Regulated ***[49 CFR 173.150(f)(2)]***
**Bulk Package/Placard Marking:** Combustible / 1993
**Packaging - References:** None; None; 49 CFR 173.241
***(Exceptions; Non-bulk; Bulk)***
**Emergency Response Guide:** 128
**Note:** ***May also be shipped as:*** Diesel fuel, Combustible liquid, UN1202, III
***Bulk Package/Placard Marking would also be changed to:*** 1202
***Container(s) greater than 5 liters (liquids) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(l)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].***
***The following alternate shipping description order may be used until January 1, 2013:*** **Proper Shipping name, Hazard Class or Division, (Subsidiary Hazard if any), UN or NA number, Packing Group**
***Other shipping description elements may be required for DOT compliance.***

**International Maritime Dangerous Goods (IMDG)**

**Shipping Description:** ***If flashpoint is >60° C closed-cup and the material meets the IMDG definition of a Marine Pollutant, an alternate shipping name such as "Environmentally hazardous substance, n.o.s." with hazard class 9 and PG III must be used.***
UN1202, Diesel fuel, 3, III, (FP° C cc), *[where FP is the material's flash point in degrees Celsius closed cup]*
**Non-Bulk Package Marking:** Diesel fuel, UN1202
**Labels:** Flammable liquid
**Placards/Marking (Bulk):** Flammable / 1202
**Packaging - Non-Bulk:** P001, LP01
**EMS:** F-E, S-E
**Note:** ***Proper Shipping name can be:*** Gas Oil ***or*** Diesel fuel ***or*** Heating Oil, light
***If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.***
***If container(s) is greater than 5 liters (liquids) or 5 kilograms (solids), shipment may require the shipping description to contain the "Marine Pollutant" description [IMDG 5.4.1.4.3.5] and the container(s) to display the Marine Pollutant mark [IMDG 5.2.1.6].***

**International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)**

**UN/ID #:** ***Not regulated if flashpoint is >60° C closed-cup***
UN1202

## Section 14: Transport Information

**Proper Shipping Name:** Diesel fuel
**Hazard Class/Division:** 3
**Packing Group:** III
**Non-Bulk Package Marking:** Diesel fuel, UN1202
**Labels:** Flammable liquid
**ERG Code:** 3L
**Note:** ***If container(s) is greater than 5 liters (liquids) or 5 kilograms (solids), shipment may require the container to diplay the "Environmentally hazardous substance" mark [IATA 7.1.6.3].***

| | LTD. QTY | Passenger Aircraft | Cargo Aircraft Only |
|---|---|---|---|
| **Packaging Instruction #:** | Y344 | 355 | 366 |
| **Max. Net Qty. Per Package:** | 10 L | 60 L | 220 L |

## Section 15: Regulatory Information

**CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):**
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

**CERCLA/SARA - Section 311/312 (Title III Hazard Categories)**

**Acute Health:** Yes
**Chronic Health:** Yes
**Fire Hazard:** Yes
**Pressure Hazard:** No
**Reactive Hazard:** No

**CERCLA/SARA - Section 313 and 40 CFR 372:**
This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

| Component | Concentration[1] | de minimis |
|---|---|---|
| Naphthalene | <1 | 0.1% |

**EPA (CERCLA) Reportable Quantity (in pounds):**
EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

**California Proposition 65:**
Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

| Component | Type of Toxicity |
|---|---|
| Naphthalene | Cancer |

**International Hazard Classification**

**GHS Classification:**
H226 -- Flammable liquids -- Category 3
H315 -- Skin corrosion/irritation -- Category 2
H304 -- Aspiration Hazard -- Category 1
H332 -- Acute toxicity, Inhalation -- Category 4
H373 -- Specific target organ toxicity (repeated exposure) -- Category 2
H351 -- Carcinogenicity -- Category 2
H410 -- Hazardous to the aquatic environment, chronic toxicity -- Category 1

**Canada:**
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

WHMIS Hazard Class
B3 - Combustible Liquids
D1B
D2A
D2B

**National Chemical Inventories:**
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.

All components are either on the DSL, or are exempt from DSL listing requirements.

**U.S. Export Control Classification Number:** EAR99

## Section 16: Other Information

| | |
|---|---|
| **Date of Issue:** | 13-Jun-2011 |
| **Status:** | FINAL |
| **Previous Issue Date:** | 21-Dec-2010 |
| **Revised Sections or Basis for Revision:** | Handling and Storage information (Section 7) |
| **SDS Number:** | 001847 |

**Guide to Abbreviations:**
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

**Disclaimer of Expressed and implied Warranties:**
The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

**ERGON Asphalt & Emulsions, Inc.**

**CRS-2** **MSDS No. AE018**

**Date of Preparation: April 9, 2008** **Revision No. 2**

## Section 1 – Chemical Product and Company Information

| | |
|---|---|
| **Product/Chemical Name:** | CRS-2 |
| **Chemical Formula:** | Mixture |
| **CAS Number:** | Mixture |
| **Other Designations:** | Cationic Quick Set Asphalt Emulsion |
| **General Use:** | Asphalt Paving and Sealing |

**Manufacturer:** ERGON Asphalt & Emulsions, Inc.; P O Box 1639; Jackson MS 39215-1639; Phone 601-933-3000; Hours of Operation 8:00 am – 5:00 pm; ERGON 24 Hour Emergency Phone Number 1-800-222-7122; CHEMTREC 1-800-424-9300.

## Section 2 – Composition / Information on Ingredients

| Ingredient Name | CAS Number | % Vol |
|---|---|---|
| Asphalt Cement | 8052-42-4 | 66-71% |
| Water | 7732-18-5 | 28-34% |
| Cationic Emulsifier | Listed in TSCA Inventory | <1% |
| Saponifier | 7647-01-0 | <1% |

| | OSHA PEL | | ACGIH TLV | | NIOSH REL | | NIOSH |
|---|---|---|---|---|---|---|---|
| INGREDIENT | TWA | STEL | TWA | STEL | TWA | STEL | IDLH |
| Asphalt Cement | None estab. | None estab. | 0.5 mg/m$^3$ (inhalable fraction, as benzene-soluble aerosol) | None estab. | None estab. | 5 mg/m$^3$ (ceiling) | None estab. |
| Water | None estab. | None estab. | None estab. | None estab. | None estab. | None estab. | None estab. |
| Cationic Emulsifier | 400 ppm | 500 ppm | 400 ppm | 500 ppm | None estab. | None estab. | None estab. |
| Saponifier | None estab. | 5 ppm (ceiling) | None estab. | 2 ppm (ceiling) | None estab. | 5 ppm (ceiling) | 50 ppm |

## Section 3 – Hazards Information

### EMERGENCY OVERVIEW

HMIS
H-2
F-1
R-0
PPE*
* Sec.8

**POTENTIAL HEALTH EFFECTS**

**Primary Entry Routes:** Inhalation and absorption.

**Target Organs:** Mucous membranes, skin, and digestive tract.

**Acute Effects**

**Inhalation:** Irritating to mucous membranes and respiratory tract. May produce symptoms such as headache, dizziness, nausea, vomiting, and loss of coordination.

**Eye:** Highly irritating; a significant thermal hazard under normal usage due to high temperatures required for application.

**Skin:** Moderately irritating; hot asphalt will cause severe burns. May lead to photosensitization and drying of the skin.

**Ingestion:** Irritating to mucous membranes and gastrointestinal tract. May cause thermal burns as well as nausea, vomiting and diarrhea.

**Carcinogenicity:** IARC, NTP, and OSHA do not list this product as carcinogen.

**Medical Conditions Aggravated by Long-Term Exposure:** Dermatitis.

**Chronic Effects:** Prolonged and repeated skin contact may cause dermatitis, photosensitization, and melanosis. Evidence from animal studies suggest that asphalt left on the skin for long periods of time may result in local carcinomas, but there have been no reports of such effects on human skin that can be attributed to asphalt alone.

## Section 4 – First Aid Measures

**Inhalation:** Remove to fresh air. Apply artificial respiration if needed. Seek medical attention.

**Eye Contact:** Flush thoroughly with water for at least 15 minutes. If burning persists seek medical attention.

**Skin Contact:** If molten asphalt strikes the exposed skin, cool the skin immediately by quenching with cold water. Wash thoroughly with soap and water. Do not use harsh solvents to remove asphalt from skin. Lotion or hand cream may aid in the removal of asphalt. Cover with a sterile dressing. Seek medical attention if needed.

**Ingestion:** Do not induce vomiting and seek medical help.

***After first aid, get appropriate in-plant paramedic or community medical support.***

**Special Precautions/Procedures:** The petroleum hydrocarbons in this product are a complex mixture of paraffinic, naphthenic, and aromatic hydrocarbons. As with other petroleum products, the aromatic compounds are present in varying concentrations and structures. Some of these compounds may be those which have been shown to result in tumor formation in animals under laboratory conditions. The concentrations of aromatic compounds in this product require that the precautions outlined in this MSDS be followed to minimize personnel exposure.

Provide adequate ventilation to keep vapors below allowable exposure levels. Use PPE appropriate for the task.

## Section 5 – Fire Fighting Measures

**Flash Point:** 400°F (204°C)

**Flash Point Method:** COC

**Auto Ignition Temperature:** >700°F (>370°C)

**LEL:** NA

**UEL:** NA

**Flammability Classification:** Class IIIB

**NFPA**

**Extinguishing Media:** Dry chemical, foam and carbon dioxide.

**Unusual Fire or Explosion Hazards:** This product may ignite when sufficient heat is applied. Check for combustible vapors prior to and during welding or torch cutting on vessels or tanks. It has been found that in hot storage tanks low flash substances may accumulate in the vapor space. The flammability characteristics will not be detected by any flash point method. Keep ignition sources away from tank vents and prevent accumulation of pyrophoric iron sulfide.

**Hazardous Combustion Products:** Carbon monoxide, carbon dioxide, and sulfur dioxide.

**Fire-Fighting Instructions:** Use of foam or water may cause frothing. Do not release runoff from fire control methods to sewers or waterways. Use a water supply to cool fire-exposed containers.

**Fire-Fighting Equipment:** Use self-contained breathing apparatus in enclosed areas where heavy smoke may occur.

## Section 6 – Accidental Release Matters

**Spill/Leak Procedures:** Stop spill at source. Confine spill by diking or impoundment. Remove sources of heat or ignition. Clean-up spill but do not flush to sewer or surface water. Ventilate area and avoid breathing vapors or mists.

**Small Spills:** Stop spill at source if possible. Isolate and confine by diking, or similar method. Remove discharged material.

**Large Spills:**

**Containment:** For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

**Cleanup:** Allow material to cool. Mix with inert absorbent material such as soil, sand, or oil dry, to stabilize.

**Regulatory Requirements:** Notify local health and pollution control agencies as appropriate. Follow applicable OSHA regulations (29 CFR 1900.120). This material is not a hazardous waste as defined in RCRA. For disposal follow all federal, state, and local regulations regarding solid waste.

## Section 7 – Handling and Storage

**Handling Precautions:** This product is a mixture of water and asphalt. Heating this mixture above 190°F can cause the water portion to boil. This may result in frothing of the mixture causing hot asphalt to overflow the container. Hydrogen sulfide may be emitted from heated asphalt and may accumulate in storage tanks and bulk transport containers.

**Storage Requirements:** Ground and bond all transfer and storage equipment. Ventilation is required only in enclosed areas where the emulsion is subjected to severe conditions of heat or agitation.

**Regulatory Requirements:** None known.

## Section 8 – Exposure Controls / Personal Protection

**Engineering Controls:** Not applicable.

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

**Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Self-contained, positive-pressure breathing apparatus when used in confined or enclosed space or when exposure limits are exceeded or hydrogen sulfide is unknown or exceeds 20 ppm. Organic vapor respirators can be used with good ventilation when organic vapors are less than 1000 ppm or ten times permissible exposure limit, which ever is less. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes: procedures for selecting respirators; medical evaluation; fit testing; use in routine and emergency situations; cleaning, disinfecting, storing, inspecting, repairing, discarding and maintaining respirators; adequate air quality, quantity and flow; training in respiratory hazards; training in use of respirators; evaluation of effectiveness of respiratory program.

**Protective Clothing/Equipment:** Wear protective gloves, boots, aprons, and gauntlets as need to prevent prolonged or repeated skin contact. Goggles and face shields should be used in areas where splashing may occur. Wear protective eyeglasses or safety goggles per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, or smoking.

## Section 9 – Physical and Chemical Properties

**Physical State:** Liquid
**Appearance and Odor:** Brown-black liquid with a mild odor
**Odor Threshold:** Tar odor
**Vapor Pressure:** <1 mm Hg at 70°F (20°C)
**Vapor Density (Air = 1):** >1
**Formula Weight:** Est. 250 lb/lb-mole
**Density:** 8.3-8.5 lb/gal
**Specific Gravity ($H_2O$ = 1, at 4°C):** 1.01
**pH:** 2.0– 4.0

**Water Solubility:** Slightly soluble.
**Other Solubilities:** No data.
**Boiling Point:** 212°F
**Freezing/Melting Point:** No data.
**Viscosity:** No data.
**Refractive Index:** No data.
**Surface Tension:** No data.
**% Volatile:** <2%
**Evaporation Rate:** <1

## Section 10 – Stability and Reactivity

**Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Polymerization:** Hazardous polymerization cannot occur.

**Chemical Incompatibilities:** Strong oxidizing agents; Anionic emulsions.

**Conditions to Avoid:** Do not overheat product.

**Hazardous Decomposition Products:** Primary decomposition products are carbon monoxide, carbon dioxide, and water. Combustion products may include sulfur oxides and hydrogen sulfide.

## Section 11 – Toxicological Information

**Eye Effects:** Vapors may cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.

**Skin Effects:** Causes smarting of the skin and first-degree burns on short exposure; may cause secondary burns on long exposure.

**Acute Inhalation Effects:** Human, inhalation, $TC_{LO}$: No data.

**Acute Oral Effects:** Rat, oral, $LD_{50}$: 5 to 15 g/kg

**Carcinogenicity:** Not a known human carcinogen.

**Mutagenicity:** No data.

**Teratogenicity:** No data.

**Chronic Effects:** Prolonged and repeated skin contact may cause dermatitis, photosensitization, and melanosis. Evidence from animal studies suggest that asphalt left on the skin for long periods of time may result in local carcinomas, but there have been no reports of such effects on humans skin that can be attributed to asphalt alone.

## Section 12 – Ecological Information

**Ecotoxicity:** No data.

**Environmental Fate:**

**Environmental Transport:** No data.

**Environmental Degradation:** No data.

**Soil Absorption/Mobility:** No data.

## Section 13 – Disposal Considerations

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

**Disposal Regulatory Requirements:** Solidified waste material should not be a hazardous waste under RCRA guidelines. Follow Federal, state, and local regulations for disposal of solid waste.

**Container Cleaning and Disposal:** Recommend using a non-hazardous solvent to remove the product. Follow Federal, state, and local regulations for disposal of the waste material, regardless of its waste classification.

## Section 14 – Transport Information

**Shipping Name:** Asphalt Emulsion Not Regulated

**Shipping Symbols:** NA

**Hazard Class:** NA

**ID No.:** NA

**Packing Group:** NA

**Label:** NA

**Special Provisions (172.102):** NA

**Packaging Authorizations:**

**a) Exceptions:** NA

**b) Non-bulk Packaging:** NA

**c) Bulk Packaging:** NA

**Quantity Limitations:**

**a) Passenger, Aircraft, or Railcar:** NA

**b) Cargo Aircraft Only:** NA

**Vessel Stowage Requirements:**

**a) Vessel Stowage:** NA

**b) Other:** NA

## Section 15 – Regulatory Information

**EPA Regulations:**

**RCRA**

RCRA Hazardous Waste Number: Not listed.

RCRA Hazardous Waste Classification (40 CFR 261): This material should not be hazardous due to characteristics.

**CERCLA**

CERCLA: Not listed.

CERCLA Reportable Quantity (RQ): This material is not a listed hazardous substance and does not have a reportable quantity. However, if spilled into waters of the U.S., it may be reportable under the Clean Water Act.

**SARA**

SARA 311/312 Codes: Not Listed

SARA Toxic Chemical: Not listed.

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed.

**OSHA Regulations**

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): See Table in Section 2.

OSHA Specifically Regulated Substance: No

**State Regulations:** Listed in state hazardous substance list for CA and MN as Asphalt (petroleum fumes; FL, MA, NJ, as Asphalt fumes; and PA as Asphalt.

## Section 16 – Other Information

**Revision Notes:**

**Additional Hazard Rating Systems:** NAS Hazard Rating for Bulk Water Transportation of asphalt: Fire – 1, Health – 2, Water Pollution – 1, Reactivity -0.

**Disclaimer:** ERGON ASPHALT & EMULSIONS, INC. (EAE) PROVIDES THIS INFORMATION FOR THE USER'S CONSIDERATION. EAE BELIEVES THIS INFORMATION IS ACCURATE, BUT NOT ALL INCLUSIVE IN ALL CIRCUMSTANCES. USER SHOULD ENSURE THAT USER HAS CURENT DATA RELEVANT FOR ITS PURPOSES. NO WARRANTY, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY, FITNESS OR OTHERWISE IS GIVEN.

# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

| | |
|---|---|
| **Material name** | **SS-1** |
| **Version #** | 02 |
| **Revision date** | 10-11-2011 |
| **CAS #** | Mixture |
| **Manufacturer:** | Ergon Asphalt & Emulsions, Inc. |
| **Address:** | P O Box 1639<br>Jackson MS 39215-1639 |
| **Contact Name:** | Mary Ellen Snow |
| **Telephone:** | 601-933-3540; 24-hour Customer Service 1-800-222-7122 |
| **E-mail:** | mary.snow@ergon.com |
| **CHEMTREC:** | 1-800-424-9300 |

## 2. Hazards Identification

| | |
|---|---|
| **Emergency overview** | Irritating to skin. Prolonged exposure may cause chronic effects. |
| **Potential health effects** | |
| **Routes of exposure** | Inhalation. Ingestion. Skin contact. Eye contact. |
| **Eyes** | Contact may irritate or burn eyes. |
| **Skin** | Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Avoid contact with the skin. |
| **Inhalation** | May be irritating. Prolonged inhalation may be harmful. |
| **Ingestion** | Do not ingest. |
| **Target organs** | Eyes. Skin. Central nervous system. |
| **Chronic effects** | Conjunctiva. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. |
| **Signs and symptoms** | Irritation of eyes and mucous membranes. Skin irritation. |

## 3. Composition / Information on Ingredients

| **Hazardous components** | **CAS #** | **Percent** |
|---|---|---|
| ASPHALT | 8052-42-4 | 50 - 100 |
| **Non-hazardous components** | **CAS #** | **Percent** |
| WATER | 7732-18-5 | 20 - 50 |
| Other components below reportable levels | | 0.0001 - 20 |

## 4. First Aid Measures

**First aid procedures**

| | |
|---|---|
| **Eye contact** | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately. |
| **Skin contact** | Wash off with warm water and soap. Get medical attention if irritation develops and persists. |
| **Inhalation** | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. |
| **Ingestion** | Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If ingestion of a large amount does occur, call a poison control center immediately. |
| **Notes to physician** | Symptoms may be delayed. |
| **General advice** | If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire Fighting Measures

**Flammable properties** Do not use forced stream as this could cause fire to spread.

**Extinguishing media**

**Suitable extinguishing media** Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use a solid water stream as it may scatter and spread fire.

**Protection of firefighters**

**Specific hazards arising from the chemical** Fire may produce irritating, corrosive and/or toxic gases. H2S

**Specific methods** In the event of fire and/or explosion do not breathe fumes. In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

## 6. Accidental Release Measures

**Personal precautions** Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Methods for containment** ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up** Dike far ahead of spill for later disposal.

Never return spills in original containers for re-use. Shovel the material into waste container.

## 7. Handling and Storage

**Handling** All equipment used when handling the product must be grounded. Do not get this material in contact with eyes. Avoid contact with skin. Do not use in areas without adequate ventilation. This product is a mixture of water and asphalt. Heating to temperatures above 190°F can cause the water portion to boil, causing excessive frothing resulting in hot asphalt overflow. Avoid prolonged exposure. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning. Wash thoroughly after handling. Avoid release to the environment.

**Storage** Keep away from heat and sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a well-ventilated place. Keep container tightly closed. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Use care in handling/storage.

## 8. Exposure Controls / Personal Protection

**Occupational exposure limits**

**ACGIH**

| Components | Type | Value | Form |
|---|---|---|---|
| ASPHALT (8052-42-4) | TWA | 0.5000 mg/m3 | Inhalable fraction. |

**Engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal protective equipment**

**Eye / face protection** Do not get in eyes. Chemical goggles are recommended.

**Skin protection** Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves.

**Respiratory protection** If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

**General hygiene considerations** When using do not smoke. Do not get in eyes. Avoid contact with skin. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical & Chemical Properties

**Appearance** Viscous liquid

**Color** Black.

| | |
|---|---|
| **Odor** | Mild Petroleum Odor |
| **Odor threshold** | Not available. |
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **pH** | 8.5 - 10.6 |
| **Melting point** | Not available. |
| **Freezing point** | Not available. |
| **Boiling point** | 212 °F (100 °C) |
| **Flash point** | Not available. |
| **Evaporation rate** | Not available. |
| **Flammability limits in air, upper, % by volume** | Not available. |
| **Flammability limits in air, lower, % by volume** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | > 1 |
| **Specific gravity** | 1.01 |
| **Relative density** | Not available. |
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not available |
| **Auto-ignition temperature** | > 700 °F (> 371.1 °C) |
| **Decomposition temperature** | Not available. |
| **VOC** | Not available. |
| **Percent volatile** | 2 % |

## 10. Chemical Stability & Reactivity Information

| | |
|---|---|
| **Chemical stability** | Stable under normal temperature conditions. |
| **Conditions to avoid** | Contact with incompatible materials. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Possibility of hazardous reactions** | Hazardous polymerization does not occur. |

## 11. Toxicological Information

| | |
|---|---|
| **Local effects** | Components of the product may be absorbed into the body through the skin. Irritating to skin. Contact may irritate or burn eyes. |
| **Chronic effects** | Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects. |
| **Carcinogenicity** | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |

**ACGIH Carcinogens**

| | |
|---|---|
| ASPHALT (CAS 8052-42-4) | A4 Not classifiable as a human carcinogen. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| ASPHALT (CAS 8052-42-4) | 2B Possibly carcinogenic to humans.<br>3 Not classifiable as to carcinogenicity to humans. |

## 12. Ecological Information

| | |
|---|---|
| **Ecotoxicity** | Contains a substance which causes risk of hazardous effects to the environment. |
| **Environmental effects** | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. |
| **Persistence and degradability** | Not available. |

## 13. Disposal Considerations

**Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

## 14. Transport Information

**DOT**

Not regulated as dangerous goods.

## 15. Regulatory Information

**CERCLA (Superfund) reportable quantity**

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** No

**Inventory status**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | No |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** WARNING: This product contains a chemical known to the State of California to cause cancer.

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

ASPHALT (CAS 8052-42-4) Listed.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

ASPHALT (CAS 8052-42-4) Listed: January 1, 1990 Carcinogenic.

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

ASPHALT (CAS 8052-42-4) Listed.

**US - Pennsylvania RTK - Hazardous Substances: Special hazard**

ASPHALT (CAS 8052-42-4) Special hazard.

## 16. Other Information

**Further information** HMIS® is a registered trade and service mark of the NPCA.

**HMIS® ratings** Health: 2
Flammability: 1
Physical hazard: 0

| | |
|---|---|
| **NFPA ratings** | Health: 2<br>Flammability: 1<br>Instability: 0 |
| **Disclaimer** | The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. |
| **Issue date** | 10-11-2011 |

**AI-43320** **Constables 8. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Raquel Ramos, CONSTABLE PCT. #3

**Department:** CONSTABLE PCT. #3

## Information

### CAPTION

Constable Pct. 3-LBSP (1284) :
1. Authorization and approval to accept the Local Border Security Program FY 2014 (LBSP-14) Grant Award No: LBSP-14-0030 in the amount of $46,000.00.
2. Authorization for County Judge, as authorized official, to sign grant award form and related documents.
3. Authorization to pay overtime reimbursable under the grant terms and conditions.
4. Approval of Certification of Revenues, as certified by the County Auditor, for the Local Border Security Program FY2014 (LBSP-14)
5. Approval to appropriate funds for LBSP-14 in the amount of $46,000.00.

### BACKGROUND

Authorization to apply for LBSP-14 (AI#41995) approved by Commissioners' Court on 12/03/13.
SAA Award Number: LBSP-14-0030
Grant Period: February 12, 2014 to August 31, 2014

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1284-421-00-293-080-4-XXX

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Acct#4-1284-334-10-293-080-4-000 Constable Pct.3 LBSP Revenues

Fringe benefits which include retirement, unemployment comp, workers comp, health & life attributed to the overtime hours are to be charged to the Constable Pct. 3 general fund budget (4-1100-421-00-293-001-0-XXX).

## Attachments

2014 Recipient Grant Award
Terms and Conditions
Grant Award Letter
Financial cost estimate
appropriation
COR

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 03:27 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 11:03 AM |

| | | |
|---|---|---|
| Rosalinda Cantu | Rosie Cantu | 02/28/2014 02:49 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Raquel Ramos Started On: 02/24/2014 04:45 PM

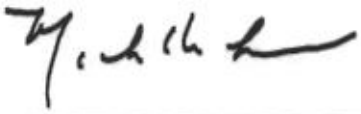
Final Approval Date: 02/28/2014

**Texas Department of Public Safety**
**Texas Homeland Security State Administrative Agency**

## 2014 Recipient Grant Award

| | |
|---|---|
| **Sub-Recipient Name:** | Hidalgo County Constable PCT 3 |
| **Sub-Recipient Authorized Official and Address:** | The Honorable Ramon Garcia<br>PO Box 1356<br>Edinburg, Texas 78540 |
| **SAA Award Number:** | LBSP-14-0030 |
| **Amount of Grant:** | $ 46,000.00 |
| **Amount of Match:** | No Matching Funds Required |
| **Grant Period:** | **From:** February 12, 2014 **To:** August 31, 2014 |
| **Date of Grant Award** | February 12, 2014 |
| **Program Title:** | Local Border Security Program FY 2014 (LBSP-14) |
| **Authority/Funding Instrument:** | Senate Bill 1, Article V, Rider 35 of the Texas General Appropriations Act (83rd Legislature) |
| **CFDA:** | NA – These are State Appropriated Funds |
| **Method of Payment:** | Primary method is reimbursement |
| **Administered by:** | Texas Department of Public Safety<br>Texas Homeland Security State Administrative Agency<br>1033 La Posada, Suite 160<br>Austin, Texas 78752 |

**Sub-Recipient Acceptance:** I have read, understood and agree to this Grant Recipient Agreement consisting of this Award and the attached Terms & Conditions.

| AWARDING AGENCY APPROVAL | RECIPIENT GRANT ACCEPTANCE |
|---|---|
|  | |
| Machelle Pharr<br>Deputy Assistant Director<br>Texas Homeland Security<br>State Administrative Agency<br>Texas Department of Public Safety | Printed Name:<br>Title: |
| Date: February 12, 2014 | Date: |

The signed Award with Terms and Conditions must be returned to SAA-LBSP@dps.texas.gov on or before this **Grant Acceptance Due Date**: March 31, 2014

# 2014 TERMS AND CONDITIONS

***Instructions:***

*The Recipient shall:*

1. *Fill in the information and sign the Grant Recipient Award;*
2. *Certify they have read and understand these Terms and Conditions;*
3. *Certify to the statements provided in Exhibits A and B located at the back of this document by filling in contact information and signing all exhibits, and*
4. *Return all documents via email to SAA-LBSP@dps.texas.gov on or before the date provided in the transmittal letter and/or in this Grant.*

## 1. Grant Recipient Agreement

This Grant Recipient Agreement (consisting of this 2014 Grant Recipient Award and these Terms and Conditions) is made and entered into by and between the Department of Public Safety / Texas Homeland Security State Administrative Agency, an agency of the State of Texas, hereinafter referred to as "DPS/THSSAA," and the funds recipient, hereinafter referred to as the "Recipient" or "Grantee." Furthermore, DPS/THSSAA and the Recipient are collectively hereinafter referred to as the "Parties." This Grant Recipient Agreement, or otherwise referred to herein as "this Grant" or "this Agreement", is only an offer until Recipient returns the signed copy of this Grant on or before the date provided in the transmittal letter and/or in this Grant Recipient Award.

The FY 2014 Local Border Security Program, hereinafter referred to as "LBSP-14," is funded by the Eighty-third Texas Legislature, Regular Session 2013, Senate Bill 1, Article V, Rider 35 of the Texas General Appropriations Act. The Texas Legislature has appropriated funds for:

a. Overtime and operational costs for increased patrol and investigative capacity for certified peace officers along with other law enforcement support personnel (i.e., Communications Officers/Dispatchers, Jailers); and

b. Certain operational costs incurred as part of these overtime patrols and investigations, such as fuel/mileage and additional costs for minor emergency repairs, such as tire repair, fan belt replacement for vehicles or equipment being used in the program operations (limited to a maximum of $150.00 per incident).

Recipient shall not assign or transfer any interest in this Grant without the express, prior written consent of DPS/THSSAA. If Recipient issues subawards as part of this Grant project, Recipient shall include and require its subawardees to comply with the terms and conditions of this Grant.

## 2. Overview and Performance Standards

All allocations and use of funds under this Grant must be in accordance with and shall comply with all provisions of the "Local Border Security Program Guide, FY 2014 (LBSP-14)" dated November 8, 2013, which is incorporated by reference herein. Recipient shall read, understand and by signature accept all terms of the Program Guide and these Terms and Conditions as binding.

Standard of Performance. Recipient shall perform all activities and projects which were approved by DPS/THSSAA. Any change to a project shall receive prior written approval by DPS/THSSAA. Recipient shall perform all activities in accordance with all terms and conditions, provisions and requirements set forth in this Grant, including but not limited to the following Exhibits:

1. Certifications, hereinafter referred to as "**Exhibit A**"
2. Assurances, hereinafter referred to as "**Exhibit B**"

## 3. Failure to Perform

In the event Recipient fails to comply with any and all required conference calls, meetings, financial reporting requirements, or any requirement of this Grant, in addition to the remedies specified in this Grant, Recipient is liable to DPS/THSSAA for the amount not to exceed the award amount of this Grant and may be barred from applying and receiving additional DPS/THSSAA grant program funds or any other program funds administered by DPS/THSSAA until repayment is made and any other compliance or audit finding is satisfactorily resolved. Failure to timely implement projects may reduce future funding in additional grant programs administered by DPS/THSSAA.

## 4. Funding Obligations

A. DPS/THSSAA will not be liable to Recipient for any costs incurred by Recipient that are not allowable costs.

B. Notwithstanding any other provision of this Grant, the total of all payments and other obligations incurred by DPS/THSSAA under this Grant shall not exceed the Total Award Amount listed on the Grant Recipient Award.

C. DPS/THSSAA will not be liable to Recipient for any cost incurred prior to execution of this Grant.

D. Recipient shall refund to DPS/THSSAA any sum of these Grant funds that has been determined by DPS/THSSAA to be an overpayment to Recipient or that DPS/THSSAA determines has not been spent by Recipient in accordance with this Grant. No refund payment(s) shall be made from local, state or federal grant funds unless repayment with Grant funds is specifically permitted by statute or regulation. Recipient shall make such refund to DPS/THSSAA within thirty (30) calendar days after DPS/THSSAA requests such refund.

E. Notwithstanding any other provisions, DPS/THSSAA's obligations under this Grant are contingent upon the receipt of adequate funds to meet DPS/THSSAA's liabilities hereunder, except as required by LBSP-14. DPS/THSSAA will not be liable to Recipient for costs which exceed the amount specified in this Grant.

## 5. Performance Period

The performance period for this Grant is listed on the Grant Recipient Award. All goods and services shall be received within the performance period AND all reimbursement requests shall be submitted to DPS/THSSAA within the performance period. Recipient shall have expended all Grant funds and submitted reimbursement requests and any invoices to DPS/THSSAA by the end of the performance period. DPS/THSSAA will not be obligated to reimburse expenses incurred or submitted after the performance period.

## 6. Uniform Administrative Requirements, Cost Principals and Audit Requirements

Except as specifically modified by law or this Grant, Recipient shall administer this Grant through compliance with the most recent version of all applicable laws and regulations, including but not limited to DPS/THSSAA program legislation, DPS/THSSAA program guidelines, and the terms and conditions of this Grant. A non-exclusive list is provided below.

**A. Administrative Requirements**

1. State of Texas Uniform Grant Management Standards as developed under the authority of Chapter 783, Texas Government Code

2. 44 C.F.R. Part 13, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments (the A-102 Common Rule)

**B. Cost Principles**

1. 2 C.F.R. Part 225, Cost Principles for State, Local and Indian Tribal Governments (OMB Circular A-87)

2. OMB Circular A-133, Audits of State, Local Governments and Non-Profits

**C. Audit Requirements**

OMB Circular A-133, Audits of States, Local Governments and Non-Profit Organizations

**D. Grant Guidance**

The "Local Border Security Program Guide FY 2014 (LBSP-14)," available at
http://www.txdps.state.tx.us/director_staff/saa/2014LBSPGrantInfo.htm

## 7. State Requirements for Grants

Recipient shall comply with all federal, state, and local laws and regulations applicable to this Grant including but not limited to the laws and the regulations promulgated in Texas Government Code, Chapter 783, Uniform Grant and Contract Management, State Administrative Agency Information Bulletins, available at http://www.txdps.state.tx.us/director_staff/saa/information_bulletins.htm, Texas Uniform Grants Management Standards (UGMS) at governor.state.tx.us/files/state-grants/?UGMS062004.doc and the State Administrative Agency Sub-recipient Manual, available at http://www.txdps.state.tx.us/director_staff/saa/documents/subrecipientManual.pdf. Recipient shall, in addition to the assurances and certifications, comply and require each of its subcontractors employed in the completion of the project to comply with all applicable statutes, regulations, executive orders, OMB circulars, terms and conditions of this Grant, and the approved application.

Recipient shall comply with the State of Texas, General Appropriations Act, Art. IX, Part 4, as follows:

1. Grant funds may not be expended for a grant to a law enforcement agency regulated by Texas Occupations Code, Chapter 1701, unless the law enforcement agency requesting the grant is in compliance with all rules developed by the Commission on Law Enforcement Officer Standards and Education or the Commission on Law Enforcement Officer Standards and Education certifies that the requesting agency is in the process of achieving compliance with such rules.
2. Grant funds may not be granted to or expended by any entity which performs political polling. This prohibition does not apply to a poll conducted by an academic institution as part of the institution's academic mission that is not conducted for the benefit of a particular candidate or party.
3. Grant funds may not be expended to a unit of local government unless the following limitations and reporting requirements are satisfied:
   a. Texas General Appropriations Act, Art. IX, Parts 2 and 3, except there is no requirement for increased salaries for local government employees;
   b. Texas Government Code Sections 556.004, 556.005, and 556.006, including not using any money or vehicle to support the candidacy of any person for office; not influencing positively or negatively the payment, loan, or gift to a person or political organization for a political purpose; and not using grant funds to influence the passage or defeat of legislation including not assisting with the funding of a lobbyist, or using grant funds to pay dues to an organization with a registered lobbyist;
   c. Texas Government Code Sections 2113.012 and 2113.101 including not using grant funds to compensate any employee who uses alcoholic beverages on active duty plus Recipient may not use grant funds to purchase an alcoholic beverage and may not pay or reimburse any travel expense for an alcoholic beverage;
   d. Texas General Appropriations Act, Art. IX, Section 6.13 requiring Recipients to make every effort to attain key performance target levels associated with this grant award, including performance milestones, milestone time frames, and related performance reporting requirements; and
   e. General Appropriations Act, Art. IX, Sections 7.01 and 7.02, and Texas Government Code §2102.0091, including grant funds may only be expended if Recipient timely completes and files its reports.

## 8. Restrictions and General Conditions

A. Use of Funds. DPS/THSSAA grant funds may only used for the purposes set forth in this Grant, and shall be consistent with the authority for this Grant. Grant funds may not be used for matching funds for other Federal grants/cooperative agreements, lobbying, or intervention in Federal regulatory or adjudicatory proceedings. In addition, State funds may not be used to sue the State of Texas or any other government entity.

B. Lobbying Prohibited. No funds shall be expended by Recipient to pay any person to influence, or attempt to influence an officer or employee of any agency, a Member of State Legislature, an officer or employee of the State Legislature, or an employee of a Member of the State Legislature in connection with any State action concerning the award or renewal of any State contract, grant, loan, cooperative agreement. Tex. Gov't Code § 556.0055. Recipient shall not use any State funds, either directly or indirectly, in support of the enactment, repeal, modification or adoption of any law, regulation, or policy, at any level of government.

C. Transferring Funds. Recipient is prohibited from transferring funds between grant programs (such as SHSP, UASI, and OPSG) or between each year of this Grant

D. Notices. All notices or communications required or permitted to be given by either party hereunder shall be deemed sufficiently given if mailed by registered mail or certified mail, return receipt requested, or sent by overnight courier, such as Federal Express or Lone Star, to the other party at its respective address. For notice to DPS/THSSAA see address set forth below.

| DPS/THSSAA Contact Information |
|---|
| Deputy Assistant Director |
| Texas Homeland Security State Admin. Agency |
| Texas Department of Public Safety |
| P.O. Box 4087 |
| Austin, TX 78773-0220 |

F. Points of Contacts. Within 30 calendar days of any change, Recipient shall notify DPS/THSSAA of any change or correction to the chief elected official, program, and/or financial points of contact.

G. DUNS Number. Recipient confirms its Data Universal Numbering Systems (DUNS) Number is the number listed on this Grant. The DUNS Number is the nine digit number established and assigned by Dun and Bradstreet, Inc. If Recipient does not have a DUNS number, it may obtain one by calling 866/705-5711 or going to http://fedgov.dnb.com/webform.

H. Direct Deposit. If Recipient has not received LBSP reimbursements from DPS/THSSAA within the past eleven (11) months (prior to date of award), it shall forward a new/updated direct deposit form to DPS/THSSAA. Completed direct deposit forms from Recipient shall be emailed to SAA-LBSP@dps.texas.gov. The email subject line and attachment name shall include the jurisdiction name and identify the document attached (i.e. "*Sample County DD form*"). The direct deposit form is currently available at http://www.window.state.tx.us/taxinfo/taxforms/74-176.pdf. Recipient may simultaneously sign up for the Advance Payment Notification (APN) email feature which provides State of Texas payees with a one-business-day advance notice that a direct deposit payment has been sent to its financial institution. After receiving an APN, a payee may securely access its payment details online.

I. Procurements. Recipient shall comply with all applicable state, and local laws and requirements, including but not limited to proper competitive solicitation processes where required, for any procurement which utilizes state funds awarded under this Grant.

J. Use of DPS/THSSAA Seals and Non-Endorsement. Recipient shall obtain DPS/THSSAA's prior written approval before using its name, seal, logo, crest or reproductions. Funding of this Grant does not equate to endorsement of use of DPS/THSSAA's name.

K. Recipient shall submit the following reports:

1. Border Incident Assessment Report (BIAR): Recipient shall email, fax or hand deliver all BIARs to its supporting JOIC as soon as possible, but no later than 9:00 AM daily following each reporting period.

2 Steady State Report: Steady State activities are defined as normal patrol or investigative duties that do not use these Grant funds, but directly impact the overall LBSP mission. Recipient shall report this information to the Joint Operations and Intelligence Center.

3 Uniform Crime Reporting (UCR): Recipient shall submit UCR data to the Crime Records Division of the Texas Department of Public Safety on a monthly basis.

4 Criminal History Reporting: Recipient shall submit criminal history reporting data, including information on arrest, charges, and dispositions as required by Article 60 of the Texas Code of Criminal Procedure.

5 LBSP-14 Financial Reports. Recipient shall submit financial reports (reimbursement request) preferably on a monthly basis, but at least quarterly.

L. Unified Command (UC) Teleconferences/Meetings. Recipient shall participate in all scheduled UC teleconferences or meetings.

M. Site Visits. DPS/THSSAA, through its authorized representative, has the right at all reasonable times to make site visits to review project accomplishments and management control systems and to provide such technical assistance as may be required. If any site visit is made by DPS/THSSAA on the premises of Recipient or a contractor under this Grant, Recipient shall provide and shall require its contractors to provide all reasonable facilities and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations shall be performed in such a manner that will not unduly delay the work.

N. Americans with Disabilities Act of 1990. Recipient shall comply with the requirements of Titles I, II, and III of the Americans with Disabilities Act, which prohibits Recipients from discriminating on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities. 42 U.S.C. §§ 12101-12213.

O. Public Dissemination of Sensitive Information. Recipient shall notify DPS/THSSAA of any workshops, conferences, seminars or other public venues at least one hundred (100) calendar days before presenting any potentially sensitive information regarding this project. No sensitive information may be presented by Recipient without DPS/THSSAA prior written approval.

P. Security Concerns/Violations. Recipient shall inform the DPS/THSSAA's Deputy Assistant Director in writing within two (2) calendar days of Recipient being made aware of any security concerns with individuals having access to government facilities or sensitive information. In the event that sensitive information is divulged in violation of Recipient's security procedures, Recipient shall immediately notify the DPS/THSSAA Deputy Assistant Director and take appropriate law enforcement and legal action.

## 9. Monitoring

DPS/THSSAA, or its authorized representative, reserves the right to perform periodic desk/office-based and/or on-site monitoring of Recipient's compliance with this Grant and of the adequacy and timeliness of Recipient's performance pursuant to this Grant. After each monitoring visit, DPS/THSSAA shall provide Recipient with a written report of the monitor's findings. If the monitoring report notes deficiencies in Recipient's performance under this Grant, the monitoring report shall include requirements for the timely correction of such deficiencies by Recipient. Failure by Recipient to take action specified in the monitoring report may be cause for suspension or termination of this Grant pursuant to the Suspension and/or Termination Section herein.

## 10. Audit

Audit of State Funds. Recipient shall arrange for the performance of an annual financial and compliance audit of funds received and performances rendered under this Grant as required by the Single Audit Act (OMB Circular A – 133; 44 C.F.R. 13.26). Recipient shall comply, as applicable, with Texas Government Code, Chapter 783, the Uniform Grant Management Standards (UGMS), the State Uniform Administrative Requirements for Grants and Cooperative Agreements.

Right to Audit. Recipient shall provide the Comptroller General of the United States, the Texas State Auditor, DPS/THSSAA, or any of their duly authorized representatives, access to and the right to conduct a financial or compliance audit of grant funds received and performances rendered under this Grant. Recipient shall permit DPS/THSSAA or its authorized representative to audit Recipient's records. Recipient shall provide any documents, materials or information necessary to facilitate such audit.

Recipient's Liability for Disallowed Costs. Recipient shall be liable to DPS/THSSAA for any costs disallowed pursuant to any financial or compliance audit(s) of these funds. Recipient further understands and agrees that reimbursement to DPS/THSSAA of such disallowed costs shall be paid by Recipient from funds that were not provided or otherwise made available to Recipient pursuant to this Grant.

Recipient's Facilitation of Audit. Recipient shall take such action to facilitate the performance of such audit(s) conducted pursuant to this section as DPS/THSSAA may require of Recipient. Recipient shall ensure that this clause concerning the authority to audit funds received indirectly by subcontractors through Recipient and the requirement to cooperate is included in any subcontract it awards.

State Auditor's Clause. Acceptance of funds under this Grant acts as acceptance of the authority of the State Auditor's Office to conduct an audit or investigation in connection with those funds. Recipient agrees to cooperate fully with the State Auditor's Office in the conduct of the audit or investigation, including providing all records requested. Recipient shall ensure that this clause concerning the State Auditor's Office's authority to audit funds and the requirement to cooperate fully with the State Auditor's Office is included in any subgrants or subcontracts it awards. Additionally, the State Auditor's Office shall at any time have access to and the rights to examine, audit, excerpt, and transcribe any pertinent books, documents, working papers, and records of Recipient relating to this Grant.

## 11. Retention and Accessibility of Records

Retention of Records. Recipient shall maintain fiscal records and supporting documentation for all expenditures of this Grant's funds pursuant to all applicable state and local laws, rules, and regulations, including but not limited to Tex. Loc. Gov't Code Ch. 203, UGMS §_42, and this Grant. Recipient shall retain these records and any supporting documentation for a minimum of three (3) years from the later of the completion of this project's public objective, submission of the final expenditure report, any litigation, dispute, or audit. Records shall be retained for three (3) years after any real estate or equipment final disposition.

Access to Records. Recipient shall give the United States Department of Homeland Security, the Comptroller General of the United States, the Texas State Auditor, DPS/THSSAA, or any of its duly authorized representatives, access to and the right to examine all books, accounts, records, reports, files, other papers, things or property belonging to or in use by Recipient pertaining to this Grant including records concerning the past use of DPS/THSSAA funds. Such rights to access shall continue as long as the records are retained by Recipient. Recipient shall maintain such records in an accessible location and provide citizens reasonable access to such records consistent with the Texas Public Information Act, Texas Government Code, Chapter 552.

Inclusion in Subcontracts. Recipient shall include the substance of the Retention of Records and Access to Records section herein in all subcontracts.

After Action Reporting. Recipient shall complete, deliver to the appropriate source, and retain copies of all after-action reports and certificates of completion for all training and exercises paid for by this Grant.

## 12. Legal Authority

Signatory Authority. Recipient assures and guarantees that Recipient possesses the legal authority to enter into this Grant, receive grant funds and to perform the project Recipient has obligated itself to perform pursuant to this Grant.

Authorized Representative. The person or persons signing and executing this Grant on Recipient's behalf do warrant and guarantee that he/she has been duly authorized by Recipient to execute this Grant on Recipient's behalf and to validly and legally bind Recipient to all terms and conditions and performance obligations.

Conflicts in Requirements. If conflict exists between federal, state, or local requirements, Recipient shall comply with the strictest requirement.

## 13. Notice of Litigation and Claims

Recipient shall provide DPS/THSSAA immediate notice in writing of any action or claim, including any proceeding before an administrative agency, filed against Recipient arising out of performance of this Grant. Except as otherwise directed by DPS/THSSAA, Recipient shall furnish immediately to DPS/THSSAA copies of all documentation or pleadings received by Recipient with respect to such action or claim.

## 14. No Liability for Employees and Officers

DPS/THSSAA shall have no liability whatsoever for the actions or omissions of an individual employed or contracted by Recipient, regardless of where the individual's actions or omissions occurred.

## 15. Non-Waiver of Defaults

Any failure of DPS/THSSAA, at any time, to enforce or require the strict keeping and performance of any provision of this Grant shall not constitute a waiver of such provision, and shall not affect or impair same or the right of DPS/THSSAA at any time to avail itself of same. A waiver does not become effective unless DPS/THSSAA expressly agrees to such waiver in writing. Any payment by DPS/THSSAA shall not constitute a waiver or otherwise impair or prejudice any right, power, privilege, or remedy available to DPS/THSSAA to enforce its rights, as such rights, powers, privileges, and remedies are specifically preserved.

## 16. Changes and Amendments

Modification. DPS/THSSAA may modify this Grant after an award has been made. Once notification has been made in writing, any subsequent request for funds indicates Recipient's acceptance of the changes to this Grant. Any alteration, addition, or deletion to this Grant by Recipient is not valid.

Written Amendment. Alterations, additions or deletions to this Grant, such as changes to period of performance and award amounts, must be made through an executed Grant Adjustment Notice (GAN).

Authority to Amend. During the period of performance for this Grant, DPS/THSSAA may issue policy directives that serve to establish, interpret or clarify this Grant's performance requirements. Such policy directives shall be promulgated by DPS/THSSAA in the form of Information Bulletins and Sub-recipient Manuals and shall have the effect of modifying this Grant and shall be binding upon Recipient as if written in this Grant.

Effect of Changes in State Laws. Any alterations, additions, or deletions to this Grant that are required by changes in state laws or regulations are automatically incorporated into this Grant without written amendment to this Grant and shall become effective upon the date designated by such law or regulation. In the event DPS/THSSAA determines that changes are necessary to this Grant after an award has been made, including changes to the period of performance or terms and conditions, Recipient shall be notified of the changes in writing. Once notification has been made, any subsequent request for funds will indicate Recipient's acceptance of the changes to this Grant.

## 17. Headings

Headings and captions of this Grant are only for convenience and reference. These headings and captions shall not affect or modify the terms and conditions or be used to interpret or assist in the construction of this Grant.

## 18. Venue

Venue shall lie in Travis County, Texas, and this Grant is governed by the laws of the State of Texas.

## 19. Suspension

In the event Recipient fails to comply with any term of this Grant, DPS/THSSAA may, upon written notification to Recipient, suspend this Grant, in whole or in part, withhold payments to Recipient and prohibit Recipient from incurring additional obligations of this Grant's funds.

## 20. Termination

DPS/THSSAA shall have the right to terminate this Grant, in whole or in part, at any time before the end of the Performance Period, if DPS/THSSAA determines that Recipient has failed to comply with any term of this Grant. DPS/THSSAA shall provide written notice of the termination and include:

1. The reason(s) for such termination;
2. The effective date of such termination; and
3. In the case of partial termination, the portion of this Grant to be terminated.

## 21. Enforcement

If Recipient materially fails to comply with any term of this Grant, whether stated in a federal or state statute or regulation, an assurance, in a state plan or application, a notice of award, or elsewhere, DPS/THSSAA may take one or more of the following actions, as appropriate in the circumstances:

1. Temporarily withhold cash payments pending correction of the deficiency by Recipient or more severe enforcement action by DPS/THSSAA;

2. Disallow, that is, deny both use of funds and matching credit for, all or part of the cost of the activity or action not in compliance;
3. Wholly or partially suspend or terminate this Grant for Recipient's program;
4. Withhold further awards for the program; or
5. Take other remedies that may be legally available.

The costs of Recipient resulting from obligations incurred by Recipient during a suspension or after termination of this Grant are not allowable unless DPS/THSSAA expressly authorizes them in the notice of suspension or termination or subsequently. Other Recipient costs during suspension or after termination which are necessary and not reasonably avoidable are allowable if:

1. The costs result from obligations which were properly incurred by Recipient before the effective date of suspension or termination, are not in anticipation of it, and in the case of a termination, are non-cancellable; and
2. The costs would be allowable if this Grant were not suspended or expired normally at the end of the funding period in which the termination takes effects.

The enforcement remedies identified in this section, including suspension and termination, do not preclude Recipient from being subject to "Debarment and Suspension" under E.O. 12549 or 44 C.F.R. §13.35.

## 22. Conflict of Interest

No employee, officer or agent of Recipient shall participate in the selection, or in the award or administration of a contract supported by State funds if a conflict of interest, real or apparent, is involved or otherwise creates the appearance of impropriety.

## 23. Closing of the Grant

A. DPS/THSSAA will close this Grant after receiving Recipient's final performance report indicating that all approved work has been completed and all funds have been disbursed, completing a review to confirm the accuracy of the reported information, and reconciling actual costs to award modifications and payments. If the close out review and reconciliation indicates that Recipient is owed additional funds, DPS/THSSAA will send the final payment automatically to Recipient. If Recipient did not use all the funds received, DPS/THSSAA will issue a Grant Adjustment Notice (GAN) to recover the unused funds. Recipient shall return the funds to the DPS/THSSAA within 30 calendar days of receiving the GAN.

B. At the completion of Recipient's performance period, DPS/THSSAA will de-obligate all uncommitted / unexpended funds, which shall be returned to DPS/THSSAA, and will no longer available to Recipient once de-obligated.

C. The closeout of this Grant does not affect:

1. DPS/THSSAA's right to disallow costs and recover funds on the basis of a later audit or other review;
2. Recipient's obligation to return any funds due as a result of later refunds, corrections, or other transactions;
3. Records retention requirements, property management requirements, and audit requirements, as set forth herein; and
4. Any other provisions of this Grant that impose continuing obligations on Recipient or that govern the rights and limitations of the parties to this Grant after the expiration or termination of this Grant.

***[Intentionally left blank]***

***Please fill in the appropriate information and certify by signing below that you have read, understood, and agree to the terms of this Grant.***

Print Name of Authorized Official _____

Title _____

Recipient Organization _____

_____ _____

Signature of Authorized Official Date

## EXHIBIT A

**CERTIFICATIONS**

1. **DRUG-FREE WORKPLACE** - Recipient certifies that it will provide a drug-free workplace by:
   A. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition.
   B. Establishing a drug-free awareness program to inform employees about:
      i. the dangers of drug abuse in the workplace;
      ii. Recipient's policy of maintaining a drug-free workplace;
      iii. any available drug counseling, rehabilitation, and employee assistance programs; and
      iv. the penalties that may be imposed upon employees for drug abuse violations.
   C. Requiring each employee to be engaged in the performance of this Grant be given a copy of the statement required by paragraph (A).
   D. Notifying the employee in the statement required by paragraph (A) that, as a condition of employment under this Grant, the employee shall:
      i. abide by the terms of the statement, and
      ii. notify the employer of any criminal drug statute conviction for a violation occurring in the workplace not later than five calendar days after such conviction.
   E. Notifying DPS/THSSAA within ten calendar days after receiving notice under subparagraph (D) (ii) from an employee or otherwise receiving actual notice of such conviction.
   F. Taking one of the following actions with respect to any employee who is so convicted:
      i. appropriate personnel action against such an employee, up to and including termination; or
      ii. requiring such employee to participate satisfactorily in drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.
   G. Making a good faith effort to continue to maintain a drug-free workplace through the implementation of this section.

2. **LOBBYING –** Recipient certifies that:
   A. It will not use grant funds, either directly or indirectly, in support of the enactment, repeal, modification, or adoption of any law, regulation or policy, at any level of government.
   B. If any non-grant funds have been or will be used in support of the enactment, repeal, modification, or adoption of any law, regulation or policy, at any level of government, it shall notify DPS/THSSAA to obtain the appropriate disclosure form.
   C. It will include the language of paragraphs (A) and (B_ of this section in the award documents for all sub-awards or sub-contracts at all tiers and will require all sub-recipients and subcontractors to certify accordingly.

***Please fill in the appropriate information and sign to certify this Exhibit A, if applicable.***

Print Name of Authorized Official _____

Title _____

Recipient Organization _____

_____ _____

Signature of Authorized Official Date

## EXHIBIT B

### ASSURANCES

As the duly authorized representative of Recipient, I certify that Recipient:

1. Shall comply with Texas Government Code, Chapter 573, by ensuring that no officer, employee, or member of Recipient's governing body or of Recipient's contractor shall vote or confirm the employment of any person related within the second degree of affinity or the third degree of consanguinity to any member of the governing body or to any other officer or employee authorized to employ or supervise such person. This prohibition shall not prohibit the employment of a person who shall have been continuously employed for a period of two years, or such other period stipulated by local law, prior to the election or appointment of the officer, employee, or governing body member related to such person in the prohibited degree.
2. Shall insure that all information collected, assembled, or maintained by Recipient relative to a project will be available to the public during normal business hours in compliance with Texas Government Code, Chapter 552, unless otherwise expressly prohibited by law.
3. Shall comply with Texas Government Code, Chapter 551, which requires all regular, special, or called meetings of governmental bodies to be open to the public, except as otherwise provided by law or specifically permitted in the Texas Constitution.
4. Shall comply with Section 231.006, Texas Family Code, which prohibits payments to a person who is in arrears on child support payments.
5. Shall not contract with or issue a license, certificate, or permit to the owner, operator, or administrator of a facility if Recipient is a health, human services, public safety, or law enforcement agency and the license, permit, or certificate has been revoked by another health and human services agency or public safety or law enforcement agency.
6. Shall comply with all rules adopted by the Texas Commission on Law Enforcement Officer Standards and Education pursuant to Chapter 1701, Texas Occupations Code, or shall provide the grantor agency with a certification from the Texas Commission on Law Enforcement Officer Standards and Education that the agency is in the process of achieving compliance with such rules if Recipient is a law enforcement agency regulated by Texas Occupations Code, Chapter 1701.
7. Shall follow all assurances. When incorporated into a grant award or contract, standard assurances contained in the application package become terms or conditions for receipt of grant funds. Administering state agencies and Recipients shall maintain an appropriate contract administration system to insure that all terms, conditions, and specifications are met. (See UGMS Section _.36 for additional guidance on contract provisions).
8. Shall comply with the Texas Family Code, Section 261.101, which requires reporting of all suspected cases of child abuse to local law enforcement authorities and to the Texas Department of Child Protective and Regulatory Services. Recipient shall also ensure that all program personnel are properly trained and aware of this requirement.
9. Shall comply with all federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352), which prohibits discrimination on the basis of race, color, or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps and the Americans with Disabilities Act of 1990 including Titles I, II, and III of the Americans with Disability Act which prohibits recipients from discriminating on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities, 44 U.S.C. §§ 12101-12213; (d) the Age Discrimination Act of 1974, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to the nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290dd-3 and 290ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental, or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to this Grant.
10. Shall comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally assisted construction sub-agreements.
11. Shall comply with the provisions of the Hatch Political Activity Act (5 U.S.C. §§7321-29), which limit the political activity of employees whose principal employment activities are funded in whole or in part with Federal funds.
12. Shall comply with the minimum wage and maximum hours provisions of the Federal Fair Labor Standards Act and the Intergovernmental Personnel Act of 1970, as applicable.
13. Shall insure that the facilities under its ownership, lease, or supervision which shall be utilized in the accomplishment of the project are not listed on the Environmental Protection Agency's (EPA) list of Violating Facilities and that it will notify the Federal grantor

agency of the receipt of any communication from the Director of the EPA Office of Federal Activities indicating that a facility to be used in the project is under consideration for listing by the EPA (EO 11738).

14. Shall comply with all State of Texas tax laws and are solely responsible for filing all required state and federal tax forms.
15. Shall comply with all applicable requirements of all state laws, executive orders, regulations, and policies governing this program.
16 Certifies that is and its principals are eligible to participate and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state, or local governmental entity and it is not listed on a state or federal government's terrorism watch list as described in Executive Order 13224. Entities ineligible for federal procurement have Exclusions listed at https://www.sam.gov/portal/public/SAM/.
17. Shall adopt and implement applicable provisions of the model HIV/AIDS work place guidelines of the Texas Department of Health as required by the Texas Health and Safety Code, Ann., Sec. 85.001, et seq.

***Please fill in the appropriate information and sign to certify this Exhibit B.***

Print Name of Authorized Official _____

Title _____

Recipient Organization _____

_____ _____

Signature of Authorized Official Date

# TEXAS DEPARTMENT OF PUBLIC SAFETY

5805 N LAMAR BLVD • BOX 4087 • AUSTIN, TEXAS 78773-0001
512/424-2000
www.dps.texas.gov

STEVEN C. McCRAW
DIRECTOR
DAVID G. BAKER
CHERYL MacBRIDE
DEPUTY DIRECTORS

COMMISSION
A. CYNTHIA LEON, CHAIR
CARIN MARCY BARTH
MANNY FLORES
STEVEN P. MACH
RANDY WATSON

February 12, 2014

Dear Authorized Official,

Attached are FY2014 Local Border Security Program (LBSP) grant award documents for your jurisdiction/agency. This letter, and the attached documents, contain important information about the grant and provide instructions requiring your immediate action for grant acceptance.

Please follow the instructions at the top of the first page of the Terms and Conditions, and return all documents as instructed below to the Texas Department of Public Safety, Texas Homeland Security State Administrative Agency (THSSAA) **no later than March 31, 2014.**

The Grant Recipient Agreement (GRA) which includes the Grant Award, the Terms and Conditions, and attached Exhibits must be filled out, and signed by the person identified (Authorized Official) on the grant award. Signature by anyone else will only be accepted if a letter of designation from the governing body is attached that authorizes the person to sign for the Grantee. Letters of signature designation will be deemed as authorization for that person to sign any future documents related to the grant award unless the letter indicates otherwise.

**Return GRA via E-mail**

The FY2014 GRA documents should be returned via email to SAA-LBSP@dps.texas.gov by the date indicated above. Please title the subject line of your email "LBSP" and name of jurisdiction (i.e. LBSP El Paso, City of). Submit the executed (signed) GRA (including a signed Award and the signed Terms and Conditions) as an attachment to the email using the same naming convention (i.e. LBSP Hidalgo County.pdf).

Please retain the original copy of each document submitted to the THSSAA for your records. The grant awards may be withdrawn if all required documents are not completed and submitted to the THSSAA within the deadline established above.

**FY2014 LBSP Key Dates**

| | |
|---|---|
| February 12, 2014 | Date award Issued to Grantees |
| March 31, 2014 | Deadline for signed Grant Recipient Agreement (GRA) to be returned to the SAA |
| August 31, 2014 | End of Grantee's performance period |
| October 15, 2014 | Liquidation Date<br>(Final invoices/reimbursement requests are due to the THSSAA) |

If you have any questions regarding the LBSP grant, please contact Sherry Saba at 512-377-0024.

Sincerely,

Machelle Pharr
Deputy Assistant Director
Texas Homeland Security State Administrative Agency

**FINANCIAL COST ESTIMATE**

**1. NAME OF PROGRAM / ASSISTANCE:** Local Border Security Program FY 2014

**2. APPLICANT NAME:** **Hidalgo County Pct Consta le Department**

**. ESTIMATED MONTHLY E PENSES:**

*a. Personnel Estimate*

| Position | Num er o Personnel | Hourly Rate | O ertime Rate (Time and 1/2) | Num er o O/T Hours per Person per Day | Num er o Days | Salary | FICA 7. | Total Salary Fringe |
|---|---|---|---|---|---|---|---|---|
| Chief | 1 | $27.42 | $41.13 | 5 | 3 | $616.13 | $47.13 | $663.26 |
| Sgt. II | 1 | $23.57 | $35.36 | 5 | 2 | $353.60 | $27.05 | $380.65 |
| Sr. Deputy | 3 | $22.95 | $34.43 | 5 | 3 | $1,549.35 | $118.53 | $1,667.88 |
| Sr. Deputy | 2 | $21.43 | $32.15 | 5 | 3 | $964.50 | $73.78 | $1,038.28 |
| Sr. Deputy | 1 | $20.70 | $31.05 | 5 | 2 | $310.50 | $23.75 | $334.25 |
| Deputy II | 5 | $19.48 | $29.22 | 5 | 3 | $2,191.50 | $167.65 | $2,359.15 |
| | | | | | | | **Total Personnel Estimates** | **,44 .47** |

*b. Travel & Per Diem Estimate*

| Position | Num er o Personnel | Commercial Tra el Costs | Mileage rom / to County | Estimated A e. Daily Miles | Num er o Days | Total Mileage Cost | Hotel Rate 8 Maximum | Hotel Tax Rate | Meals Maximum | Tra el Totals |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | $0.00 | | $0.00 | | $0.00 |
| | | | | | | $0.00 | | $0.00 | | $0.00 |
| | | | | | | | | **Total Tra el Per Diem Estimate** | | $0.00 |

*c. Operational Cost Estimate*

| | Num er o Cars | Num er o Miles per Car | Num er o Days | Rate per Mile | Su total |
|---|---|---|---|---|---|
| *Mileage* | 1 | 84 | 2 | $0.56 | **1,22 .04** |
| *Fuel Costs* | | | | | |
| *Other Costs* | | | | | |
| | | | | **Total Operational Cost Estimate** | **1,22 .04** |

*NOTE: Estimate either for fuel or mileage, not both.

**FILL IN SHADED FIELDS ONLY**

**4. NUMBER OF MONTHS IN THE GRANT PERIOD:**

**. ARE YOU PAID MONTHLY OR BI-MONTHLY:** **BI-MONTHLY**

**. INDICATE THE NUMBER OF HOURS IN YOUR PAY PERIOD:** **80**

X

Signature of Grant Official

**7. TOTAL AMOUNT OF APPLICATION**

| | Total Grant |
|---|---|
| **a. Personnel Estimate** | $38,660.82 |
| **. Tra el Per Diem Estimate** | $0.00 |
| **c. Operational Cost Estimate** | $7,338.24 |
| **Total Expenses** | **4 , .0** |

**8. TYPE OF PAYMENT YOU PREFER: (c ec one)**

Reimbursement

ONE TIME Advance Payment Request

**DATE:** March 4, 2014

**2014**
**Appropriation**

**DEPARTMENT HEAD:** Constable Pct 3 - Constable Gallardo

**DEPARTMENT NAME:** Constable Precinct No. 3

**ACCOUNT NUMBER:** 4-1284-421-00-293-080-4-XXX LBSP GRANT

**Contact Person:** Raquel Ramos **Ph#** 956-205-7031

**SUBJECT:** **Budget Amendments** (increase (decrease)) in accordance with Local Government Code, Chapter 111, § 111.070, Item C (2).

Honorable Commissioners' Court of Hidalgo County:

I would like to request the following Budget Amendments (increase (decrease)) in accordance with Local Government Code, Chapter 111, § 111.070, Item C (2).

| INCREASE ACCOUNT NUMBER(S) | ACCOUNT (OBJECT) NAME | | AMOUNT |
|---|---|---|---|
| 4-1284-421-00-293-080-4-131 | CONST.PCT NO. 3- LBSP GRANT | OVERTIME | 35,704.14 |
| 4-1284-421-00-293-080-4-220 | CONST.PCT NO. 3- LBSP GRANT | FICA | 2,957.62 |
| 4-1284-421-00-293-080-4-581 | CONST.PCT NO. 3- LBSP GRANT | TRAVEL IN COUNTY | 7,338.24 |
| | | | |
| | | | |
| 4-1284-334-10-293-080-4-000 | CONSTABLE PCT. NO 3 LBSP- REVENUES | | 46,000.00 |
| | | | |
| | | | - |
| | | | |
| | | | |
| | | **TOTAL BUDGET INCREASE (DECREASE)** | **46,000.00** |

**REASON:** TO APPROPRIATE THE FY-14 LBSP PROGRAM GRANT FUNDS AWARDED TO THE CONSTABLE PCT NO. 3 OFFICE BY THE TEXAS DEPARTMENT OF PUBLIC SAFETY, TEXAS HOMELAND SECURITY STATE ADMINISTRATIVE AGENCY FOR OVERTIME EXPENDITURES. GRANT PERIOD EFFECTIVE 02-12-2014 TO 08-31-2014. (GRANT AWARD NO. LBSP-14-0030)

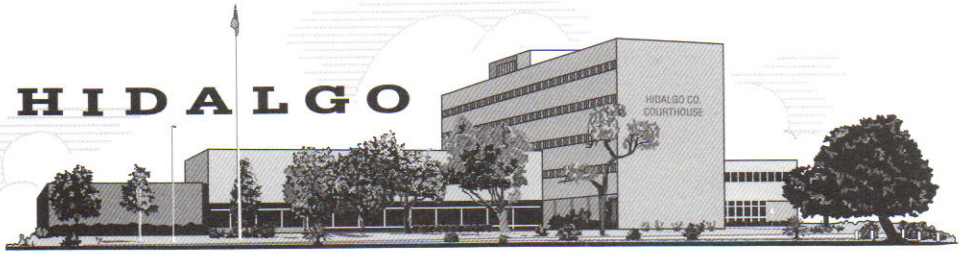
DEPARTMENT HEAD SIGNATURE

APPROVED COMMISSIONERS' COURT

____/____/____
DATE

ATTEST COUNTY CLERK

# COUNTY of HIDALGO




EDINBURG, TEXAS 78539

*HIDALGO COUNTY AUDITOR'S OFFICE*
*Hidalgo County Administration Building*
*2808 South Business Highway 281*
*Edinburg, Texas 78539-6243*
*PHONE: (956) 318-2511*
*FAX: (956) 318-2577*
*WEBSITE: www.co.hidalgo.tx.us/auditor*

February 28, 2014

The Honorable Ramon Garcia, Hidalgo County Judge
The Honorable A.C. Cuellar, Jr., Commissioner, Precinct No. 1
The Honorable Hector "Tito" Palacios, Commissioner, Precinct No. 2
The Honorable Jose M. Flores, Commissioner, Precinct No. 3
The Honorable Joseph Palacios, Commissioner, Precinct No. 4

**RE: Certification of Revenue**

Dear Judge and Commissioners:

Pursuant to Local Government Code § 111.0706 SPECIAL BUDGET FOR GRANT OR AID MONEY:

> The county auditor shall certify to the commissioners court the receipt of all public or private grant or aid money that is available for disbursement in a fiscal year but not included in the budget for that fiscal year. On certification, the court shall adopt a special budget for the limited purpose of spending the grant or aid money for its intended purpose.

I, Ray Eufracio, County Auditor of Hidalgo County, certify to the Hidalgo County Commissioners Court the receipt of an award from the Texas Department of Public Safety – Texas Homeland Security State Administrative Agency. These funds may now be made available by creating a new special budget or amending a current budget for its intended purposes.

| AMOUNT | PURPOSE |
|---|---|
| $46,000 | Award No. LBSP-14-0030 |

CERTIFIED BY:

Raymundo Eufracio, CPA
Hidalgo County Auditor

3/3/14
Date

HIDALGO COUNTY DISTRICT JUDGES

JAIME E. TIJERINA JUDGE, 92ND D.C. | RODOLFO DELGADO JUDGE, 93RD D.C. | J. R. "BOBBY" FLORES JUDGE, 139TH D.C. | ROSE GUERRA REYNA JUDGE, 206TH D.C. | JUAN R. PARTIDA JUDGE, 275TH D.C. | MARIO E. RAMIREZ, JR. JUDGE, 332ND D.C. | NOE GONZALEZ JUDGE, 370TH D.C. OVERSEER | LETICIA LOPEZ JUDGE, 389TH D.C. | AIDA SALINAS FLORES JUDGE, 398TH D.C. | ISRAEL RAMON, JR. JUDGE, 430TH D.C. | JESSE CONTRERAS JUDGE, 449TH D.C.

**AI-43300** **Health & Human Services Dept. 9. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Eddie Olivarez **Submitted By:** Mike Escaname, HEALTH & HUMAN SERVICES DEPT.

**Department:** HEALTH & HUMAN SERVICES DEPT.

## Information

### CAPTION

Requesting approval to submit a request for increase in Bioterrorism Discretionary grant funds in the amount of $11,334.00 with a local match funding requirement of $1,259.00.

### BACKGROUND

01/14/14 - AI-42459 - Acceptance of original PPCPS / BDS FY 14 grant contract

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1293-441-00-340-047-4-XXX

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** Y

**BUDGETARY IMPACT:**

Increase request = $11,334.00
Local match required = $1,259.00

## Attachments

Letter

Budget Template

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/21/2014 05:06 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 02:23 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Mike Escaname Started On: 02/21/2014 11:19 AM

Final Approval Date: 02/28/2014

Hidalgo County Health &
Human Services Department

**Pu lic Healt Emergency Preparedness Di ision**

1304 S. 25th Ave*Edinburg, TX 78542
*Phone (956) 318-2426*Fax (956) 318-2431

March 4, 2014

Pam Long
Quality Assurance Coordinator
Preparedness Grants Management Branch-Community Preparedness Section
Texas Dept. of State Health Services
PO Box 149347: MC 1926
Austin, TX 78714-9347

**RE: BP2-LHD-76**

Ms. Long,

I wish to inform you of a funding change request for the following project: ***BP2-LHD-76*** Community Preparedness of Responder and Volunteer which was funded at $36,769.00 DSHS amount.

***BP2-LHD-76*** discretionary funded project's budget is being resubmitted for consideration, the changes are due to the type of equipment required to be utilized in a field operations environment and must have the capability to deal with such an event. The current equipment listed was limited to use in a controlled environment and is less reliable in a field setting. The change in equipment and pricing will represent an RFID system which will be more robust and effective. The overall scope and purpose of the project will remain the same. Your support in will be greatly appreciated.

The increase requested is $11,334.00 DSHS amount for a total revised DSHS funds amount of $48,103.00.

If you have any questions please do not hesitate to contact me at (956) 383-6221 Ext. 7211

See new budget worksheet.

Respectfully,

Eduardo "Eddie" Olivarez
Chief Administrative Officer
Hidalgo County Health and Human Services Dept.

# FORM I: BUDGET SUMMARY (REQUIRED)

**Legal Name o Respondent:** **Hidalgo County**

| Budget Categories | Total Budget (1) | DSHS Funds Requested (2) | Direct Federal Funds (3) | Other State Agency Funds* (4) | Local Funding (Match) (5) | Other Funds ( ) |
|---|---|---|---|---|---|---|
| A. Personnel | $0 | $0 | | | $0 | |
| B. Fringe Benefits | $0 | $0 | | | $0 | |
| C. Travel | $0 | $0 | | | $0 | |
| D. Equipment | $9,008 | $8,108 | | | $900 | |
| E. Supplies | $21,696 | $19,526 | | | $2,170 | |
| F. Contractual | $0 | $0 | | | $0 | |
| G. Other | $22,744 | $20,469 | | | $2,275 | |
| H. Total Direct Costs | $53,448 | $48,103 | $0 | $0 | $5,345 | $0 |
| I. Indirect Costs | $0 | $0 | | | $0 | |
| J. Total (Sum of H and I) | $53,448 | $48,103 | $0 | $0 | $5,345 | $0 |
| K. Program Income - Projected Earnings | $0 | $0 | $0 | $0 | $0 | $0 |

**NOTE: T e Total Budget amount or eac Budget Category ill a e to e populated among t e unding sources. Enter amounts in ole dollars or ( ), (4), ( ), *if applicable*. A ter amounts a e een entered or eac unding source, eri y t at t e Distri ution Total elo e uals t e respecti e amount under t e Total Budget rom column (1).**

| | Budget Catetory | Distri ution Total | Budget Total | Budget Category | Distri ution Total | Budget Total |
|---|---|---|---|---|---|---|
| **C ec Totals For:** | **Personnel** | **0** | **0** | **Fringe Bene its** | **0** | **0** |
| | **Tra el** | **0** | **0** | **E uipment** | **,008** | **,008** |
| | **Supplies** | **21,** | **21,** | **Contractual** | **0** | **0** |
| | **Ot er** | **22,744** | **22,744** | **Indirect Costs** | **0** | **0** |

| **TOTAL FOR:** | **Distri ution Totals** | **,448** | **Budget Total** | **,448** |
|---|---|---|---|---|

*Letter(s) of good standing that validate the respondent's programmatic, administrative, and financial capability must be placed after this form if respondent receives any funding from state agencies other than DSHS related to this project. If the respondent is a state agency or institution of higher education, letter(s) of good standing are not required. DO NOT include funding from other state agencies in column 4 or Federal sources in column 3 that is not related to activities being funded by this DSHS project.

**AI-43301** **Health & Human Services Dept. 9. D.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Eddie Olivarez **Submitted By:** Mike Escaname, HEALTH & HUMAN SERVICES DEPT.

**Department:** HEALTH & HUMAN SERVICES DEPT.

## Information

### CAPTION

Requesting approval to apply for the 2014 Binational Health Council funding in an amount up to $6,500.00.

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1293-441-00-340-054-4-XXX

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

No local matching funds required.

## Attachments

Award Notice

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/21/2014 01:43 PM |
| Manuel Chapa | Manuel Chapa | 02/26/2014 01:42 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Mike Escaname Started On: 02/21/2014 11:52 AM

Final Approval Date: 02/28/2014

## Mike Escaname

**From:** Martinez,Kathie (DSHS) <Kathie.Martinez@dshs.state.tx.us>
**Sent:** Thursday, February 20, 2014 11:50 AM
**To:** Mike Escaname (miguel.escaname@mail.hchd.org)
**Cc:** DeLaFuente,Edith (DSHS)
**Subject:** OBH Funding for Community-based Healthy Border Initiatives
**Attachments:** CBHBI Funding Request Template.docx

**Importance:** High

Hi Mike,

We are working on our community-based healthy border initiatives work plans for the border health commission grant. This funding cycle (term 03/1/14 – 08/31/14), we have $6,500 available for the Hidalgo Reynosa Binational Health Council for projects. I understood there were some changes in personnel so I'm not sure who my point person is, so I would really appreciate if you could assist me with that. We would like to get a completed template within the next 30 days but if that is not possible, please let me know and we can work out a deadline.

I am attaching the funding request template. It works the same as in years past. The council meets and approves their projects, the lead completes the template and returns it to me and Edith deLafuente at edith.delafuente@dshs.state.tx. The template will then be reviewed by both of us and our recommendations will go to our Director for review and approval. Once approved, a PO will be issued and work may commence.

As for the type of projects, they can be any project that address the priorities of the U.S. – Mexico Border Health Commission. The priorities are (1) TB; (2) Obesity/Diabetes; (3) Infectious disease and public health emergencies; (4) Strategic planning; (5) Access to Care and research; and, (6) Data collection and academia alliances. The Commission does highlight the obesity/diabetes priority for the BBHW theme.

Please let me know if you have any questions.

Thanks,

Kathie Martinez
Office of Border Health
Telephone #: (512) 776-3736
Mobile #: (512) 705-4617
Fax #: (512) 776-7262

**AI-43329** **Health & Human Services Dept. 9. E.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Eddie Olivarez **Submitted By:** Mike Escaname, HEALTH & HUMAN SERVICES DEPT.

**Department:** HEALTH & HUMAN SERVICES DEPT.

## Information

### CAPTION

Public hearing to consider public comments for the Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, pursuant to Texas Health & Safety Code Ann. Section 437.001 ET Seq., as amended; 25 Texas Administrative Code Section 229.161 - 229.171, 229.173 - 229.175, as amended; 25 Texas Administrative Code section 229.373, as amended.
Topics for discussion include:

1. Fee changes
2. Permit application process
3. Inspections
4. Parking, water and electricity agreements
5. Push cart regulations
6. Flea market requirements
7. Mobile food vendor requirements

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:**

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

### BUDGETARY IMPACT:

No Budgetary Impact
Public Hearing to consider public comments...

## Attachments

fact sheet

rules

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 04:31 PM |
| Glinda Pacheco | Glinda Pacheco | 02/27/2014 02:32 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Mike Escaname Started On: 02/25/2014

Final Approval Date: 02/28/2014

# Hidalgo County Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo
# Public Comment Regarding Revised Policy
# March 5, 2014

| Current Policy | | Proposed Policy | |
|---|---|---|---|
| **1. Fee Schedule** | | | |
| Establishments with 1-10 employees | $50.00 | **Mobile Food Vendor Permit** | **$100.00** |
| 11 or more employees | $100.00 | **Establishments with 1-10 employees** | **$100.00** |
| | | **11 or more employees** | **$125.00** |
| | | **21 or more employees** | **$150.00** |
| **2. Permit Application Process** | | | |
| Obtain approval from Planning, Fire Marshal, and Environmental Health OSSF Division | | **Adds: Approval from Environmental Compliance Division** | |
| **3. Inspection Schedule** | | | |
| Before issuance of a permit | | **Adds: Inspection every 120 days at Hidalgo County Health & Human Services- Environmental Health Division** | |
| On-site inspection(s) | | **Adds: Permit holder shall maintain a log of all daily operational periods** | |
| | | **Adds: Permit holder shall maintain a log of all waste disposal and maintenance to vehicle** | |
| **4. Required Agreements** | | | |
| Restroom agreement (if applicable) | | **Adds: Parking agreement (if applicable)** | |
| | | **Adds: Electricity agreement (if applicable)** | |
| **5. Push Cart Regulations** | | | |
| Unit shall not exceed four (4) feet in width, eight (8) feet in length, and eight (8) feet in height including a unit's shade umbrella. | | **Adds: The unit must have at least 2 (two) reflective devices on each side to be seen in low-light conditions.** | |
| Unit shall be easily movable, controllable, and maneuverable by one (1) person when the unit is fully loaded | | **Adds: The unit must be affiliated with a certified commercial vendor** | |
| The bottom of the unit shall be at least one (1) foot from the ground | | **Adds: The operator of the unit must wear a reflective safety vest at all times while the unit is in operation** | |
| Unit shall not be self-propelled | | **Adds: Shall only sell pre-packaged, sealed foods and/or beverages** | |
| | | **Adds: Shall not sell or prepare fresh food and/or beverages, hot or cold, on the unit** | |
| **6. Flea Market (allowing the sale of food) Requirements** | | | |
| Not Applicable | | **Adds: Permanent structure food court must have:**<br>**a. Restroom facilities within 300 feet**<br>**b. Plumbing with hot and cold water**<br>**c. Proper waste disposal and**<br>**d. A permanent structure food court shall consist of at least two (2) or more food vendors operating from a permanent or semi-permanent structure (i.e., not readily moveable)** | |
| | | **Adds: Mobile vendor food courts must have:**<br>**a. Restroom facilities within 300 feet**<br>**b. Paved parking space**<br>**c. Electrical outlet and** | |

# Hidalgo County Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo
# Public Comment Regarding Revised Policy
# March 5, 2014

| | |
|---|---|
| | **d. Waste disposal connection**<br>**e. A mobile vendor food court shall consist of at least two (2) or more mobile food vendors (does not include push carts) operating simultaneously on the same tract or parcel of land** |
| | **Adds: All flea market food vendors regardless of type must be in compliance with Hidalgo County Planning Department, Right of Way Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site sewage Facility (OSSF) policies and procedures** |
| | **Adds: Flea market owners with a permanent or mobile food court must maintain a current Food Manager's Certification at all times** |
| | **Adds: All persons engaged in the sale and/or preparation of food must maintain a current Food Handler's Certification at all times of operation.** |
| **7. Mobile Food Vendor Requirements** | |
| Shall be readily identifiable by business name, printed in bold black letters not less than three (3) inches in height, no less than one and one-half (1.5) inches in width, permanently affixed, and prominently displayed upon at least two (2) sides of the units. | **Adds: A person must comply with policies and procedures of the Hidalgo County Planning Department, Right of Way Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures** |
| Shall provide written details or plans regarding the systems installed for approved water source, distribution, delivery, and retention and for waste, sewage, and wastewater retention, drainage, and disposal or removal | **Adds: Mobile vendor food courts must have:**<br>**a. Paved parking space**<br>**b. Electrical outlet**<br>**c. Waste disposal connection and**<br>**d. Appropriate restroom facilities within 300 feet of mobile food vendor vehicles**<br>**e. A mobile vendor food court shall consist of at least two (2) or more mobile food vendors (does not include push carts) operating simultaneously on the same tract or parcel of land** |
| Live animals shall be excluded from the immediate adjacent surrounding areas of all mobile food establishments | **Adds: Must be commercial grade, generator-powered, and certified to meet all State health standards and Texas department of Transportation standards** |
| All motor vehicles operating as mobile food establishments upon open roads, streets, and highways shall maintain a current Texas motor vehicle inspection sticker and a current Texas motor-vehicle license-plate registration sticker | **Adds: Must comply with all Texas Traffic and Safety Laws while the unit is in operation; including Section 285.001 of the Texas Transportation Code, as amended** |
| | **Adds: Approval from Planning Department, Environmental Health (OSSF Division), Environmental Compliance, and an approved inspection from Fire Marshal** |
| | **Adds: All mobile food vendor vehicles shall be readily moveable**<br>**1. All mobile food vendors, including push carts, shall not provide tables/seating, or any additional structures around or adjacent to the unit** |
| | **Adds: Vendors serving fresh food must do so in single-serve, single-use containers designed for transport** |

## REFERENCE

Form FE.1.1 "How to start a food business in Hidalgo County"
Form FE.1.2 "Food vendor permit application"
Form FE.1.3 "What kind of food permit do I need?"
Form FE.1.4 "Obtaining a temporary food vendor permit"
Form FE.1.5 "Restroom Agreement for Mobile Food Vendors"
Form FE.1.6 "Electricity Agreement for Mobile Food Vendors"
Form FE.1.7 "Requirements for a food vendor"
Form FE 1.8 "Daily activity log"
Form FE 1.9 "Maintenance and Service log"

## PREFACE

Hidalgo County Health & Human Services - Environmental Division (HCHHS-ED) is authorized to enforce state and federal laws and rules adopted under state law concerning food service establishments, retail food stores, mobile food units, and roadside food vendors, pursuant to Texas Health and Safety Code Section 437.002(a), as amended. TEX. HEALTH & SAFETY CODE ANN. §§ 437.001 *et seq*., as amended. 25 TEX. ADM. CODE §§ 229.161-229.171,229.173 -229.175, as amended. HCHHS is a participating agency in the FDA Voluntary National Retail Food Regulatory Program Standards, 2011.

To enforce state law and rules adopted under state law, Hidalgo County by order may require food service establishments, retail food stores, mobile food units, and roadside food vendors in unincorporated areas of the county, including areas in the extraterritorial jurisdiction of a municipality, to obtain a permit from the County. TEX. HEALTH & SAFETY CODE ANN. §437.003, as amended. 25 TEX. ADM. CODE § 229.373, as amended.

Pursuant to Texas Administration Code Title 25, Chapter 229, Section 169(a)(1), Hidalgo County may impose additional requirements to protect against health hazards related to the conduct of food establishments as a mobile operation, may prohibit the sale of some or all potentially hazardous food, and when no health hazard will result, may waive or modify certain requirements relating to physical facilities. 25 TEX. ADM. CODE § 229 .169( a)( 1), as amended.

## I. PURPOSE

The purpose of these Rules is to safeguard public health and better assure that consumers obtain food that is safe, unadulterated, and honestly presented by establishing uniform monitoring for food establishments in the unincorporated areas of

Hidalgo County, including areas in the extraterritorial jurisdiction of a municipality, or a municipality that does not have a health department.

## II. DEFINITIONS

Words and phrases used in these Rules shall have the meanings provided in Health and Safety Code, Chapter 437 and Texas Administrative Code Title 25, Chapter 229. TEX. HEALTH & SAFETY CODE ANN. §§ 437.001 *et seq*., as amended. 25 TEX. ADM. CODE §§ 229.161 -229.171, and 229.173 -229.175, as amended.

## III. PERMITS

A. No person shall operate a food establishment in unincorporated areas of the county, including areas in the extraterritorial jurisdiction of a municipality, without having a permit issued by HCHHS-ED. Permits are not transferable from one person to another or from one location to another location, except as permitted by these Rules. A valid permit must be posted in or on every food establishment in a conspicuous place. Only a person who complies with the requirements of state law and regulations and these Rules shall be entitled to a permit.

B. A food establishment operated solely by a nonprofit organization is exempt from the permitting requirement of these Rules, but is not exempt from compliance with state law and regulations. An organization claiming exemption from these Rules as a nonprofit organization shall provide HCHHS-ED with such documentation as HCHHS-ED deems necessary to prove the establishment's current tax-exempt status as a nonprofit organization.

C. An establishment is not a food establishment for the purposes of these Rules if it is excluded from the definition of food establishment under Texas Administrative Code Title 25, Chapter 229, Section 162(40), as amended. 25 TEX. ADM. CODE § 229.162(40), as amended.

D. If an inspector finds that a food vendor is operating without a valid permit issued by HCHHS-ED, the food establishment will be closed for business until the permit is appropriately acquired by the vendor at HCHHS-ED.

1. 1st violation: Verbal and/or written notice to begin permitting process before next operational period.
   a. Establishment/vendor must close for business until permit is obtained.
2. 2nd violation: If same vendor continues to operate without a valid permit
   a. Vendor will be closed for business until valid permit is obtained.
   b. Voluntary destruction of food product will be requested by inspector. (Texas Food Establishment Rules 229.161 -175) and
   c. Citation issued to vendor

## IV. ISSUANCE OF PERMIT

A. Any person desiring to operate a food establishment must make a written application for a permit on forms provided by HCHHS. The application must contain the name and address of each applicant, the location and type of the proposed food establishment, the applicable fee, and signature of applicant(s). An incomplete application will not be processed, even if initially accepted. Failure to provide all required information or falsifying information required may result in denial or revocation of the permit. Payment for a permit by a check that is returned for insufficient funds may result in revocation of the permit. Renewals of permits are required on an annual basis, unless otherwise specified and the same information is required for a renewal permit as for an initial permit.

B. Prior to the approval of an initial permit or the renewal of an existing permit, HCHHS shall inspect the proposed food establishment to determine compliance with state law and local regulations. The applicant or permit holder must pay all applicable fees before a permit is issued.

C. Any person desiring to construct or extensively remodel a food establishment and whenever a fixed existing structure is converted to use as a food establishment, a person must comply with policies and procedures of the Hidalgo County Planning Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures.

D. The person must present to HCHHS-ED: a routing sheet with approval from Planning Department, Environmental Health (OSSF Division), Environmental Compliance, and an approved inspection from Fire Marshal. No permit shall be issued until HCHHS-ED determines by final inspection that all construction, remodeling or conversion has been performed in accordance with the approved plans and specifications.

E. Whenever a food establishment is constructed or extensively remodeled, or whenever a fixed existing establishment is converted to a food establishment, at least one pre-opening inspection shall be made. The purpose of the pre-opening inspection(s) is to ensure compliance with the approved submitted plans, state law, federal regulations, and rules adopted by Hidalgo County.

1. Flea market facilities with a permanent restaurant must obtain a food establishment permit and comply with all requirements A-D.

F. There shall be an annual renewal, unless otherwise specified of a permit issued under these Rules. The renewal process shall be initiated by inspection to assure compliance with federal, state, and local regulations adopted by Hidalgo County.

G. Any false statement made in an application, inspection, and/or maintenance log is a basis for denial or revocation of the permit.

1. A mobile food vendor must present at every inspection a maintenance log of waste disposal and corresponding receipts.
2. The permit-holder shall maintain a log of all daily operational periods to include:
    a. date of operation
    b. time open for business
    c. time closed for business
    d. location of operation.

H. Prior to the issuance of a permit, the applicant or permit holder must pay all applicable fees, which may include a new facility inspection fee. HCHHS shall issue a permit to the applicant only if its inspection reveals that the food establishment complies with requirements of these Rules and state law and regulations.

J. An applicant or permit holder that does not comply with federal, state law and local regulations may be denied a permit or the renewal of a permit.

## V. ADDITIONAL REQUIREMENTS FOR MOBILE FOOD ESTABLISHMENTS. 25 TEX. ADM. CODE § 229.169 HIDALGO COUNTY COMMISSIONERS COURT

A. All mobile food establishments including pushcarts and roadside food vendors, shall be readily identifiable by business name, printed in bold black letters not less than three (3) inches in height, no less than one and one-half (1.5) inches in width, permanently affixed, and prominently displayed upon at least two (2) sides of the units.

B. Prior to the approval of the initial permit or renewal of an existing permit, the applicant or permit holder shall provide written details or plans regarding the systems installed for approved water source, distribution, delivery, and retention and for waste, sewage, and wastewater retention, drainage, and disposal or removal. In addition, a person must comply with policies and procedures of the Hidalgo County Planning Department, Right of Way Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures.

C. The person must present to HCHHS-ED: a routing sheet with approval from Planning Department, Environmental Health (OSSF Division), Environmental Compliance, and an approved inspection from Fire Marshal. No permit shall be issued until HCHHS-ED determines by final inspection that all referenced County departments recommend approval for the mobile food vendor permit according to the proposed specifications listed on the application.

D. A pushcart unit shall not exceed four (4) feet in width, eight (8) feet in length, and eight (8) feet in height including a unit's shade umbrella. In the event of an emergency situation, the unit shall be easily movable, controllable, and maneuverable by one (1)

person when the unit is fully loaded. The bottom of the unit shall be at least one (1) foot from the ground. The unit shall not be self-propelled.

1. The unit must have at least 2 (two) reflective devices on each side to be seen in low-light conditions.
2. The unit must be affiliated with a certified commercial vendor.
3. The operator of the unit must wear a reflective safety vest at all times while the unit is in operation.
4. Shall only sell pre-packaged, sealed foods and/or beverages.
5. Shall not sell or prepare fresh food and/or beverages, hot or cold, on the unit.

E. Live animals shall be excluded from the immediate adjacent onsite or adjoining property within 100 feet of surrounding areas of all mobile food establishments.

F. If toilet facilities are not provided on a mobile food establishment, a toilet facility shall be located on an onsite or adjoining property within 300 feet of the mobile food establishment. Upon application for a permit hereunder, a mobile unit operator must provide HCHHS-ED with written and notarized permission by the owner of the toilet facility for use of restrooms by the permit holder and corresponding schedule every 120 days. A mobile unit may not operate when the facility providing the toilet facilities are not accessible. Restroom facilities must be located within a building and must include a flush-type toilet and hand lavatory supplied with hot and cold running water under pressure. Port-A-Cans or similar facilities are prohibited. This provision does not apply to push cart units (i.e., mobile units that do not engage in any food preparation.).

G. All motor vehicles and/or pull trailers operating as mobile food establishments upon open roads, streets, and highways shall maintain a current Texas motor vehicle inspection sticker and a current Texas motor-vehicle license-plate registration sticker.

1. All mobile units, including push carts, must comply with all Texas Traffic and Safety Laws while the unit is in operation; including Section 285.001 of the Texas Transportation Code, as amended.

H. All mobile vehicles must be commercial grade, generator-powered, and certified to meet all State health standards and Texas Department of Transportation standards.

I. If a mobile vendor is going to utilize electricity of an adjacent commercial business by plugging into an electrical outlet during hours of operation, the mobile vendor must submit a notarized letter of permission for use of electricity by the commercial business owner.

1. The letter should be updated every 120 days and be on file with HCHHS-ED.
2. Outlet must comply with Hidalgo County Fire Marshal, National Fire Protection Association, and International Code Council – International Fire Code rules, regulations, and standards.
3. Outlet must be a standard plug-in type and all cords readily removable.

J. All mobile vehicles shall be readily moveable.

1. All mobile food vendors, including push carts, shall not provide tables/seating, or any additional structures around or adjacent to the unit.

K. All mobile food vendors serving fresh food must do so in single-serve, single-use containers designed for transport.

L. . Flea market establishments allowing the sale of food:

1. Permanent structure food court must have:
    a. Restroom facilities within 300 feet
    b. Plumbing with hot and cold water
    c. Proper waste disposal and
    d. A permanent structure food court shall consist of at least two (2) or more food vendors operating from a permanent or semi-permanent structure (i.e., not readily moveable).
2. Mobile vendor food courts must have:
    a. Restroom facilities within 300 feet
    b. Paved parking space
    c. Electrical outlet and
    d. Waste disposal connection
    e. A mobile vendor food court shall consist of at least two (2) or more mobile food vendors (does not include push carts) operating simultaneously on the same tract or parcel of land.
3. All flea market food vendors regardless of type must be in compliance with Hidalgo County Planning Department, Right of Way Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures.
4. Flea market owners with a permanent or mobile food court must maintain a current Food Manager's Certification at all times of operation.
5. All persons engaged in the sale and/or preparation of food must maintain a current Food Handler's Certification at all times of operation.

M. Mobile Vendor Food Courts

1. Mobile vendor food courts must have:
    a. Paved parking space
    b. Electrical outlet
    c. Waste disposal connection and
    d. Appropriate restroom facilities within 300 feet of mobile food vendor vehicles
    e. A mobile vendor food court shall consist of at least two (2) or more mobile food vendors (does not include push carts) operating simultaneously on the same tract or parcel of land.

## VI. ADDITIONAL REQUIREMENTS

A. As approved by Order by the Hidalgo County Commissioners Court, HCHHS may impose additional requirements for all food establishments, as follows:

*1. Food Manager's Certificate: The owner of the food establishment and the Manager of the food establishment must obtain a Food Manager's Certificate before a permit is issued.*

*2. Food Handler's Certificate: All employees of a food establishment must obtain a Food Handler's Certificate.*

*a. The Food Handler's Class will be conducted at HCHHS as scheduled.*

*b. The individual must call the HCHHS-ED to register for the class.*

*c. Term: The Food Handler's Certificate shall be valid for two (2) years from the date issued.*

*d. Fee: A fee of $20.00 (twenty dollars) shall be paid prior to attending the Food Handler's Class.*

*e. A picture identification card will be issued to each individual that satisfactorily completes all requirements of the Food Handler's Class.*

B. As approved by Order of the Hidalgo County Commissioners Court, HCHHS may impose additional requirements for all mobile food vendors, as follows:

*1. Display: A valid decal shall be displayed by a mobile food vendor.*

*a. Outside of the service window on the left or right side, used in connection with the mobile food vending operation.*

*b. On the trailer fender above the tailgate and license plate of an open, flat bed or enclosed trailer used in connection with the mobile food vending operation.*

*c. At the top right-hand corner on the front of a pushcart, used in connection with the mobile food vending operation.*

*d. Non-transferability: Mobile food vendor permits shall not be transferred or assigned to alternate units and shall be considered revoked should the character of the food vending operation be changed from that specified in the permit.*

*e. Fee: A fee of $5.00 (five dollars) shall be paid for each mobile unit decal in addition to the health permit.*

*2. Term: Mobile food vendor permits shall be valid for one (1) year from the date of issue unless sooner suspended or revoked.*

*a. Mobile food vendors shall be required to submit to a scheduled inspection every 120 days at Hidalgo County Health & Human Services Environmental Division. Failure to submit to scheduled inspection shall be grounds for suspension or revocation of vendor permit.*

*3. Notice: All mobile food vendors shall provide and maintain on file with HCHHS Environmental Division current hours of operation at all times.*

*a. All vendors are subject to random inspection during normal business hours.*

*4. Violation(s): during a scheduled or random inspection*

*a. Verbal and/or written notice to correct violation(s): May be issued at the discretion of the inspector depending on the type and severity of the violation(s).*

*1. 1st violation: Establishment must close for business until violations are corrected.*

*a. These violations must be fixed on-site or within the allotted time specified by the inspector.*

*b. Voluntary disposal of food product may be requested by the inspector.*

*c. Citation may be issued by inspector*

*2. 2nd violation: If vendor does not comply within the allotted time, the permit shall be suspended or revoked until violations are corrected.*

*a. Voluntary disposal of food product may be requested by the inspector.*

*b. Citation may be issued by inspector.*

## VII. APPLICATION AFTER REVOCATION

Whenever a revocation of a permit has become final, the holder of the revoked permit shall make written application for a new permit, and the food establishment may be required to submit plans and be subject to a pre-opening inspection.

## VIII. CRIMINAL PENALTY

A. A person commits an offense if the person operates a food service establishment, retail food store, mobile food unit, or roadside food vendor without a permit required by Hidalgo County. TEX. HEALTH & SAFETY CODE ANN. § 437.016, as amended.

B. An offense under this Section is a Class C Misdemeanor.

C. Each day on which a violation occurs constitutes a separate offense.

## IX. INJUNCTION

The District Attorney of Hidalgo County may sue in district court to enjoin a food establishment, retail food store, mobile food unit, or roadside food vendor from operating without a permit, if one is required. TEX. HEALTH & SAFETY CODE ANN. § 437.015, as amended.

## X. FEES

The following fees are to be paid in connection with applications submitted pursuant to these Rules for the issuance or renewal of a permit.

| Type of Establishment | Fee |
|---|---|
| *Temporary Food Permit (14 days) | $25.00 |
| **Mobile Food Vendor Permit (1 year) | $100.00 |
| Food Establishments with 1 – 10 employees | $100.00 |
| Food Establishments with 11 – 20 employees | $125.00 |
| Food Establishments with 21 or more employees | $150.00 |

*Separate businesses occupying the same booth must purchase individual permits. A business or individual who operates more than one booth at an event must designate the specific location of each booth at the event and must purchase a separate permit for each booth location.

**If a mobile food vendor has more than one (1) mobile unit to conduct the sale of food products, a separate permit must be obtained for each mobile unit.

## XI. ENFORCEMENT

The provisions of these Rules shall be enforced by the Chief Administrative Officer of HCHHS (the CAO) or the CAO's authorized representative. It shall be a violation of these Rules for any person in a food establishment to deny access to the CAO or authorized representatives in the performance of the CAO's duties.

HCHHS employees who are not police officers but who have been trained to enforce the health and safety laws relating to food, water, waste control, general sanitation, or vector control are authorized pursuant to Sections 121.031 and 121.032 of the Texas Health and Safety Code and these Rules by Order of Hidalgo County Commissioners Court, to issue citations for violations occurring in the unincorporated areas of Hidalgo County, including areas in the extraterritorial jurisdiction of a municipality. Such citations must state the name of the person cited, the violation charged, and the time and place the person is required to appear in court.

## XII. SEVERABILITY

If any section, subsection, clause, phrase, or portion of these Rules is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of these Rules.

Environmental Health

Hidalgo County Health & Human Services Department

1304 S. 25th Street Edinburg, TX 78542 Phone (956) 383-0111 Fax (956) 383-7351

# Starting A Food Business in Hidalgo County

This guide is for prospective operators of Food Enterprises ( food establishments, retail food stores, food warehouse, and food processors) operating within the jurisdiction of Hidalgo County. These establishments fall under the regulatory responsibility of Hidalgo County Health and Human Services Department. Guidelines for Farmers markets, Mobile Vendors and temporary Food Events are found at 1304 S 25th St Edinburg, TX 78542, or at http://www.hchd.org/environmentalhealth

Hidalgo County is divided into 5 sections , each having a designated Health Inspector. Your Health Inspector will assist you with questions on pre-opening process for Food Enterprises. Contact the Health Department Plan Review Desk (956) 383-0111 for questions concerning your building plans. Staff is also available to assist with questions on Food manager Certification, Food Handler Registration and application & inspection payments. Call us at (956) 383-0111 to contact your designated Health Inspector or our administrative staff.

Some incorporated cities within Hidalgo County also have contracts for Food Enterprise inspections with HCHHSD. The city offices in the cities will advise you if this is the case where you are operating. Almost all categories of Food Enterprises require approval from HCHHSD.

## Home Preparation of Food Prohibited

Except for those business that meet the requirements of a Cottage Food Industry, home preparation of food for public consumption is prohibited. All food that is to be consumed by the public, whether free or for dale, must be prepared at a permitted establishment that is inspected by federal, state, or local Health Authority.

## Cottage Food Industry

A cottage food production operation is not required to have a Hidalgo County food permit. Before operating a food business, check with other Hidalgo County Departments to determine if there are laws or ordinances, such as zoning, that will affect your business. For information on the Cottage Food Industry visit: http://www.texascottagefoodlaw.com/

## Operating Permits – Food Enterprises

The Food Enterprise application is available at 1) Hidalgo County Health department – Environmental Division located at 1304 S. 25th St Edinburg, TX 78542 2) our website, http://www.hchd.org/environmentalhealth . We recommend you submit a fully completed application and fees one month prior to your anticipated opening date. This gives our staff the needed lead time to process it and schedule any needed pre-opening inspections. Our staff thoroughly reviews each form to ensure accuracy of info provided. Incomplete applications will delay your approval.

Food permits are in effect for one year from the first of the month of the month it was issue, and are renewable each year, thereafter, when the appropriate fee is paid and the enterprise remains in compliance with Health Dept regulations.

## Operating Permit: Posting Requirements

A permit holder or person in charge of a Food Enterprise shall post a permit required by Hidalgo County Code in a prominent public location clearly visible to the general public and to patrons. A permit is clearly visible to the general public and to patrons if it is:

1. Posted in the front window of the enterprise within 5 feet of the front door; or
2. Posted in a display case mounted on the outside front wall of the enterprise within 5 feet of the front door; or
3. Posted on the drive – through menu board of a drive – through enterprise, in addition to posting in locations 1 and 2 of this section; or
4. In the Food enterprise is operated in a space that prevents posting the permit as required in 1 and 3, the permit shall be posted in the initial patron contact area, on the menu board or counter of the enterprise, or in a location determined by the Health Authority to ensure proper notice to the general public and patrons.

## Permit Fees

1 to 10 employees $ 100.00

11 - 20 employees $ 125.00

21 or more employees $150.00

Temporary Food permit $ 25.00

Mobile Vendor $ 100.00

**Health Department Plan Notes**

1. **Refrigeration** All refrigerated units are to hold foods at or below 41 F.
2. **Restrooms** If the facility has only carry -out or seating for less than 20 people, and less than 10 employees, then only one employee restroom is required by the Health Dept. Two restrooms are required if alcohol is served on the premises or more than 20 seats are provided. Each restroom must have a hand sink with hot (at least 100º) and cold water, mechanical air ventilation to the outside, and a solid, self closing door. Restrooms may not ope directly into a kitchen. The total number of restrooms for a childcare facility is dependent on the "minimum standards" of the Texas Dept. of Family and Protective Services as it relates to childcare.
3. **Sinks A. Hand washing Sinks:**Shall be located to allow convenient use by employees in food preparation, food dispensing, ware wash areas, and any wait station where ice is dispensed, bar area or in a walk-in where meat is cut or trimmed. At least one hand sink will be required; additional, separate hand sinks may also be required. Small kitchens with small prep and ware washing in close proximity may be allowed to use one hand sink to serve both activities. Other hand sinks must be associated with restrooms. Provide at least 12" tall splash guards if a hand sink is located near food prep, open food, ice, or clean food contact surfaces. Otherwise, the hand sink must have at least 18" lateral separation from these. A sign or poster that notifies food employees to wash their hands shall be provided to all hand washing sinks and be clarity visible. A small, swinging door (as in a bar area) could separate a hand sink from a work area, otherwise no doors separating hand sink from work areas.

Each sink must be supplied with hot (100º) and cold water, soap and disposable towels. Childcare facilities must have hot water in the diaper changing area and kitchen. If plans do not provide sufficient hand sinks to meet the requirements of the facility you will be asked to provide a revised plan with additional hand sinks.

**B. Ware Wash Area:**A commercial dishwasher or 3 compartment sink is required in most cases. Dish machines must be able to effectively sanitize all equipment and utensils. They must dispense a chemical sanitizer or provide a final rinse of at least 180º F. (single, stationary rack machines are required to reach 165º in the sanitize cycle), Test strips are required. Above-the-counter dish machines are required to have type II vent-hood.

Were washing sinks shall be of sufficient size to immerse the largest piece of equipment. Cold and hot (100º minimum) water under pressure delivered through a mixing valve shall be provided. Provide at least 2 integral drain board and a mobile dish cart. Drying racks or shelves will aid in adequately air drying all wares. Facilities with very limited ware washing and using disposable containers may request a variance to install a 2 compartment sink (example: convenience store). These sinks are required to have a drain board.

**C. Solid Waste:**Dumpster and grease barrels shall rest on a machine laid or concrete pad. These containers must have a tight fitting lids and drain plugs in place.

**D. Outdoor Cooking facilities:** barbeque pits or smokers shall be enclose, and if screened in, at least 1/16" mesh screen is required. They shall rest on a concrete or asphalt pad. The meat may only be placed on the smoker; no food prep allowed in this enclosure. Any seasoning, cutting, etc. must take place inside the establishment. Outdoor bars and wait stations will be approved on a case by case basis by the dept.

**E. Water and Sewer Systems:** All private on site sewage facilities and wells serving a new Food Enterprise, an exclusively remodeled Food Enterprise, or a Food Enterprise coming under new ownership must meet current standards. These systems are required to be evaluated with respect to weather the system (a) meets current standards and (b) is adequate for the proposed use.

Contact the following agencies to ensure your system is adequate.

Environmental Health Division (956) 383-0111 and 0112

**F. Food Contact Surfaces:** Stainless steel, Formica, polished marble, corian, machined stone, approved ceramics or plastics may be used for food contact surfaces.

**Hidalgo County Food Enterprise Food Handler Registration**

Food handler registration is required for Food Enterprise employees.

At the time of your annual permit renewal Food Operators are notified to provide a list of all employees and shall indicate which are registered with Hidalgo County either as a Food Handler or Food Manager.

We offer classroom classes in English and Spanish.

**Exemptions**.

1. A nonprofit organization that serves food only to members of the organization;
2. A food processing plant that is inspected at least once a week by a state or federal food sanitation inspector or that only stores prepackaged food that is not potentially hazardous;
3. A mobile food establishment that offers only prepackaged food, if a certified food manager is in charged at a central preparation facility that supplies the products for the vending machine or mobile food establishment;
4. A Temporary Event;

## Hidalgo County Food Enterprise Food Manager Registration

A Food Manager Certificate is recognition that a person has received training in food sanitation.

The Hidalgo County requires the majority of permitted Food Enterprises in Hidalgo County to have one employee to be currently registered as a Certified Food Manager.

## Exemptions

1. A Food Enterprise that provides only beverages or prepackaged food that is not a potentially hazardous food.
2. A nonprofit organization that serves food only to members of the organization;
3. A food processing plant that is inspected at least once each week by a state or federal food sanitation inspector or that only stores prepackaged food that is not potentially hazardous.
4. A Mobile Food Establishment that offers only prepackaged food, if a certified Food Manager (CFM) is in charge at a Central Preparation Facility that supplies the products for the vending machines or Mobile Food Establishment.
5. A Temporary Event.

Hidalgo County Health & Human Services Department

Environmental Division

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http://www.hchd.org/index.html

# Application for **Mobile Food Vendors** Permit

**NOTE:** This application must be filled out completely. **INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED.** Applications for a permit to operate does not guarantee that a permit will be granted. Permit approval is based upon the establishment or mobile food unit's compliance with state and local Health requirements. **MOBILE UNITS MUST BE PRESENT TO ISSUE PERMIT.**

**CHECK ALL THAT APPLY:** This mobile food vendor will operate within: ( ) Hidalgo County ( ) Other _____.

**Mobile Vendor Business Name::**_____
_____.

**Mobile Vendor Owner:**_____
_____**Phone:**_____.

**Mobile Vendor Responsibility Party:**_____
**Phone:**_____.

Residence Address:_____
City:_____ State:_____ Zip Code:_____.

Date of Birth:_____ Identification Number/State:_____ Number of employees:_____.

E-Mail address (not required):_____ Hours of Operation:_____.

Mail Renewals to:_____
City:_____ State:_____ Zip Code:_____.

Check One: ( ) Proprietorship ( ) Partnership ( ) Corporation

Type of Vendor: ( ) Unrestricted (open food) ( ) Restricted (Prepackaged)

Vehicle: ( ) truck, ( ) Van, ( ) Step-van ( ) Trailer, ( ) Pushcart, ( ) Car, ( ) Other (specify) _____.

Vehicle Make _____
Model_____
Year_____.

Color_____ License Plate # _____
State_____ Zip Code_____.

**Name of Central Preparation Facility (CPF):_____ _____.**

Address_____
City_____ State_____ Zip Code_____.

Phone_____ Owner / Manager's Name _____.

Type of Food to be Sold From Mobile Unit: _____ _____.

Days and Times working at CPF_____ _____.

The mobile food unit must be inspected and have a permit affixed to it. Permit expiration date is indicated on the permit. Annual permit fees are based on the type of operation, and is as follows:

**Hidalgo County**

All Mobile Food Vendor Permits $100.00

Fee payable to Hidalgo County Health and Human Services Department (HCHHSD)

All the information contained in this application is true and correct to the best of the applicant's knowledge and belief. Applicant acknowledges that the permit applied for shall be subject to all provisions of the orders and ordinances of Hidalgo County under which the permit is granted, and shall be subject to all provisions and statues and ruled adopted under the statues of the State of Texas governing food service establishments, retail food stores, mobile food units and roadside food vendors.

_____ _____

Signature of Applicant Date

**Additional Permit Requirements for Mobile Vendors**

County of Hidalgo, Texas

The Information detailed below must be adhered to in addition to the statements made above for Mobile Food Vendors operating within the limits of Hidalgo County. Also, please contact Hidalgo County Planning Department at 956-318-2840 to determine if the site(s) used for vending is/are approved. Hidalgo County Health Department approval does not guarantee approval with other County Departments. These rules ***do not*** apply to the incorporated areas of Hidalgo County (City Limits). If any of the items below are missing from your application your permit may not be issue.

Vendor Staff

□ □ **Proof of Texas sales and use tax permit.** This permit application is available at: **http://www.window.state.tx.us/taxpermit**. For additional questions, call 1-800-252-5555.

□ □ **Itinerary Route.** This itinerary should include locations where sales occur. Your itinerary should be updated on a quarterly basis. For new operators, use your best judgment. A sample route sheet is attached for your convenience. This information may be submitted via fax to the health department if the location/route changes throughout the year.

□ □ **Written Permission to Use restrooms at Work Site.** If the vendor will be at one location for more than two hours, a written agreement shall be submitted to the health authority from a property owner within 300 feet of the mobile food establishment providing permission for use of restroom facilities with flushable toilets during all hours of operation. A copy of this agreement must be kept in the mobile unit for proof. Portable toilets may be accepted with an approved liquid waste hauler contract.

□ □ **Notarized statement from the Owner or Responsible Party of a Central** Preparation facility. These documents (found on pages ) are used to state that the mobile food establishment uses the facility as its base of operation. This statement should also indicate that the central preparation facility has the proper waste water capabilities for the type of food the mobile vendor will be preparing. Not required if owner owns both CPF and mobile unit.

□ □ **Documentation of Central preparation Facility** Use. Mobile vendors are required to document on a log sheet the dates and times that service visits are conducted to the approved CPF. This includes re-stocking your mobile unit, obtaining fresh water and discarding waste water. This log sheet shall be maintain at the CPF and be presented to any health official upon request and during permit renewal. If using an approved liquid waste hauler, copies of trip tickets will be required to be presented during routine inspections and at permit renewal. A sample log sheet has been provided. This item is NOT required during the initial permitting process.

□ □ **Hidalgo County Fire Marshall Department.** Prior to Health Department approval, an Hidalgo County Fire Marshall Inspection must be conducted and passed. If you mobile unit does not require an inspection , the Fire Marshall will notify the Health Department.

**Mobile Vending Unit Physical Inspection Checklist**

- License Plate – Present and current
- Adequate Clean & Waste water Capacities – Waste water tank must be sized with a minimum capacity of 15% larger than potable water tank's capacity.
- Water tank Security – All tanks must be permanently mounted to unit.
- Waste water tank Clean-out Valve – Clean -out valve must be located on the exterior of unit; diameter of clean out must be 1” in diameter or larger and may not be the same size as clean water fill up valve; clean-out valve must be located at height below clean water fill up valve.
- Clean Water tank Fill Valve – Fill valve must be located on exterior of unit; fill valve must be located at height above waste water clean-out valve; fill valve may not be the same size as waste water clean-out valve.
- Hand washing sink – hand wash sink present and available for convenience use.
- Ware Wash Sink – 3 compartment ware wash sink present; fill faucet able to reach all compartment for filling ; compartments capable of holding water; compartments must be large enough to fully submerge all food contact wares requiring regular washing.
- Splash Guard – A splash guard may be required between hand sink and ware washing sink to prevent possible contamination.
- Hot Water Heater – Water heating device present and secured in unit.
- Exterior Openings – All exterior openings such as doors, windows, ans vents must be provided with screening material to prevent pest or contaminant entry.

- Cold Hold Unit – Mechanical cooler/refrigerator present in unit; it is highly recommended that unit is equipped with commercial refrigeration unit; residential refrigeration units often lack the capability to maintain food items at appropriate temperature in mobile unit operating environment.

- Cleanable Surfaces - All interior surfaces must be constructed of smooth, durable, easily cleanable, non-absorbent materials.

- Physical Condition – No conditions present which may pose a risk to food or personal safety. The outdoor walking and driving areas shall be surfaced with concrete, asphalt, or gravel or other materials that have been effectively treated to minimize dust, facilitate maintenance, and prevent muddy conditions.

*This checklist is solely intended to provide guidance in adherence to the Texas Food Establishment Rules. This guidance is not all inclusive of the rules and regulations pertaining to mobile vending units.

## MOBILE FOOD VENDOR RESPONSIBILITIES

1. **NO HOME PREPARED FOOD MAY BE SERVED TO THE PUBLIC.**
2. **THE USE OF EXTERNAL FOOD PREPARATION AND STORAGE EQUIPMENT IS NOT ALLOWED.** All equipment **MUST** be contained within or on the mobile unit and **MUST** be properly enclosed.
3. **REFRIGERATION AND HEATING:** You must have adequate hot and cold food storage facilities to maintain food products at the required temperatures. Hot foods must be held at 135º or above. Cold foods must be stored at 41º or below. Inadequate refrigeration may result in permit suspension.
4. **THERMOMETER:** Metal stem dial thermometers with a range of 0-220ºF and accurate to =/-3ºF must be provided on mobile food units on which food is prepared in order to monitor food temperatures. Locate additional thermometers in all refrigeration units.
5. **LABELING:** All food must have complete and proper labels.
6. **MOBILITY:** The health authority **may prohibit alteration, removal,** attachments, placement or **change** in , under, or upon the mobile food establishment that would **prevent** or **otherwise reduce ready mobility.**
7. **WATER/UTILITIES:** All mobile food units that are required to have water supplies must have properly designed waste water holding tanks of a 15% greater capacity than the hot and cold water supply. The holding tank must be permanently installed in the unit and equipped with a drain valve to empty the tank on the outside of the vehicle. Leaking waste water tanks may result in permit suspension. At no time during operation is the mobile unit to be attached to a water hose or any other permanent water supply. Also, permanent utilities (i.e. gas, electricity) may not be attached to the mobile unit at **ANY** time.
8. **HOT AND COLD WATER:** If the mobile food unit's operation requires hot and cold water, it must be supplied and working at all times during operation. Failure to comply may result in permit suspension.

9. **HANDWASHING:** Soap and towels must be supplied to the hand sink of UNRESTRICTED type operations at all times.
10. **CERTIFIED FOOD MANAGER** / **FOOD HANDLER:** Mobile units are required to have at least (1) food manager certificate and all other employees registered as food handlers within 30 days of employment.

**I have read and understand the items of responsibility listed above, and I agree to comply with all of the requirements.**

_____ _____

Signature of Mobile Food Vending Owner / Operator Date

**MOBILE FOOD VENDING INFORMATION**

**GENERAL INFORMATION**

**RESTRICTED MOBILE FOOD VENDOR** means a Mobile Food Vendor offering only prepackaged food or prepackaged ice cream. A Restricted Vendor will fall under one of three categories:

1. if the vendor is purchasing food, the vendor must provide a copy of the commercial kitchen's Texas Food Manufacture's permit (or Meat Safety Assurance, if applicable) from the Texas Department of State Health Services, or;
2. The vendor is preparing their own food at a commercial kitchen and is an employee of the same kitchen,or;
3. The vendor is leasing space from a commercial kitchen and is **NOT** an employee. The vendor must apply for and obtain a Hidalgo County Health Permit at the leased space location.

**UNRESTRICTED MOBILE FOOD VENDOR** means a Mobile Food Vendor offering food that is packaged or prepared on the mobile unit, including the slicing or peeling of fruits and vegetables.

1. **Permits** for **Mobile Food Vendor** must be obtained before operating within Hidalgo County. Permit applications may be obtained at 1304 S. 25$^{th}$ St. Edinburg, TX 78542. Permits expired annually, one year after the day they are approved, and must be renewed on or before expiration date. An additional permit is required for vendors selling fresh seafood. Call the Texas Parks and

Wildlife Department at (800) 792-1112 for further information. All vehicles must have current State of Texas license plates. Mobile vending units equipped with water and waste water retention tanks must have an agreement with an approved liquid waste hauler. If your unit generates any grease or grease by products will need to have an approved and permitted grease trap / interceptor.

## GENERAL REQUIREMENTS FOR ALL MOBILE VENDING UNITS;

1. **Single service items:** Only disposable place settings are to be given to customers.
2. **Vehicle Construction (excluding pushcart):** The interior of the vehicle must be constructed of smooth, easily cleanable surfaces. The vehicle must be **completely enclosed.** N(No open truck beds; windows must be screened or kept closed.) The vehicle must be equipped with facilities to hold potentially hazardous foods at a temperature either above **135ºF.** Or below **41ºF.** Sterno is not an acceptable means of maintaining food temperatures. **NOTE:** it is a violation to take hot foods, place them in a Styrofoam or igloo-type cooler, and carry the cooler into a building to sell the food.
3. **Ice beds, when used:** No foods may be bedded in ice except for canned drinks and milk cartons. Foods may be placed in a container, and the container must be bedded in the ice. Ice used for this purpose may not be used in beverages and must drain to a **holding tank**, which is of at least 15% greater capacity than the ice beds.
4. **Trash Receptacles:** Must be provided for all mobile units.

## SPECIFIED REQUIREMENTS FOR VARIOUS TYPES OF MOBILE FOOD VENDING UNITS

## PUSHCART

1. **Cart construction:** The cart must be constructed of smooth, easily cleanable surfaces. The cart size is not part of the Health Department approval process. The cart must be equipped with facilities to hold potentially hazardous foods at a temperature either above **135ºF** or below **41ºF. Sterno** is not an acceptable means of maintaining food temperatures. A (small) **trash receptacle** must be provided on the cart. **Ice** used for bedding beverages must drain to a **holding tank**, which is of at least 15% greater capacity than the ice beds.
2. **Types of Food:** With the exception of hot dogs, snow cones or other foods approved by the health authority only **prepackaged** food may be sold from a pushcart. This means that the food must be prepared and wrapped at the approved kitchen facility, then transported to the cart. The prepackaged food must be either individually labeled, or a “blanket label(s)” may be placed on the cart, if the packaged food is handed to the customer by staff. Labels must include the following information:

    1. the name of the item
    2. a list of ingredients in order of predominance
    3. the net weight of the item
    4. the name and address of the product manufactured

3. **Unrestricted Food Carts:**Unrestricted food carts must have clear covers on top and three sides of the preparation area. Unrestricted food carts are also required to have a 3-compartment sink on the unit with hot and cold water supplied under pressure. The unit must be equipped with a retention/holding tank of at least 15% greater capacity than the water supply. The waste water connections must be below fresh water inlets.
4. **Condiments:** Condiments, if provided, must be in covered containers with service utensils or from squeeze or pour-type bottles with lids.
5. **Beverages:** beverages must either be canned or be dispensed from covered containers with spigots or pumps.

## PREPACKAGED FOODS

1. **Description:**All foods sold is prepackaged or pre-wrapped at an approved kitchen.
2. **Beverages:** must either be canned or be dispensed from covered containers with spigots or pumps.
3. **Condiments:** must be in covered containers with service utensils or from squeeze or pour-type bottles with lids.
4. **Type of food allowed:** Only prepackaged food may be sold. The food must be prepared and wrapped at an approved kitchen. Then transported to the unit. The prepackaged food must be either individually labeled, or a “blanket label(s)” may be placed on the cart, if prepackaged food is handed to the customers by staff. Labels must include the following information:
    1. the name of the item;
    2. a list of ingredients in order of predominance
    3. the net weight of the item
    4. the name and address of the product manufacturer.

## FOOT PEDDLERS (restricted Permit)

1. **Description:** All food sold is prepackaged at and prepared at an approve kitchen.
2. **Conveyance:** A specific type of convenience is required (I.e one ice chest or cooler).

    Farmer's market vendors may provide more than one conveyance at approved farmer's market venues only.

3. **Types of food allowed:** See Prepackaged Foods section above.

**FOOD PREPARATION UNRESTRICTED**

1. **Description:** The unit is a complete "Kitchen on wheels." The food may be prepared on the unit and does not need to be prepackaged.
2. **Sinks:** There must be a **three-bay sink** on the unit for utensil washing. A **separate sink for hand washing** is also required. Soap and single use towels (paper towels) must be supplied to the hand washing sink.
3. **Water: Hot** and cold or tempered water, under pressure, must be supplied to all sinks. The water must be supplied from an approved source.
4. **Retention/Holding Tank:** The unit must be equipped with a permanently mounted potable water tank and a retention/holding tank of at least 15% greater capacity that the combines water and ice supply. The waste water connections must be below the fresh water inlet.
5. **Certified Food Manager / Food Handler:** Unrestricted mobile units operating I Hidalgo County are required to have at least (1) food manager certificate and all other employees registered as food handlers within 30 days of employment.

NOTE: The purpose of this document is to provide only basic information and answer commonly asked questions. Call (956) 383-0111 for additional questions.

When your mobile vending unit meets all of the requirements, bring the mobile unit to 1304 S. 25th St Edinburg, TX 78542 in order to have the vehicle inspected. You do not have to bring the unit in with power source for permit inspections. If the unit passes inspection, a permit will be issue. If the unit does not meet the requirements, an additional inspection will be made.

Hidalgo County Health & Human Services Department

Environmental Division

1304 S. 25th Street Edinburg, TX 78542

Phone (956) 383-0111Fax (956) 383-7351

http://www.hchd.org/index.html

DO YOU NEED A TEMPORARY FOOD EVENT PERMIT?

Festivals, parades, celebrations and other special events contribute to the quality of life in Hidalgo County. Most of these events also feature food for sale or distribution. These Temporary Food Events (TFE), such as traveling fairs and carnivals, circuses, multicultural celebrations, special interest fundraisers, restaurant food shows, and other gatherings, have become extremely popular and are held with increasing frequency in our community.

Many of these TFE can involve extensive preparation and processes that include the cooking and advanced preparation of food prior to service. Anytime food is being handled there is a possibility of the food becoming contaminated. Some foods such as raw meats and poultry can be contaminated prior to obtaining them. It is estimated that 76,000,000 cases of food borne illnesses occur every year in the U.S. and there are emerging illnesses and drug resistant bacteria that are increasing the hazards. No one wants to make anyone ill. With this in mind, the Hidalgo County Rules and the Texas Food

Establishment Rules (TFER) provide guidelines for permitting and food safety standards for all food establishments. The Health Department has established procedures that can

assist with the advanced planning and management of TFE. We ask for your support in promoting these food safety practices.

Individuals or organizations are required to obtain a temporary food service permit for any event in which they are offering food for public consumption.

**If you can answer "Yes" to any of the following questions you will need to** obtain a temporary food service permit.

1. Is the general public invited to the event?
2. Can a person other than a member of the organization and their family members or invited guest attend?
3. Have you advertised the event or sold tickets to the general public?
4. Are you serving open food, open container drinks (mixed drinks w/ ice, wine or keg beer) or food that requires refrigeration or to be held hot?

If you have additional questions, contact us at (9560 383-0111

HIDALGO COUNTY HEALTH & HUMAN SERVICES DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1304 S. 25th Ave., Edinburg, Texas 78542
Phone: 956-383-0111 Fax: 956-383-7351

**ELECTRICAL OUTLET AGREEMENT FOR MOBILE FOOD VENDORS***

"If a mobile vendor is going to utilize electricity of an adjacent commercial business by plugging into an electrical outlet during hours of operation, the mobile vendor must submit a notarized letter of permission for use of electricity by the commercial business owner." (Section V.I., Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, Texas)

I, _____, of _____
(Name of electrical outlet owner) (Name of business with electrical outlet)

located at _____
(Address of business)

give permission to _____ of _____
(Name of mobile food vendor) (Name of mobile food vendor business)

to use the above-named business electrical outlet during normal hours of operation:

| Day | Hours____ |
|---|---|
| Monday | _____ |
| Tuesday | _____ |
| Wednesday | _____ |
| Thursday | _____ |
| Friday | _____ |
| Saturday | _____ |
| Sunday | _____ |

_____
(Signature of electrical outlet owner)

***This agreement must be renewed and kept on file with HCHHS-ED every 120 days by the mobile food vendor permit-holder.**

State of Texas
County of Hidalgo

This instrument was acknowledged before me on _____ by _____.
(Date) (Name of electrical outlet owner)

_____
(Signature of Notary Public)

# Daily Operation Log for Mobile Food Vendors in Hidalgo County, Texas

HIDALGO COUNTY HEALTH & HUMAN SERVICES DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1304 S. 25th Ave., Edinburg, Texas 78542
Phone: 956-383-0111 Fax: 956-383-7351

**RESTROOM FACILITY AGREEMENT FOR MOBILE FOOD VENDORS***

"If toilet facilities are not provided on a mobile food establishment, a toilet facility shall be located on an onsite or adjoining property within 300 feet of the mobile food establishment. Upon application for a permit hereunder, a mobile unit operator must provide HCHHS-ED with written and notarized permission by the owner of the toilet facility for use of restrooms by the permit holder and corresponding schedule." (Section V.F., Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, Texas)

I, _____, of _____
(Name of restroom facility owner) (Name of business with restroom facility)

located at _____
(Address of business)

give permission to _____ of _____
(Name of mobile food vendor) (Name of mobile food vendor business)

to use the above-named business restroom facility during normal hours of operation:

| Day | Hours |
|---|---|
| Monday | _____ |
| Tuesday | _____ |
| Wednesday | _____ |
| Thursday | _____ |
| Friday | _____ |
| Saturday | _____ |
| Sunday | _____ |

_____
(Signature of restroom facility owner)

***This agreement must be renewed and kept on file with HCHHS-ED every 120 days by the mobile food vendor permit-holder.**

State of Texas
County of Hidalgo

This instrument was acknowledged before me on _____ by _____.
(Date) (Name of restroom facility owner)

_____
(Signature of Notary Public)

| Daily Operations Log for Mobile Food Vendors in Hidalgo County, Texas | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| Waste Disposal and Maintenance Log for Mobile Food Vendors | | | |
|---|---|---|---|
| **Date of Service** | **Type of Service** | **Name of Service Provider** | **Receipt # (Keep a Copy)** |
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**AI-43330** **Health & Human Services Dept. 9. F.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Eddie Olivarez **Submitted By:** Mike Escaname, HEALTH & HUMAN SERVICES DEPT.

**Department:** HEALTH & HUMAN SERVICES DEPT.

## Information

### CAPTION

Discussion, consideration and approval of the Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, pursuant to Texas Health & Safety Code Ann. Section 437.001 ET Seq., as amended; 25 Texas Administrative Code Section 229.161 - 229171, 229173 - 229.175, as amended; 25 Texas Administrative Code section 229.373, as amended.

### BACKGROUND

01/21/14 - AI-42623 - Rules Update
03/05/14 - AI-43329 - Public Hearing

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:**

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

No budgetary impact

## Attachments

legal
rules

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 04:36 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 02:52 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Mike Escaname Started On: 02/25/2014

Final Approval Date: 02/28/2014

## Mike Escaname

**From:** Brenda Salazar <brenda.salazar@hchd.org>
**Sent:** Thursday, February 13, 2014 10:56 AM
**To:** 'Mike Escaname'
**Subject:** FW: Food Vendor Policy Final

As per legal counsel's response, below, the policy is ready for presentation at Commissioners Court.

Brenda G. Salazar
Public Health Technician III
Hidalgo County Health & Human Services
1304 S. 25th Ave.
Edinburg, Texas 78542
956-383-6221, Ext. 7343

-----Original Message-----
**From:** Savannah Gonzalez [mailto:savannah.gonzalez@da.co.hidalgo.tx.us]
**Sent:** Thursday, February 13, 2014 10:09 AM
**To:** 'Brenda Salazar'
**Subject:** RE: Food Vendor Policy Final

Brenda, if no changes have been made since my last approval, this is ready to go. Thanks,

**Savannah Gonzalez**
*Assistant Criminal District Attorney*
County Affairs Section
**Office of Criminal District Attorney**
Hidalgo County, Texas
100 N Closner Rm 303
Edinburg, TX 78539
(956) 318-2313 ext. 3767
(956) 318-2079 FAX
savannah.gonzalez@da.co.hidalgo.tx.us

**********
The information contained in this e-mail may be 1.SUBJECT TO THE ATTORNEY-CLIENT PRIVILEGE; 2.ATTORNEY WORK PRODUCT; and/or 3.CONFIDENTIAL. It is intended only for the individual or entity designated above. Any distribution, copying, or use of or reliance upon the information contained in this e-mail by or to anyone other than the recipient designated above by the sender is unauthorized and strictly prohibited. **IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE ADVISE THE SENDER BY REPLY E-MAIL TO savannah.gonzalez@da.co.hidalgo.tx.us AND DELETE THE COMMUNICATION.**
**********

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**From:** Brenda Salazar [mailto:brenda.salazar@hchd.org]
**Sent:** Thursday, February 13, 2014 9:35 AM
**To:** savannah.gonzalez@da.co.hidalgo.tx.us
**Cc:** 'Mike Escaname'
**Subject:** Food Vendor Policy Final

Good morning, Savannah,

Attached is the final draft ready for presentation to Commissioners Court for your final review and approval. FYI, no changes have been made to the content of the document, only the formatting, since your last review on 12-18-2013.

Thank you!

Brenda G. Salazar
Public Health Technician III
Hidalgo County Health & Human Services
1304 S. 25th Ave.
Edinburg, Texas 78542
956-383-6221, Ext. 7343

## REFERENCE

Form FE.1.1 "How to start a food business in Hidalgo County"
Form FE.1.2 "Food vendor permit application"
Form FE.1.3 "What kind of food permit do I need?"
Form FE.1.4 "Obtaining a temporary food vendor permit"
Form FE.1.5 "Restroom Agreement for Mobile Food Vendors"
Form FE.1.6 "Electricity Agreement for Mobile Food Vendors"
Form FE.1.7 "Requirements for a food vendor"
Form FE 1.8 "Daily activity log"
Form FE 1.9 "Maintenance and Service log"

## PREFACE

Hidalgo County Health & Human Services - Environmental Division (HCHHS-ED) is authorized to enforce state and federal laws and rules adopted under state law concerning food service establishments, retail food stores, mobile food units, and roadside food vendors, pursuant to Texas Health and Safety Code Section 437.002(a), as amended. TEX. HEALTH & SAFETY CODE ANN. §§ 437.001 *et seq*., as amended. 25 TEX. ADM. CODE §§ 229.161-229.171,229.173 -229.175, as amended. HCHHS is a participating agency in the FDA Voluntary National Retail Food Regulatory Program Standards, 2011.

To enforce state law and rules adopted under state law, Hidalgo County by order may require food service establishments, retail food stores, mobile food units, and roadside food vendors in unincorporated areas of the county, including areas in the extraterritorial jurisdiction of a municipality, to obtain a permit from the County. TEX. HEALTH & SAFETY CODE ANN. §437.003, as amended. 25 TEX. ADM. CODE § 229.373, as amended.

Pursuant to Texas Administration Code Title 25, Chapter 229, Section 169(a)(1), Hidalgo County may impose additional requirements to protect against health hazards related to the conduct of food establishments as a mobile operation, may prohibit the sale of some or all potentially hazardous food, and when no health hazard will result, may waive or modify certain requirements relating to physical facilities. 25 TEX. ADM. CODE § 229 .169( a)( 1), as amended.

## I. PURPOSE

The purpose of these Rules is to safeguard public health and better assure that consumers obtain food that is safe, unadulterated, and honestly presented by establishing uniform monitoring for food establishments in the unincorporated areas of

Hidalgo County, including areas in the extraterritorial jurisdiction of a municipality, or a municipality that does not have a health department.

## II. DEFINITIONS

Words and phrases used in these Rules shall have the meanings provided in Health and Safety Code, Chapter 437 and Texas Administrative Code Title 25, Chapter 229. TEX. HEALTH & SAFETY CODE ANN. §§ 437.001 *et seq*., as amended. 25 TEX. ADM. CODE §§ 229.161 -229.171, and 229.173 -229.175, as amended.

## III. PERMITS

A. No person shall operate a food establishment in unincorporated areas of the county, including areas in the extraterritorial jurisdiction of a municipality, without having a permit issued by HCHHS-ED. Permits are not transferable from one person to another or from one location to another location, except as permitted by these Rules. A valid permit must be posted in or on every food establishment in a conspicuous place. Only a person who complies with the requirements of state law and regulations and these Rules shall be entitled to a permit.

B. A food establishment operated solely by a nonprofit organization is exempt from the permitting requirement of these Rules, but is not exempt from compliance with state law and regulations. An organization claiming exemption from these Rules as a nonprofit organization shall provide HCHHS-ED with such documentation as HCHHS-ED deems necessary to prove the establishment's current tax-exempt status as a nonprofit organization.

C. An establishment is not a food establishment for the purposes of these Rules if it is excluded from the definition of food establishment under Texas Administrative Code Title 25, Chapter 229, Section 162(40), as amended. 25 TEX. ADM. CODE § 229.162(40), as amended.

D. If an inspector finds that a food vendor is operating without a valid permit issued by HCHHS-ED, the food establishment will be closed for business until the permit is appropriately acquired by the vendor at HCHHS-ED.

1. 1st violation: Verbal and/or written notice to begin permitting process before next operational period.
   a. Establishment/vendor must close for business until permit is obtained.
2. 2nd violation: If same vendor continues to operate without a valid permit
   a. Vendor will be closed for business until valid permit is obtained.
   b. Voluntary destruction of food product will be requested by inspector. (Texas Food Establishment Rules 229.161 -175) and
   c. Citation issued to vendor

## IV. ISSUANCE OF PERMIT

A. Any person desiring to operate a food establishment must make a written application for a permit on forms provided by HCHHS. The application must contain the name and address of each applicant, the location and type of the proposed food establishment, the applicable fee, and signature of applicant(s). An incomplete application will not be processed, even if initially accepted. Failure to provide all required information or falsifying information required may result in denial or revocation of the permit. Payment for a permit by a check that is returned for insufficient funds may result in revocation of the permit. Renewals of permits are required on an annual basis, unless otherwise specified and the same information is required for a renewal permit as for an initial permit.

B. Prior to the approval of an initial permit or the renewal of an existing permit, HCHHS shall inspect the proposed food establishment to determine compliance with state law and local regulations. The applicant or permit holder must pay all applicable fees before a permit is issued.

C. Any person desiring to construct or extensively remodel a food establishment and whenever a fixed existing structure is converted to use as a food establishment, a person must comply with policies and procedures of the Hidalgo County Planning Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures.

D. The person must present to HCHHS-ED: a routing sheet with approval from Planning Department, Environmental Health (OSSF Division), Environmental Compliance, and an approved inspection from Fire Marshal. No permit shall be issued until HCHHS-ED determines by final inspection that all construction, remodeling or conversion has been performed in accordance with the approved plans and specifications.

E. Whenever a food establishment is constructed or extensively remodeled, or whenever a fixed existing establishment is converted to a food establishment, at least one pre-opening inspection shall be made. The purpose of the pre-opening inspection(s) is to ensure compliance with the approved submitted plans, state law, federal regulations, and rules adopted by Hidalgo County.

1. Flea market facilities with a permanent restaurant must obtain a food establishment permit and comply with all requirements A-D.

F. There shall be an annual renewal, unless otherwise specified of a permit issued under these Rules. The renewal process shall be initiated by inspection to assure compliance with federal, state, and local regulations adopted by Hidalgo County.

G. Any false statement made in an application, inspection, and/or maintenance log is a basis for denial or revocation of the permit.

1. A mobile food vendor must present at every inspection a maintenance log of waste disposal and corresponding receipts.
2. The permit-holder shall maintain a log of all daily operational periods to include:
    a. date of operation
    b. time open for business
    c. time closed for business
    d. location of operation.

H. Prior to the issuance of a permit, the applicant or permit holder must pay all applicable fees, which may include a new facility inspection fee. HCHHS shall issue a permit to the applicant only if its inspection reveals that the food establishment complies with requirements of these Rules and state law and regulations.

J. An applicant or permit holder that does not comply with federal, state law and local regulations may be denied a permit or the renewal of a permit.

## V. ADDITIONAL REQUIREMENTS FOR MOBILE FOOD ESTABLISHMENTS. 25 TEX. ADM. CODE § 229.169 HIDALGO COUNTY COMMISSIONERS COURT

A. All mobile food establishments including pushcarts and roadside food vendors, shall be readily identifiable by business name, printed in bold black letters not less than three (3) inches in height, no less than one and one-half (1.5) inches in width, permanently affixed, and prominently displayed upon at least two (2) sides of the units.

B. Prior to the approval of the initial permit or renewal of an existing permit, the applicant or permit holder shall provide written details or plans regarding the systems installed for approved water source, distribution, delivery, and retention and for waste, sewage, and wastewater retention, drainage, and disposal or removal. In addition, a person must comply with policies and procedures of the Hidalgo County Planning Department, Right of Way Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures.

C. The person must present to HCHHS-ED: a routing sheet with approval from Planning Department, Environmental Health (OSSF Division), Environmental Compliance, and an approved inspection from Fire Marshal. No permit shall be issued until HCHHS-ED determines by final inspection that all referenced County departments recommend approval for the mobile food vendor permit according to the proposed specifications listed on the application.

D. A pushcart unit shall not exceed four (4) feet in width, eight (8) feet in length, and eight (8) feet in height including a unit's shade umbrella. In the event of an emergency situation, the unit shall be easily movable, controllable, and maneuverable by one (1)

person when the unit is fully loaded. The bottom of the unit shall be at least one (1) foot from the ground. The unit shall not be self-propelled.

1. The unit must have at least 2 (two) reflective devices on each side to be seen in low-light conditions.
2. The unit must be affiliated with a certified commercial vendor.
3. The operator of the unit must wear a reflective safety vest at all times while the unit is in operation.
4. Shall only sell pre-packaged, sealed foods and/or beverages.
5. Shall not sell or prepare fresh food and/or beverages, hot or cold, on the unit.

E. Live animals shall be excluded from the immediate adjacent onsite or adjoining property within 100 feet of surrounding areas of all mobile food establishments.

F. If toilet facilities are not provided on a mobile food establishment, a toilet facility shall be located on an onsite or adjoining property within 300 feet of the mobile food establishment. Upon application for a permit hereunder, a mobile unit operator must provide HCHHS-ED with written and notarized permission by the owner of the toilet facility for use of restrooms by the permit holder and corresponding schedule every 120 days. A mobile unit may not operate when the facility providing the toilet facilities are not accessible. Restroom facilities must be located within a building and must include a flush-type toilet and hand lavatory supplied with hot and cold running water under pressure. Port-A-Cans or similar facilities are prohibited. This provision does not apply to push cart units (i.e., mobile units that do not engage in any food preparation.).

G. All motor vehicles and/or pull trailers operating as mobile food establishments upon open roads, streets, and highways shall maintain a current Texas motor vehicle inspection sticker and a current Texas motor-vehicle license-plate registration sticker.

1. All mobile units, including push carts, must comply with all Texas Traffic and Safety Laws while the unit is in operation; including Section 285.001 of the Texas Transportation Code, as amended.

H. All mobile vehicles must be commercial grade, generator-powered, and certified to meet all State health standards and Texas Department of Transportation standards.

I. If a mobile vendor is going to utilize electricity of an adjacent commercial business by plugging into an electrical outlet during hours of operation, the mobile vendor must submit a notarized letter of permission for use of electricity by the commercial business owner.

1. The letter should be updated every 120 days and be on file with HCHHS-ED.
2. Outlet must comply with Hidalgo County Fire Marshal, National Fire Protection Association, and International Code Council – International Fire Code rules, regulations, and standards.
3. Outlet must be a standard plug-in type and all cords readily removable.

J. All mobile vehicles shall be readily moveable.

1. All mobile food vendors, including push carts, shall not provide tables/seating, or any additional structures around or adjacent to the unit.

K. All mobile food vendors serving fresh food must do so in single-serve, single-use containers designed for transport.

L. . Flea market establishments allowing the sale of food:

1. Permanent structure food court must have:
    a. Restroom facilities within 300 feet
    b. Plumbing with hot and cold water
    c. Proper waste disposal and
    d. A permanent structure food court shall consist of at least two (2) or more food vendors operating from a permanent or semi-permanent structure (i.e., not readily moveable).
2. Mobile vendor food courts must have:
    a. Restroom facilities within 300 feet
    b. Paved parking space
    c. Electrical outlet and
    d. Waste disposal connection
    e. A mobile vendor food court shall consist of at least two (2) or more mobile food vendors (does not include push carts) operating simultaneously on the same tract or parcel of land.
3. All flea market food vendors regardless of type must be in compliance with Hidalgo County Planning Department, Right of Way Department, the Office of Environmental Compliance, and the Office of the Fire Marshal including but not limited to the On-Site Sewage Facility (OSSF) policies and procedures.
4. Flea market owners with a permanent or mobile food court must maintain a current Food Manager's Certification at all times of operation.
5. All persons engaged in the sale and/or preparation of food must maintain a current Food Handler's Certification at all times of operation.

M. Mobile Vendor Food Courts

1. Mobile vendor food courts must have:
    a. Paved parking space
    b. Electrical outlet
    c. Waste disposal connection and
    d. Appropriate restroom facilities within 300 feet of mobile food vendor vehicles
    e. A mobile vendor food court shall consist of at least two (2) or more mobile food vendors (does not include push carts) operating simultaneously on the same tract or parcel of land.

## VI. ADDITIONAL REQUIREMENTS

A. As approved by Order by the Hidalgo County Commissioners Court, HCHHS may impose additional requirements for all food establishments, as follows:

*1. Food Manager's Certificate: The owner of the food establishment and the Manager of the food establishment must obtain a Food Manager's Certificate before a permit is issued.*

*2. Food Handler's Certificate: All employees of a food establishment must obtain a Food Handler's Certificate.*

*a. The Food Handler's Class will be conducted at HCHHS as scheduled.*

*b. The individual must call the HCHHS-ED to register for the class.*

*c. Term: The Food Handler's Certificate shall be valid for two (2) years from the date issued.*

*d. Fee: A fee of $20.00 (twenty dollars) shall be paid prior to attending the Food Handler's Class.*

*e. A picture identification card will be issued to each individual that satisfactorily completes all requirements of the Food Handler's Class.*

B. As approved by Order of the Hidalgo County Commissioners Court, HCHHS may impose additional requirements for all mobile food vendors, as follows:

*1. Display: A valid decal shall be displayed by a mobile food vendor.*

*a. Outside of the service window on the left or right side, used in connection with the mobile food vending operation.*

*b. On the trailer fender above the tailgate and license plate of an open, flat bed or enclosed trailer used in connection with the mobile food vending operation.*

*c. At the top right-hand corner on the front of a pushcart, used in connection with the mobile food vending operation.*

*d. Non-transferability: Mobile food vendor permits shall not be transferred or assigned to alternate units and shall be considered revoked should the character of the food vending operation be changed from that specified in the permit.*

*e. Fee: A fee of $5.00 (five dollars) shall be paid for each mobile unit decal in addition to the health permit.*

*2. Term: Mobile food vendor permits shall be valid for one (1) year from the date of issue unless sooner suspended or revoked.*

*a. Mobile food vendors shall be required to submit to a scheduled inspection every 120 days at Hidalgo County Health & Human Services Environmental Division. Failure to submit to scheduled inspection shall be grounds for suspension or revocation of vendor permit.*

*3. Notice: All mobile food vendors shall provide and maintain on file with HCHHS Environmental Division current hours of operation at all times.*

*a. All vendors are subject to random inspection during normal business hours.*

*4. Violation(s): during a scheduled or random inspection*

*a. Verbal and/or written notice to correct violation(s): May be issued at the discretion of the inspector depending on the type and severity of the violation(s).*

*1. 1st violation: Establishment must close for business until violations are corrected.*

*a. These violations must be fixed on-site or within the allotted time specified by the inspector.*

*b. Voluntary disposal of food product may be requested by the inspector.*

*c. Citation may be issued by inspector*

*2. 2nd violation: If vendor does not comply within the allotted time, the permit shall be suspended or revoked until violations are corrected.*

*a. Voluntary disposal of food product may be requested by the inspector.*

*b. Citation may be issued by inspector.*

## VII. APPLICATION AFTER REVOCATION

Whenever a revocation of a permit has become final, the holder of the revoked permit shall make written application for a new permit, and the food establishment may be required to submit plans and be subject to a pre-opening inspection.

## VIII. CRIMINAL PENALTY

A. A person commits an offense if the person operates a food service establishment, retail food store, mobile food unit, or roadside food vendor without a permit required by Hidalgo County. TEX. HEALTH & SAFETY CODE ANN. § 437.016, as amended.

B. An offense under this Section is a Class C Misdemeanor.

C. Each day on which a violation occurs constitutes a separate offense.

## IX. INJUNCTION

The District Attorney of Hidalgo County may sue in district court to enjoin a food establishment, retail food store, mobile food unit, or roadside food vendor from operating without a permit, if one is required. TEX. HEALTH & SAFETY CODE ANN. § 437.015, as amended.

## X. FEES

The following fees are to be paid in connection with applications submitted pursuant to these Rules for the issuance or renewal of a permit.

| Type of Establishment | Fee |
|---|---|
| *Temporary Food Permit (14 days) | $25.00 |
| **Mobile Food Vendor Permit (1 year) | $100.00 |
| Food Establishments with 1 – 10 employees | $100.00 |
| Food Establishments with 11 – 20 employees | $125.00 |
| Food Establishments with 21 or more employees | $150.00 |

*Separate businesses occupying the same booth must purchase individual permits. A business or individual who operates more than one booth at an event must designate the specific location of each booth at the event and must purchase a separate permit for each booth location.

**If a mobile food vendor has more than one (1) mobile unit to conduct the sale of food products, a separate permit must be obtained for each mobile unit.

## XI. ENFORCEMENT

The provisions of these Rules shall be enforced by the Chief Administrative Officer of HCHHS (the CAO) or the CAO's authorized representative. It shall be a violation of these Rules for any person in a food establishment to deny access to the CAO or authorized representatives in the performance of the CAO's duties.

HCHHS employees who are not police officers but who have been trained to enforce the health and safety laws relating to food, water, waste control, general sanitation, or vector control are authorized pursuant to Sections 121.031 and 121.032 of the Texas Health and Safety Code and these Rules by Order of Hidalgo County Commissioners Court, to issue citations for violations occurring in the unincorporated areas of Hidalgo County, including areas in the extraterritorial jurisdiction of a municipality. Such citations must state the name of the person cited, the violation charged, and the time and place the person is required to appear in court.

## XII. SEVERABILITY

If any section, subsection, clause, phrase, or portion of these Rules is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of these Rules.

Environmental Health

Hidalgo County Health & Human Services Department

1304 S. 25th Street Edinburg, TX 78542 Phone (956) 383-0111 Fax (956) 383-7351

# Starting A Food Business in Hidalgo County

This guide is for prospective operators of Food Enterprises ( food establishments, retail food stores, food warehouse, and food processors) operating within the jurisdiction of Hidalgo County. These establishments fall under the regulatory responsibility of Hidalgo County Health and Human Services Department. Guidelines for Farmers markets, Mobile Vendors and temporary Food Events are found at 1304 S 25th St Edinburg, TX 78542, or at http://www.hchd.org/environmentalhealth

Hidalgo County is divided into 5 sections , each having a designated Health Inspector. Your Health Inspector will assist you with questions on pre-opening process for Food Enterprises. Contact the Health Department Plan Review Desk (956) 383-0111 for questions concerning your building plans. Staff is also available to assist with questions on Food manager Certification, Food Handler Registration and application & inspection payments. Call us at (956) 383-0111 to contact your designated Health Inspector or our administrative staff.

Some incorporated cities within Hidalgo County also have contracts for Food Enterprise inspections with HCHHSD. The city offices in the cities will advise you if this is the case where you are operating. Almost all categories of Food Enterprises require approval from HCHHSD.

## Home Preparation of Food Prohibited

Except for those business that meet the requirements of a Cottage Food Industry, home preparation of food for public consumption is prohibited. All food that is to be consumed by the public, whether free or for dale, must be prepared at a permitted establishment that is inspected by federal, state, or local Health Authority.

## Cottage Food Industry

A cottage food production operation is not required to have a Hidalgo County food permit. Before operating a food business, check with other Hidalgo County Departments to determine if there are laws or ordinances, such as zoning, that will affect your business. For information on the Cottage Food Industry visit: http://www.texascottagefoodlaw.com/

## Operating Permits – Food Enterprises

The Food Enterprise application is available at 1) Hidalgo County Health department – Environmental Division located at 1304 S. 25th St Edinburg, TX 78542 2) our website, http://www.hchd.org/environmentalhealth . We recommend you submit a fully completed application and fees one month prior to your anticipated opening date. This gives our staff the needed lead time to process it and schedule any needed pre-opening inspections. Our staff thoroughly reviews each form to ensure accuracy of info provided. Incomplete applications will delay your approval.

Food permits are in effect for one year from the first of the month of the month it was issue, and are renewable each year, thereafter, when the appropriate fee is paid and the enterprise remains in compliance with Health Dept regulations.

## Operating Permit: Posting Requirements

A permit holder or person in charge of a Food Enterprise shall post a permit required by Hidalgo County Code in a prominent public location clearly visible to the general public and to patrons. A permit is clearly visible to the general public and to patrons if it is:

1. Posted in the front window of the enterprise within 5 feet of the front door; or
2. Posted in a display case mounted on the outside front wall of the enterprise within 5 feet of the front door; or
3. Posted on the drive – through menu board of a drive – through enterprise, in addition to posting in locations 1 and 2 of this section; or
4. In the Food enterprise is operated in a space that prevents posting the permit as required in 1 and 3, the permit shall be posted in the initial patron contact area, on the menu board or counter of the enterprise, or in a location determined by the Health Authority to ensure proper notice to the general public and patrons.

## Permit Fees

1 to 10 employees $ 100.00

11 - 20 employees $ 125.00

21 or more employees $150.00

Temporary Food permit $ 25.00

Mobile Vendor $ 100.00

**Health Department Plan Notes**

1. **Refrigeration** All refrigerated units are to hold foods at or below 41 F.
2. **Restrooms** If the facility has only carry -out or seating for less than 20 people, and less than 10 employees, then only one employee restroom is required by the Health Dept. Two restrooms are required if alcohol is served on the premises or more than 20 seats are provided. Each restroom must have a hand sink with hot (at least 100º) and cold water, mechanical air ventilation to the outside, and a solid, self closing door. Restrooms may not ope directly into a kitchen. The total number of restrooms for a childcare facility is dependent on the "minimum standards" of the Texas Dept. of Family and Protective Services as it relates to childcare.
3. **Sinks A. Hand washing Sinks:**Shall be located to allow convenient use by employees in food preparation, food dispensing, ware wash areas, and any wait station where ice is dispensed, bar area or in a walk-in where meat is cut or trimmed. At least one hand sink will be required; additional, separate hand sinks may also be required. Small kitchens with small prep and ware washing in close proximity may be allowed to use one hand sink to serve both activities. Other hand sinks must be associated with restrooms. Provide at least 12" tall splash guards if a hand sink is located near food prep, open food, ice, or clean food contact surfaces. Otherwise, the hand sink must have at least 18" lateral separation from these. A sign or poster that notifies food employees to wash their hands shall be provided to all hand washing sinks and be clarity visible. A small, swinging door (as in a bar area) could separate a hand sink from a work area, otherwise no doors separating hand sink from work areas.

Each sink must be supplied with hot (100º) and cold water, soap and disposable towels. Childcare facilities must have hot water in the diaper changing area and kitchen. If plans do not provide sufficient hand sinks to meet the requirements of the facility you will be asked to provide a revised plan with additional hand sinks.

**B. Ware Wash Area:**A commercial dishwasher or 3 compartment sink is required in most cases. Dish machines must be able to effectively sanitize all equipment and utensils. They must dispense a chemical sanitizer or provide a final rinse of at least 180º F. (single, stationary rack machines are required to reach 165º in the sanitize cycle), Test strips are required. Above-the-counter dish machines are required to have type II vent-hood.

Were washing sinks shall be of sufficient size to immerse the largest piece of equipment. Cold and hot (100º minimum) water under pressure delivered through a mixing valve shall be provided. Provide at least 2 integral drain board and a mobile dish cart. Drying racks or shelves will aid in adequately air drying all wares. Facilities with very limited ware washing and using disposable containers may request a variance to install a 2 compartment sink (example: convenience store). These sinks are required to have a drain board.

**C. Solid Waste:**Dumpster and grease barrels shall rest on a machine laid or concrete pad. These containers must have a tight fitting lids and drain plugs in place.

**D. Outdoor Cooking facilities:** barbeque pits or smokers shall be enclose, and if screened in, at least 1/16" mesh screen is required. They shall rest on a concrete or asphalt pad. The meat may only be placed on the smoker; no food prep allowed in this enclosure. Any seasoning, cutting, etc. must take place inside the establishment. Outdoor bars and wait stations will be approved on a case by case basis by the dept.

**E. Water and Sewer Systems:** All private on site sewage facilities and wells serving a new Food Enterprise, an exclusively remodeled Food Enterprise, or a Food Enterprise coming under new ownership must meet current standards. These systems are required to be evaluated with respect to weather the system (a) meets current standards and (b) is adequate for the proposed use.

Contact the following agencies to ensure your system is adequate.

Environmental Health Division (956) 383-0111 and 0112

**F. Food Contact Surfaces:** Stainless steel, Formica, polished marble, corian, machined stone, approved ceramics or plastics may be used for food contact surfaces.

**Hidalgo County Food Enterprise Food Handler Registration**

Food handler registration is required for Food Enterprise employees.

At the time of your annual permit renewal Food Operators are notified to provide a list of all employees and shall indicate which are registered with Hidalgo County either as a Food Handler or Food Manager.

We offer classroom classes in English and Spanish.

**Exemptions**.

1. A nonprofit organization that serves food only to members of the organization;
2. A food processing plant that is inspected at least once a week by a state or federal food sanitation inspector or that only stores prepackaged food that is not potentially hazardous;
3. A mobile food establishment that offers only prepackaged food, if a certified food manager is in charged at a central preparation facility that supplies the products for the vending machine or mobile food establishment;
4. A Temporary Event;

## Hidalgo County Food Enterprise Food Manager Registration

A Food Manager Certificate is recognition that a person has received training in food sanitation.

The Hidalgo County requires the majority of permitted Food Enterprises in Hidalgo County to have one employee to be currently registered as a Certified Food Manager.

## Exemptions

1. A Food Enterprise that provides only beverages or prepackaged food that is not a potentially hazardous food.
2. A nonprofit organization that serves food only to members of the organization;
3. A food processing plant that is inspected at least once each week by a state or federal food sanitation inspector or that only stores prepackaged food that is not potentially hazardous.
4. A Mobile Food Establishment that offers only prepackaged food, if a certified Food Manager (CFM) is in charge at a Central Preparation Facility that supplies the products for the vending machines or Mobile Food Establishment.
5. A Temporary Event.

Hidalgo County Health & Human Services Department

Environmental Division

1304 S. 25th Street Edinburg, TX 78542

Phone (956) 383-0111 Fax (956) 383-7351

http://www.hchd.org/index.html

# Application for **Mobile Food Vendors** Permit

**NOTE:** This application must be filled out completely. **INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED.** Applications for a permit to operate does not guarantee that a permit will be granted. Permit approval is based upon the establishment or mobile food unit's compliance with state and local Health requirements. **MOBILE UNITS MUST BE PRESENT TO ISSUE PERMIT.**

**CHECK ALL THAT APPLY:** This mobile food vendor will operate within: ( ) Hidalgo County ( ) Other _____.

**Mobile Vendor Business Name::**_____
_____.

**Mobile Vendor Owner:**_____
_____**Phone:**_____.

**Mobile Vendor Responsibility Party:**_____
**Phone:**_____.

Residence Address:_____
City:_____ State:_____ Zip Code:_____.

Date of Birth:_____ Identification Number/State:_____ Number of employees:_____.

E-Mail address (not required):_____ Hours of Operation:_____.

Mail Renewals to:_____
City:_____ State:_____ Zip Code:_____.

Check One: ( ) Proprietorship ( ) Partnership ( ) Corporation

Type of Vendor: ( ) Unrestricted (open food) ( ) Restricted (Prepackaged)

Vehicle: ( ) truck, ( ) Van, ( ) Step-van ( ) Trailer, ( ) Pushcart, ( ) Car, ( ) Other (specify) _____.

Vehicle Make _____
Model_____
Year_____.

Color_____ License Plate # _____
State_____ Zip Code_____.

**Name of Central Preparation Facility (CPF):_____ _____.**

Address_____
City_____ State_____ Zip Code_____.

Phone_____ Owner / Manager's Name _____.

Type of Food to be Sold From Mobile Unit: _____ _____.

Days and Times working at CPF_____ _____.

The mobile food unit must be inspected and have a permit affixed to it. Permit expiration date is indicated on the permit. Annual permit fees are based on the type of operation, and is as follows:

**Hidalgo County**

All Mobile Food Vendor Permits $100.00

Fee payable to Hidalgo County Health and Human Services Department (HCHHSD)

All the information contained in this application is true and correct to the best of the applicant's knowledge and belief. Applicant acknowledges that the permit applied for shall be subject to all provisions of the orders and ordinances of Hidalgo County under which the permit is granted, and shall be subject to all provisions and statues and ruled adopted under the statues of the State of Texas governing food service establishments, retail food stores, mobile food units and roadside food vendors.

_____ _____

Signature of Applicant Date

**Additional Permit Requirements for Mobile Vendors**

County of Hidalgo, Texas

The Information detailed below must be adhered to in addition to the statements made above for Mobile Food Vendors operating within the limits of Hidalgo County. Also, please contact Hidalgo County Planning Department at 956-318-2840 to determine if the site(s) used for vending is/are approved. Hidalgo County Health Department approval does not guarantee approval with other County Departments. These rules ***do not*** apply to the incorporated areas of Hidalgo County (City Limits). If any of the items below are missing from your application your permit may not be issue.

Vendor Staff

□ □ **Proof of Texas sales and use tax permit.** This permit application is available at: **http://www.window.state.tx.us/taxpermit**. For additional questions, call 1-800-252-5555.

□ □ **Itinerary Route.** This itinerary should include locations where sales occur. Your itinerary should be updated on a quarterly basis. For new operators, use your best judgment. A sample route sheet is attached for your convenience. This information may be submitted via fax to the health department if the location/route changes throughout the year.

□ □ **Written Permission to Use restrooms at Work Site.** If the vendor will be at one location for more than two hours, a written agreement shall be submitted to the health authority from a property owner within 300 feet of the mobile food establishment providing permission for use of restroom facilities with flushable toilets during all hours of operation. A copy of this agreement must be kept in the mobile unit for proof. Portable toilets may be accepted with an approved liquid waste hauler contract.

□ □ **Notarized statement from the Owner or Responsible Party of a Central** Preparation facility. These documents (found on pages ) are used to state that the mobile food establishment uses the facility as its base of operation. This statement should also indicate that the central preparation facility has the proper waste water capabilities for the type of food the mobile vendor will be preparing. Not required if owner owns both CPF and mobile unit.

□ □ **Documentation of Central preparation Facility** Use. Mobile vendors are required to document on a log sheet the dates and times that service visits are conducted to the approved CPF. This includes re-stocking your mobile unit, obtaining fresh water and discarding waste water. This log sheet shall be maintain at the CPF and be presented to any health official upon request and during permit renewal. If using an approved liquid waste hauler, copies of trip tickets will be required to be presented during routine inspections and at permit renewal. A sample log sheet has been provided. This item is NOT required during the initial permitting process.

□ □ **Hidalgo County Fire Marshall Department.** Prior to Health Department approval, an Hidalgo County Fire Marshall Inspection must be conducted and passed. If you mobile unit does not require an inspection , the Fire Marshall will notify the Health Department.

**Mobile Vending Unit Physical Inspection Checklist**

- License Plate – Present and current
- Adequate Clean & Waste water Capacities – Waste water tank must be sized with a minimum capacity of 15% larger than potable water tank's capacity.
- Water tank Security – All tanks must be permanently mounted to unit.
- Waste water tank Clean-out Valve – Clean -out valve must be located on the exterior of unit; diameter of clean out must be 1” in diameter or larger and may not be the same size as clean water fill up valve; clean-out valve must be located at height below clean water fill up valve.
- Clean Water tank Fill Valve – Fill valve must be located on exterior of unit; fill valve must be located at height above waste water clean-out valve; fill valve may not be the same size as waste water clean-out valve.
- Hand washing sink – hand wash sink present and available for convenience use.
- Ware Wash Sink – 3 compartment ware wash sink present; fill faucet able to reach all compartment for filling ; compartments capable of holding water; compartments must be large enough to fully submerge all food contact wares requiring regular washing.
- Splash Guard – A splash guard may be required between hand sink and ware washing sink to prevent possible contamination.
- Hot Water Heater – Water heating device present and secured in unit.
- Exterior Openings – All exterior openings such as doors, windows, ans vents must be provided with screening material to prevent pest or contaminant entry.

- Cold Hold Unit – Mechanical cooler/refrigerator present in unit; it is highly recommended that unit is equipped with commercial refrigeration unit; residential refrigeration units often lack the capability to maintain food items at appropriate temperature in mobile unit operating environment.

- Cleanable Surfaces - All interior surfaces must be constructed of smooth, durable, easily cleanable, non-absorbent materials.

- Physical Condition – No conditions present which may pose a risk to food or personal safety. The outdoor walking and driving areas shall be surfaced with concrete, asphalt, or gravel or other materials that have been effectively treated to minimize dust, facilitate maintenance, and prevent muddy conditions.

*This checklist is solely intended to provide guidance in adherence to the Texas Food Establishment Rules. This guidance is not all inclusive of the rules and regulations pertaining to mobile vending units.

## MOBILE FOOD VENDOR RESPONSIBILITIES

1. **NO HOME PREPARED FOOD MAY BE SERVED TO THE PUBLIC.**
2. **THE USE OF EXTERNAL FOOD PREPARATION AND STORAGE EQUIPMENT IS NOT ALLOWED.** All equipment **MUST** be contained within or on the mobile unit and **MUST** be properly enclosed.
3. **REFRIGERATION AND HEATING:** You must have adequate hot and cold food storage facilities to maintain food products at the required temperatures. Hot foods must be held at 135º or above. Cold foods must be stored at 41º or below. Inadequate refrigeration may result in permit suspension.
4. **THERMOMETER:** Metal stem dial thermometers with a range of 0-220ºF and accurate to =/-3ºF must be provided on mobile food units on which food is prepared in order to monitor food temperatures. Locate additional thermometers in all refrigeration units.
5. **LABELING:** All food must have complete and proper labels.
6. **MOBILITY:** The health authority **may prohibit alteration, removal,** attachments, placement or **change** in , under, or upon the mobile food establishment that would **prevent** or **otherwise reduce ready mobility.**
7. **WATER/UTILITIES:** All mobile food units that are required to have water supplies must have properly designed waste water holding tanks of a 15% greater capacity than the hot and cold water supply. The holding tank must be permanently installed in the unit and equipped with a drain valve to empty the tank on the outside of the vehicle. Leaking waste water tanks may result in permit suspension. At no time during operation is the mobile unit to be attached to a water hose or any other permanent water supply. Also, permanent utilities (i.e. gas, electricity) may not be attached to the mobile unit at **ANY** time.
8. **HOT AND COLD WATER:** If the mobile food unit's operation requires hot and cold water, it must be supplied and working at all times during operation. Failure to comply may result in permit suspension.

9. **HANDWASHING:** Soap and towels must be supplied to the hand sink of UNRESTRICTED type operations at all times.
10. **CERTIFIED FOOD MANAGER** / **FOOD HANDLER:** Mobile units are required to have at least (1) food manager certificate and all other employees registered as food handlers within 30 days of employment.

**I have read and understand the items of responsibility listed above, and I agree to comply with all of the requirements.**

_____ _____

Signature of Mobile Food Vending Owner / Operator Date

**MOBILE FOOD VENDING INFORMATION**

**GENERAL INFORMATION**

**RESTRICTED MOBILE FOOD VENDOR** means a Mobile Food Vendor offering only prepackaged food or prepackaged ice cream. A Restricted Vendor will fall under one of three categories:

1. if the vendor is purchasing food, the vendor must provide a copy of the commercial kitchen's Texas Food Manufacture's permit (or Meat Safety Assurance, if applicable) from the Texas Department of State Health Services, or;
2. The vendor is preparing their own food at a commercial kitchen and is an employee of the same kitchen,or;
3. The vendor is leasing space from a commercial kitchen and is **NOT** an employee. The vendor must apply for and obtain a Hidalgo County Health Permit at the leased space location.

**UNRESTRICTED MOBILE FOOD VENDOR** means a Mobile Food Vendor offering food that is packaged or prepared on the mobile unit, including the slicing or peeling of fruits and vegetables.

1. **Permits** for **Mobile Food Vendor** must be obtained before operating within Hidalgo County. Permit applications may be obtained at 1304 S. 25$^{th}$ St. Edinburg, TX 78542. Permits expired annually, one year after the day they are approved, and must be renewed on or before expiration date. An additional permit is required for vendors selling fresh seafood. Call the Texas Parks and

Wildlife Department at (800) 792-1112 for further information. All vehicles must have current State of Texas license plates. Mobile vending units equipped with water and waste water retention tanks must have an agreement with an approved liquid waste hauler. If your unit generates any grease or grease by products will need to have an approved and permitted grease trap / interceptor.

## GENERAL REQUIREMENTS FOR ALL MOBILE VENDING UNITS;

1. **Single service items:** Only disposable place settings are to be given to customers.
2. **Vehicle Construction (excluding pushcart):** The interior of the vehicle must be constructed of smooth, easily cleanable surfaces. The vehicle must be **completely enclosed.** N(No open truck beds; windows must be screened or kept closed.) The vehicle must be equipped with facilities to hold potentially hazardous foods at a temperature either above **135ºF.** Or below **41ºF.** Sterno is not an acceptable means of maintaining food temperatures. **NOTE:** it is a violation to take hot foods, place them in a Styrofoam or igloo-type cooler, and carry the cooler into a building to sell the food.
3. **Ice beds, when used:** No foods may be bedded in ice except for canned drinks and milk cartons. Foods may be placed in a container, and the container must be bedded in the ice. Ice used for this purpose may not be used in beverages and must drain to a **holding tank**, which is of at least 15% greater capacity than the ice beds.
4. **Trash Receptacles:** Must be provided for all mobile units.

## SPECIFIED REQUIREMENTS FOR VARIOUS TYPES OF MOBILE FOOD VENDING UNITS

## PUSHCART

1. **Cart construction:** The cart must be constructed of smooth, easily cleanable surfaces. The cart size is not part of the Health Department approval process. The cart must be equipped with facilities to hold potentially hazardous foods at a temperature either above **135ºF** or below **41ºF. Sterno** is not an acceptable means of maintaining food temperatures. A (small) **trash receptacle** must be provided on the cart. **Ice** used for bedding beverages must drain to a **holding tank**, which is of at least 15% greater capacity than the ice beds.
2. **Types of Food:** With the exception of hot dogs, snow cones or other foods approved by the health authority only **prepackaged** food may be sold from a pushcart. This means that the food must be prepared and wrapped at the approved kitchen facility, then transported to the cart. The prepackaged food must be either individually labeled, or a “blanket label(s)” may be placed on the cart, if the packaged food is handed to the customer by staff. Labels must include the following information:

    1. the name of the item
    2. a list of ingredients in order of predominance
    3. the net weight of the item
    4. the name and address of the product manufactured

3. **Unrestricted Food Carts:**Unrestricted food carts must have clear covers on top and three sides of the preparation area. Unrestricted food carts are also required to have a 3-compartment sink on the unit with hot and cold water supplied under pressure. The unit must be equipped with a retention/holding tank of at least 15% greater capacity than the water supply. The waste water connections must be below fresh water inlets.
4. **Condiments:** Condiments, if provided, must be in covered containers with service utensils or from squeeze or pour-type bottles with lids.
5. **Beverages:** beverages must either be canned or be dispensed from covered containers with spigots or pumps.

## PREPACKAGED FOODS

1. **Description:**All foods sold is prepackaged or pre-wrapped at an approved kitchen.
2. **Beverages:** must either be canned or be dispensed from covered containers with spigots or pumps.
3. **Condiments:** must be in covered containers with service utensils or from squeeze or pour-type bottles with lids.
4. **Type of food allowed:** Only prepackaged food may be sold. The food must be prepared and wrapped at an approved kitchen. Then transported to the unit. The prepackaged food must be either individually labeled, or a “blanket label(s)” may be placed on the cart, if prepackaged food is handed to the customers by staff. Labels must include the following information:
    1. the name of the item;
    2. a list of ingredients in order of predominance
    3. the net weight of the item
    4. the name and address of the product manufacturer.

## FOOT PEDDLERS (restricted Permit)

1. **Description:** All food sold is prepackaged at and prepared at an approve kitchen.
2. **Conveyance:** A specific type of convenience is required (I.e one ice chest or cooler).

    Farmer's market vendors may provide more than one conveyance at approved farmer's market venues only.

3. **Types of food allowed:** See Prepackaged Foods section above.

**FOOD PREPARATION UNRESTRICTED**

1. **Description:** The unit is a complete "Kitchen on wheels." The food may be prepared on the unit and does not need to be prepackaged.
2. **Sinks:** There must be a **three-bay sink** on the unit for utensil washing. A **separate sink for hand washing** is also required. Soap and single use towels (paper towels) must be supplied to the hand washing sink.
3. **Water: Hot** and cold or tempered water, under pressure, must be supplied to all sinks. The water must be supplied from an approved source.
4. **Retention/Holding Tank:** The unit must be equipped with a permanently mounted potable water tank and a retention/holding tank of at least 15% greater capacity that the combines water and ice supply. The waste water connections must be below the fresh water inlet.
5. **Certified Food Manager / Food Handler:** Unrestricted mobile units operating I Hidalgo County are required to have at least (1) food manager certificate and all other employees registered as food handlers within 30 days of employment.

NOTE: The purpose of this document is to provide only basic information and answer commonly asked questions. Call (956) 383-0111 for additional questions.

When your mobile vending unit meets all of the requirements, bring the mobile unit to 1304 S. 25th St Edinburg, TX 78542 in order to have the vehicle inspected. You do not have to bring the unit in with power source for permit inspections. If the unit passes inspection, a permit will be issue. If the unit does not meet the requirements, an additional inspection will be made.

Hidalgo County Health & Human Services Department

Environmental Division

1304 S. 25th Street Edinburg, TX 78542

Phone (956) 383-0111Fax (956) 383-7351

http://www.hchd.org/index.html

DO YOU NEED A TEMPORARY FOOD EVENT PERMIT?

Festivals, parades, celebrations and other special events contribute to the quality of life in Hidalgo County. Most of these events also feature food for sale or distribution. These Temporary Food Events (TFE), such as traveling fairs and carnivals, circuses, multicultural celebrations, special interest fundraisers, restaurant food shows, and other gatherings, have become extremely popular and are held with increasing frequency in our community.

Many of these TFE can involve extensive preparation and processes that include the cooking and advanced preparation of food prior to service. Anytime food is being handled there is a possibility of the food becoming contaminated. Some foods such as raw meats and poultry can be contaminated prior to obtaining them. It is estimated that 76,000,000 cases of food borne illnesses occur every year in the U.S. and there are emerging illnesses and drug resistant bacteria that are increasing the hazards. No one wants to make anyone ill. With this in mind, the Hidalgo County Rules and the Texas Food

Establishment Rules (TFER) provide guidelines for permitting and food safety standards for all food establishments. The Health Department has established procedures that can

assist with the advanced planning and management of TFE. We ask for your support in promoting these food safety practices.

Individuals or organizations are required to obtain a temporary food service permit for any event in which they are offering food for public consumption.

**If you can answer "Yes" to any of the following questions you will need to** obtain a temporary food service permit.

1. Is the general public invited to the event?
2. Can a person other than a member of the organization and their family members or invited guest attend?
3. Have you advertised the event or sold tickets to the general public?
4. Are you serving open food, open container drinks (mixed drinks w/ ice, wine or keg beer) or food that requires refrigeration or to be held hot?

If you have additional questions, contact us at (9560 383-0111

HIDALGO COUNTY HEALTH & HUMAN SERVICES DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1304 S. 25th Ave., Edinburg, Texas 78542
Phone: 956-383-0111 Fax: 956-383-7351

**ELECTRICAL OUTLET AGREEMENT FOR MOBILE FOOD VENDORS***

"If a mobile vendor is going to utilize electricity of an adjacent commercial business by plugging into an electrical outlet during hours of operation, the mobile vendor must submit a notarized letter of permission for use of electricity by the commercial business owner." (Section V.I., Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, Texas)

I, _____, of _____
(Name of electrical outlet owner) (Name of business with electrical outlet)

located at _____
(Address of business)

give permission to _____ of _____
(Name of mobile food vendor) (Name of mobile food vendor business)

to use the above-named business electrical outlet during normal hours of operation:

| Day | Hours____ |
|---|---|
| Monday | _____ |
| Tuesday | _____ |
| Wednesday | _____ |
| Thursday | _____ |
| Friday | _____ |
| Saturday | _____ |
| Sunday | _____ |

_____
(Signature of electrical outlet owner)

***This agreement must be renewed and kept on file with HCHHS-ED every 120 days by the mobile food vendor permit-holder.**

State of Texas
County of Hidalgo

This instrument was acknowledged before me on _____ by _____.
(Date) (Name of electrical outlet owner)

_____
(Signature of Notary Public)

# Daily Operation Log for Mobile Food Vendors in Hidalgo County, Texas

HIDALGO COUNTY HEALTH & HUMAN SERVICES DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
1304 S. 25th Ave., Edinburg, Texas 78542
Phone: 956-383-0111 Fax: 956-383-7351

**RESTROOM FACILITY AGREEMENT FOR MOBILE FOOD VENDORS***

"If toilet facilities are not provided on a mobile food establishment, a toilet facility shall be located on an onsite or adjoining property within 300 feet of the mobile food establishment. Upon application for a permit hereunder, a mobile unit operator must provide HCHHS-ED with written and notarized permission by the owner of the toilet facility for use of restrooms by the permit holder and corresponding schedule." (Section V.F., Rules for Regulation of Food Establishments in the Unincorporated Areas of Hidalgo County, Texas)

I, _____, of _____
(Name of restroom facility owner) (Name of business with restroom facility)

located at _____
(Address of business)

give permission to _____ of _____
(Name of mobile food vendor) (Name of mobile food vendor business)

to use the above-named business restroom facility during normal hours of operation:

| Day | Hours |
|---|---|
| Monday | _____ |
| Tuesday | _____ |
| Wednesday | _____ |
| Thursday | _____ |
| Friday | _____ |
| Saturday | _____ |
| Sunday | _____ |

_____
(Signature of restroom facility owner)

***This agreement must be renewed and kept on file with HCHHS-ED every 120 days by the mobile food vendor permit-holder.**

State of Texas
County of Hidalgo

This instrument was acknowledged before me on _____ by _____.
(Date) (Name of restroom facility owner)

_____
(Signature of Notary Public)

| Daily Operations Log for Mobile Food Vendors in Hidalgo County, Texas | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| Waste Disposal and Maintenance Log for Mobile Food Vendors | | | |
|---|---|---|---|
| **Date of Service** | **Type of Service** | **Name of Service Provider** | **Receipt # (Keep a Copy)** |
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**AI-43218** **Adult Probation 10. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Rodolfo Perez, ADULT PROBATION

**Department:** ADULT PROBATION

## Information

**CAPTION**

Applications for Adult Probation for the 2015 Grant Cycle of the Criminal Justice Division (CJD) of the Governor's Office

1. DWI Court Program
a. Permission to apply for the continuation of the DWI Court Program
b. Permission to be appointed the Authorized Official for the DWI Court Program

2. Veterans Treatment Court Program
a. Permission to apply for the continuation of the Veterans Treatment Court Program
b. Permission to be appointed the Authorized Official for the Veterans Treatment Court Program

3. Monitoring Compliance for High Risk Offenders Program
a. Permission to apply for the continuation of the Monitoring Compliance for High Risk Offenders Program
b. Permission to be appointed the Authorized Official for the Monitoring Compliance for High Risk Offenders Program

4. Prostitution Prevention Court Program
a. Permission to apply for the continuation of the Prostitution Prevention Court Program
b. Permission to be appointed the Authorized Official for the Prostitution Prevention Court Program

**BACKGROUND**

## Fiscal Impact

**FISCAL YEAR:** **ACCT. #:**

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Permission to apply for several grants under the Adult Probation dept.

## Attachments

DWI Court RFA

DWI Resolution

Vet Court RFA

Vet court resolution

Monitoring Compliance for High Risk Offenders Program RFA

Monitoring compliance resolution
Prostitution Prevention Program RFA
Prostitution prevention resolution

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/18/2014 04:16 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 10:46 AM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Rodolfo Perez Started On: 02/17/2014 05:58 PM

Final Approval Date: 02/28/2014

# Request for Applications – Specialty Court Programs

The Criminal Justice Division (CJD) of the Governor's Office is soliciting competitive applications for projects that support eligible specialty court programs during the state fiscal year 2015 grant cycle.

**Purpose:** The purpose of the program is to support specialty courts as defined in Chapter 121 of the Texas Government Code, which incorporate the essential characteristics of:

1) Family Drug Court Programs from Chapter 122 of the Texas Government Code;
2) Drug Court Programs from Chapter 123 of the Texas Government Code;
3) Veterans Court Programs from Chapter 124 of the Texas Government Code; or
4) Mental Health Court Programs from Chapter 125 of the Texas Government Code.

**A aila le Funding:** This solicitation may be funded from the following state funding sources:

1) Texas Code of Criminal Procedure, Section 102.0178 authorizes state funding for the purpose of funding drug courts and designates CJD as the administering agency. Funds received under this article are deposited to the credit of the specialty court account in the general revenue fund.
2) Texas Code of Criminal Procedure, Section 102.056 and Texas Government Code, Section 772.006 authorize the use of state funds to support criminal justice projects including specialty courts, and designate CJD as the administering agency. The source of funding is a biennial appropriation by the Texas Legislature from funds collected through court costs and fees. All awards are subject to the availability of funds appropriated by the Texas Legislature for the 2014-2015 biennium.

**Funding Le els**:
Minimum: $10,000
Maximum: None
Match Requirement: None

**Standards:** Grantees must comply with the standards applicable to this funding source cited in the *Texas Administrative Code* (1 TAC Chapter 3), and all statutes, requirements, and guidelines applicable to this funding.

**Pro i itions:** Grant funds may not be used to support the following services, activities, and costs:

1) inherently religious activities such as prayer, worship, religious instruction, or proselytization;
2) lobbying;
3) vehicles or equipment for government agencies that are for general agency use;
4) weapons, ammunition, explosives or military vehicles;
5) admission fees or tickets to any amusement park, recreational activity or sporting event;
6) promotional gifts;
7) food, meals, beverages, or other refreshments;
8) membership dues for individuals;
9) any expense or service that is readily available at no cost to the grant project or that is provided by other federal, state or local funds (e.g., supplanting);
10) fundraising;
11) construction, remodeling or renovation;
12) medical services;
13) transportation, lodging, per diem or any related costs for participants when grant funds are used to develop and conduct training; and
14) any other prohibition imposed by federal, state, or local law.

# Request for Applications – Specialty Court Programs

**Eligi le Applicants:**
1) Counties; and
2) Judicial districts

**Eligi ility Re uirements:**
1) Pursuant to Texas Government Code, Section 123.006, counties with populations of more than 200,000 are required to establish a drug court.
2) The court must be registered with CJD as required in the Texas Government Code, Section 121.002, and must maintain a current registration throughout the grant period.
3) The court must also be registered with the Texas Department of State Health Services, Clinical Management for Behavioral Health Services database. Information about registration procedures may be accessed at http://www.dshs.state.tx.us/cmbhs/default.shtm.
4) The presiding judge of a drug court funded through this program must be an active judge holding elective office, an associate judge or magistrate assigned to preside over drug court, or a retired judge available as a sitting judge.
5) Any portion of fees collected from program participants and retained by the grantee is considered generated program income (GPI) and must be applied to the grant through a grant adjustment. GPI must be used to offset project costs and must be expended prior to seeking payment from CJD.
6) In order for an applicant to be eligible, the county (or counties) in which the applicant is located must have a 90% average on both adult and juvenile criminal history dispositions to the Texas Department of Public Safety for calendar years 2008 through 2012. This requirement must be met by August 1, 2014.
7) Applicants must have a DUNS (Data Universal Numbering System) number assigned to its agency (to request a DUNS number, go to http://fedgov.dnb.com/webform/displayHomePage.do).
8) Eligible applicants must be registered in the federal System for Award Management (SAM) database located at https://www.sam.gov/portal/public/SAM/ and maintain an active registration throughout the grant period.

**Pro ect Period:** Grant-funded projects must begin on or after September 1, 2014, and expire on or before August 31, 2015.

**Application Process:** Applicants must access CJD's grant management website at https://egrants.governor.state.tx.us to register and apply for funding.

**Pre erences:** Preference will be given to mandated drug courts under Texas Government Code, Section 123.006.

**Closing Date or Receipt o Applications:** All applications must be submitted via CJD's eGrants website on or before February 28, 2014.

**Selection Process:** Applications will be reviewed and prioritized by the Specialty Courts Advisory Council (Council) who will make funding recommendations to CJD. CJD will make all final funding decisions based on eligibility, Council recommendations, reasonableness, availability of funding, and cost-effectiveness. A copy of the scoring elements to be used by the Council is available under the Forms link at https://egrants.governor.state.tx.us/updates.aspx.

**Contact Person**: If additional information is needed, contact the eGrants help desk at egrants@governor.state.tx.us or (512) 463-1919.

**Hidalgo County DWI Court**

**WHEREAS,** The Hidalgo County Commissioner's Court finds it in the best interest of the citizens of Hidalgo County, that the Hidalgo County DWI Court be operated for the 2015 year; and

**WHEREAS,** The Hidalgo County Commissioner's Court agrees that in the event of loss or misuse of the Criminal Justice Division funds, Hidalgo County Commissioner's Court assures that the funds will be returned to the Criminal Justice Division in full.

**WHEREAS,** Hidalgo County Commissioner's Court designates Rodolfo Perez, Assistant Director of the Hidalgo County CSCD as the grantee's authorized official. The authorized official is given the power to apply for, accept, reject, alter or terminate the grant on behalf of the applicant agency.

**NOW THEREFORE, BE IT RESOLVED** that Hidalgo County Commissioner's Court approves submission of the grant application for the Hidalgo County DWI Court to the Office of the Governor, Criminal Justice Division.

Signed by:

County Judge

Passed and Approved this 4th day of March 2014

Grant Number: _2413905_____

# Request for Applications – Specialty Court Programs

The Criminal Justice Division (CJD) of the Governor's Office is soliciting competitive applications for projects that support eligible specialty court programs during the state fiscal year 2015 grant cycle.

**Purpose:** The purpose of the program is to support specialty courts as defined in Chapter 121 of the Texas Government Code, which incorporate the essential characteristics of:

1) Family Drug Court Programs from Chapter 122 of the Texas Government Code;
2) Drug Court Programs from Chapter 123 of the Texas Government Code;
3) Veterans Court Programs from Chapter 124 of the Texas Government Code; or
4) Mental Health Court Programs from Chapter 125 of the Texas Government Code.

**A aila le Funding:** This solicitation may be funded from the following state funding sources:

1) Texas Code of Criminal Procedure, Section 102.0178 authorizes state funding for the purpose of funding drug courts and designates CJD as the administering agency. Funds received under this article are deposited to the credit of the specialty court account in the general revenue fund.
2) Texas Code of Criminal Procedure, Section 102.056 and Texas Government Code, Section 772.006 authorize the use of state funds to support criminal justice projects including specialty courts, and designate CJD as the administering agency. The source of funding is a biennial appropriation by the Texas Legislature from funds collected through court costs and fees. All awards are subject to the availability of funds appropriated by the Texas Legislature for the 2014-2015 biennium.

**Funding Le els**:
Minimum: $10,000
Maximum: None
Match Requirement: None

**Standards:** Grantees must comply with the standards applicable to this funding source cited in the *Texas Administrative Code* (1 TAC Chapter 3), and all statutes, requirements, and guidelines applicable to this funding.

**Pro i itions:** Grant funds may not be used to support the following services, activities, and costs:

1) inherently religious activities such as prayer, worship, religious instruction, or proselytization;
2) lobbying;
3) vehicles or equipment for government agencies that are for general agency use;
4) weapons, ammunition, explosives or military vehicles;
5) admission fees or tickets to any amusement park, recreational activity or sporting event;
6) promotional gifts;
7) food, meals, beverages, or other refreshments;
8) membership dues for individuals;
9) any expense or service that is readily available at no cost to the grant project or that is provided by other federal, state or local funds (e.g., supplanting);
10) fundraising;
11) construction, remodeling or renovation;
12) medical services;
13) transportation, lodging, per diem or any related costs for participants when grant funds are used to develop and conduct training; and
14) any other prohibition imposed by federal, state, or local law.

# Request for Applications – Specialty Court Programs

**Eligi le Applicants:**
1) Counties; and
2) Judicial districts

**Eligi ility Re uirements:**
1) Pursuant to Texas Government Code, Section 123.006, counties with populations of more than 200,000 are required to establish a drug court.
2) The court must be registered with CJD as required in the Texas Government Code, Section 121.002, and must maintain a current registration throughout the grant period.
3) The court must also be registered with the Texas Department of State Health Services, Clinical Management for Behavioral Health Services database. Information about registration procedures may be accessed at http://www.dshs.state.tx.us/cmbhs/default.shtm.
4) The presiding judge of a drug court funded through this program must be an active judge holding elective office, an associate judge or magistrate assigned to preside over drug court, or a retired judge available as a sitting judge.
5) Any portion of fees collected from program participants and retained by the grantee is considered generated program income (GPI) and must be applied to the grant through a grant adjustment. GPI must be used to offset project costs and must be expended prior to seeking payment from CJD.
6) In order for an applicant to be eligible, the county (or counties) in which the applicant is located must have a 90% average on both adult and juvenile criminal history dispositions to the Texas Department of Public Safety for calendar years 2008 through 2012. This requirement must be met by August 1, 2014.
7) Applicants must have a DUNS (Data Universal Numbering System) number assigned to its agency (to request a DUNS number, go to http://fedgov.dnb.com/webform/displayHomePage.do).
8) Eligible applicants must be registered in the federal System for Award Management (SAM) database located at https://www.sam.gov/portal/public/SAM/ and maintain an active registration throughout the grant period.

**Pro ect Period:** Grant-funded projects must begin on or after September 1, 2014, and expire on or before August 31, 2015.

**Application Process:** Applicants must access CJD's grant management website at https://egrants.governor.state.tx.us to register and apply for funding.

**Pre erences:** Preference will be given to mandated drug courts under Texas Government Code, Section 123.006.

**Closing Date or Receipt o Applications:** All applications must be submitted via CJD's eGrants website on or before February 28, 2014.

**Selection Process:** Applications will be reviewed and prioritized by the Specialty Courts Advisory Council (Council) who will make funding recommendations to CJD. CJD will make all final funding decisions based on eligibility, Council recommendations, reasonableness, availability of funding, and cost-effectiveness. A copy of the scoring elements to be used by the Council is available under the Forms link at https://egrants.governor.state.tx.us/updates.aspx.

**Contact Person**: If additional information is needed, contact the eGrants help desk at egrants@governor.state.tx.us or (512) 463-1919.

**Hidalgo County Veterans Court**

**WHEREAS,** The Hidalgo County Commissioner's Court finds it in the best interest of the citizens of Hidalgo County, that the Hidalgo County Veteran's Court be operated for the 2015 year; and

**WHEREAS,** The Hidalgo County Commissioner's Court agrees that in the event of loss or misuse of the Criminal Justice Division funds, Hidalgo County Commissioner's Court assures that the funds will be returned to the Criminal Justice Division in full.

**WHEREAS,** Hidalgo County Commissioner's Court designates Rodolfo Perez, Assistant Director of the Hidalgo County CSCD as the grantee's authorized official. The authorized official is given the power to apply for, accept, reject, alter or terminate the grant on behalf of the applicant agency.

**NOW THEREFORE, BE IT RESOLVED** that Hidalgo County Commissioner's Court approves submission of the grant application for the Hidalgo County Veteran's Court to the Office of the Governor, Criminal Justice Division.

Signed by:

County Judge

Passed and Approved this 4th day of March 2014

Grant Number: _2431504_____

# Request for Applications – Justice Assistance Grant Programs

The Criminal Justice Division (CJD) of the Governor's Office is soliciting applications for projects that reduce crime and improve the criminal justice system during the 2015 grant cycle.

**Purpose**: The purpose of this solicitation is to reduce crime and improve the criminal justice system.

**A aila le Funding**: Federal funds are authorized under the Edward Byrne Memorial Justice Assistance Grant Program (JAG), 42 U.S.C. 3751(a). JAG funds are made available through a Congressional appropriation to the United States Department of Justice. All awards are subject to the availability of appropriated federal funds and any modifications or additional requirements that may be imposed by law.

**Funding Le els**:
Minimum: $10,000
Maximum: None
Match Requirement: None

**Standards**: Grantees must comply with the standards applicable to this funding source cited in the *Texas Administrative Code* (1 TAC Chapter 3), and all statutes, requirements, and guidelines applicable to this funding.

**Pro i itions**: Grant funds may not be used to support the following services, activities, and costs:

1) inherently religious activities such as prayer, worship, religious instruction, or proselytization;
2) lobbying;
3) any portion of the salary of, or any other compensation for, an elected or appointed government official;
4) non-law enforcement vehicles or equipment for government agencies that are for general agency use;
5) weapons, ammunition, explosives or military vehicles;
6) admission fees or tickets to any amusement park, recreational activity or sporting event;
7) promotional gifts;
8) food, meals, beverages, or other refreshments;
9) membership dues for individuals;
10) any expense or service that is readily available at no cost to the grant project or that is provided by federal, state, or local funds (i.e. supplanting);
11) fundraising;
12) construction, renovation or remodeling;
13) medical services;
14) transportation, lodging, per diem or any related costs for participants, when grant funds are used to develop and conduct training;
15) legal services for adult offenders; and
16) any other prohibition imposed by federal, state, or local law.

**Eligi le Applicants**:

1) State agencies;
2) Units of local government;
3) Independent school districts;
4) Native American tribes; and
5) Community supervision and corrections departments.

**Eligi ility Re uirements**:
1) Projects must focus on reducing crime and improving the criminal justice system.
2) Eligible applicants must provide law enforcement, corrections, or judicial services.
3) In order for an applicant to be eligible, the county (or counties) in which the applicant is located must have a 90% average on both adult and juvenile criminal history dispositions to the Texas Department of Public Safety for calendar years 2008 through 2012. This requirement must be met by August 1, 2014.
4) Eligible applicants operating a law enforcement agency must be current on reporting Part I violent crime data to the Texas Department of Public Safety for inclusion in the annual Uniform Crime Report (UCR) and must have been current for the three previous years.
5) Eligible applicants must have a DUNS (Data Universal Numbering System) number assigned to its agency (to request a DUNS number, go to http://fedgov.dnb.com/webform/displayHomePage.do).
6) Eligible applicants must be registered in the federal System for Award Management (SAM) database located at https://www.sam.gov/ and maintain an active registration throughout the grant period.

**Pro ect Period**: Grant-funded projects must begin on or after October 1, 2014, and expire on or before September 30, 2015. Grant-funded equipment only projects are generally awarded for a six month grant period. CJD will consider any other proposed changes to the start or end dates on a case-by-case basis.

**Application Process**: Applicants must access CJD's grant management website at https://eGrants.governor.state.tx.us to register and apply for funding.

**Pre erences**: Preference will be given to programs addressing one or more of the following areas which are listed in order of priority:
1) Crime Data – Enhancements to records management systems to allow local law enforcement to contribute appropriate data: a) to the National Data Exchange (N-DEx) through the Texas Data Exchange (TDEx) application hosted by the Texas Department of Public Safety (DPS), or b) to the National Incident-Based Reporting System (NIBRS) through the Uniform Crime Reporting section at DPS. (NOTE: Units of government providing law enforcement serves are encouraged to take advantage of funding under this priority in the event reporting crime data in the NIBRS format becomes an eligibility requirement for future funding.);
2) Trafficking – Projects that disrupt drug and human trafficking including areas along and near major state corridors;
3) Innovative or Evidence Based Programs – Projects that reduce crime and violence in areas with high crime rates or organized criminal activity;
4) Mental Health – Specialized training to increase the number of mental health officers and the ability of law enforcement to work with individuals diagnosed with mental illness;
5) System Improvements – Projects that promote efficiency, accuracy and credibility of law enforcement agencies and prosecutors.

**Closing Date or Receipt o Applications**: All applications must be certified via CJD's grant management website on or before February 28, 2014.

**Selection Process**:
1) For eligible local and regional projects:
   a) Applications will be forwarded by CJD to the appropriate regional council of governments (COG).

b) The COG's criminal justice advisory committee will prioritize all eligible applications based on state priorities, identified community priorities, cost and program effectiveness.
c) CJD will accept priority listings that are approved by the COG's executive committee.
d) CJD will make all final funding decisions based on eligibility, COG priorities, reasonableness, availability of funding, and cost-effectiveness.

2) For state discretionary projects, applications will be reviewed by CJD staff members or a review group selected by the executive director. CJD will make all final funding decisions based on eligibility, reasonableness, availability of funding, and cost-effectiveness.

**Contact In ormation**: If additional information is needed, contact the eGrants help desk at eGrants@governor.state.tx.us or (512) 463-1919.

**Hidalgo County Monitoring Compliance or Hig Ris O enders**

**WHEREAS,** The Hidalgo County Commissioner's Court finds it in the best interest of the citizens of Hidalgo County, that the Hidalgo County Monitoring Compliance for High Risk Offenders be operated for the 2015 year; and

**WHEREAS,** The Hidalgo County Commissioner's Court agrees that in the event of loss or misuse of the Criminal Justice Division funds, Hidalgo County Commissioner's Court assures that the funds will be returned to the Criminal Justice Division in full.

**WHEREAS,** Hidalgo County Commissioner's Court designates Rodolfo Perez, Assistant Director of the Hidalgo County CSCD as the grantee's authorized official. The authorized official is given the power to apply for, accept, reject, alter or terminate the grant on behalf of the applicant agency.

**NOW THEREFORE, BE IT RESOLVED** that Hidalgo County Commissioner's Court approves submission of the grant application for the Hidalgo County Monitoring Compliance for High Risk Offenders to the Office of the Governor, Criminal Justice Division.

Signed by:

County Judge

Passed and Approved this 4th day of March 2014

Grant Number: _2725302_____

# Request for Applications – Prostitution Prevention Programs

The Criminal Justice Division (CJD) of the Governor's Office is soliciting applications for projects that support eligible prostitution prevention programs during the state fiscal year 2015 grant cycle.

**Purpose:** The Prostitution Prevention Program supports programs as defined in Chapter 169A of the Texas Health and Safety Code, which incorporate the following essential characteristics:

1) The integration of services in the processing of cases in the judicial system;
2) The use of a non-adversarial approach involving prosecutors and defense attorneys to promote public safety, to reduce the demand for the commercial sex trade and trafficking of persons by educating offenders, and to protect the due process rights of program participants;
3) Early identification and prompt placement of eligible participants in the program;
4) Access to information, counseling, and services relating to sex addiction, sexually transmitted diseases, mental health, and substance abuse;
5) A coordinated strategy to govern program responses to participants' compliance;
6) Monitoring and evaluation of program goals and effectiveness;
7) Continuing interdisciplinary education to promote effective program planning, implementation, and operations; and
8) Development of partnerships with public agencies and community organizations.

**A aila le Funding:** State funding is authorized for these projects under Texas Code of Criminal Procedure, Section 102.056 and Texas Government Code, Section 772.006, which authorizes the use of state funds to support criminal justice projects and designates CJD as the administering agency. The source of funding is a biennial appropriation by the Texas Legislature from funds collected through court costs and fees. All awards are subject to the availability of funds appropriated by the Texas Legislature for the 2014-2015 biennium.

**Funding Le els**:
Minimum: $10,000
Maximum: $150,000
Match Requirement: None

**Standards:** Grantees must comply with the standards applicable to this funding source cited in the *Texas Administrative Code* (1 TAC Chapter 3), and all statutes, requirements, and guidelines applicable to this funding.

**Pro i itions:** Grant funds may not be used to support the following services, activities, and costs:

1) inherently religious activities such as prayer, worship, religious instruction, or proselytization;
2) lobbying;
3) vehicles or equipment for government agencies that are for general agency use;
4) weapons, ammunition, explosives or military vehicles;
5) admission fees or tickets to any amusement park, recreational activity or sporting event;
6) promotional gifts;
7) food, meals, beverages, or other refreshments;
8) membership dues for individuals;
9) any expense or service that is readily available at no cost to the grant project or that is provided by other federal, state or local funds (e.g., supplanting);
10) fundraising;
11) construction, remodeling or renovation;
12) medical services;

13) transportation, lodging, per diem or any related costs for participants when grant funds are used to develop and conduct training; and
14) any other prohibition imposed by federal, state, or local law.

**Eligi le Applicants:**
1) Counties;
2) Cities; and
3) Judicial districts

**Eligi ility Re uirements:**
1) Pursuant to Texas Health and Safety Code, Section 169A.002, the commissioners' court of a county or governing body of a municipality may establish a prostitution prevention program for defendants charged with an offense under Section 43.02(a) (1), Penal Code, in which the defendant offered or agreed to engage in or engaged in sexual conduct for a fee.
2) Pursuant to Texas Health and Safety Code, Section 169A.0055, counties with populations of more than 200,000, which do not contain a city with an established prostitution prevention program, are required to establish a prostitution prevention program if the county receives sufficient federal or state funding specifically for that purpose.
3) The program must be registered with CJD as required in the Texas Health and Safety Code, Section 169A.004, and must maintain a current registration throughout the grant period.
4) Any portion of fees collected from program participants and retained by the grantee is considered generated program income (GPI) and must be applied to the grant through a grant adjustment. GPI must be used to offset project costs and must be expended prior to seeking payment from CJD.
5) In order for an applicant to be eligible, the county (or counties) in which the applicant is located must have a 90% average on both adult and juvenile criminal history dispositions to the Texas Department of Public Safety for calendar years 2008 through 2012. This requirement must be met by August 1, 2014.
6) Applicants must have a DUNS (Data Universal Numbering System) number assigned to its agency (to request a DUNS number, go to http://fedgov.dnb.com/webform/displayHomePage.do).
7) Eligible applicants must be registered in the federal System for Award Management (SAM) database located at https://www.sam.gov/portal/public/SAM/ and maintain an active registration throughout the grant period.

**Pro ect Period:** Grant-funded projects must begin on or after September 1, 2014, and expire on or before August 31, 2015.

**Application Process:** Applicants must access CJD's grant management website at https://eGrants.governor.state.tx.us to register and apply for funding.

**Pre erences:** Preference will be given to mandated prostitution prevention programs under Texas Health and Safety Code, Section 169A.0055.

**Closing Date or Receipt o Applications:** All applications must be submitted via CJD's eGrants website on or before February 28, 2014.

**Selection Process:** Applications will be reviewed and prioritized by the Specialty Courts Advisory Council (Council) who will make funding recommendations to CJD. CJD will make all final funding decisions based on eligibility, Council recommendations, reasonableness, availability of funding, and cost-effectiveness.

**Contact Person**: If additional information is needed, contact the eGrants help desk at eGrants@governor.state.tx.us or (512) 463-1919.

**Hidalgo County Prostitution Pre  ention Court Program**

**WHEREAS,** The Hidalgo County Commissioner's Court finds it in the best interest of the citizens of Hidalgo County, that the Hidalgo County Prostitution Prevention Court Program be operated for the 2015 year; and

**WHEREAS,** The Hidalgo County Commissioner's Court agrees that in the event of loss or misuse of the Criminal Justice Division funds, Hidalgo County Commissioner's Court assures that the funds will be returned to the Criminal Justice Division in full.

**WHEREAS,** Hidalgo County Commissioner's Court designates Rodolfo Perez, Assistant Director of the Hidalgo County CSCD as the grantee's authorized official. The authorized official is given the power to apply for, accept, reject, alter or terminate the grant on behalf of the applicant agency.

**NOW THEREFORE, BE IT RESOLVED** that Hidalgo County Commissioner's Court approves submission of the grant application for the Hidalgo County Prostitution Prevention Court Program to the Office of the Governor, Criminal Justice Division.

Signed by:

County Judge

Passed and Approved this 4th day of March 2014

Grant Number: _2752001_____

**AI-43333** **Urban County 11. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Katia Garcia, COMM. PCT. #1

**Department:** COMM. PCT. #1

## Information

**CAPTION**

Discussion, consideration and approval to accept counter offer to purchase a tract of land known as Parcels 2,3,4,6,8,9,10,11 and 12 for the Delta Area Connector / East Lateral Project (GLO 12-406-000-6453/DRS 210068).

**BACKGROUND**

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 6540-62-0100-5000-6200

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Texas General Land Office Project 12-406-000-6453/DRS210068

**FISCAL YEAR:** **ACCT. #:**

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Fiscal impact is $ 195,681.50 coming out of the GLO account identified. There is no County General fund fiscal impact.

## Attachments

backup

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/26/2014 04:24 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Katia Garcia Started On: 02/26/2014 08:34 AM

Final Approval Date: 02/28/2014

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 2)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $42,480.00

Appraised Value: $32,585.00

Differences: **$9,895.00**

Approved; ✓ L.A.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 3)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $23,148.00

Appraised Value: $18,295.00

Differences: **$4,853.00**

Approved; ✓ R.A.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 4)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $20,865.00

Appraised Value: $16,518.00

Differences: **$4,347.00**

Approved; ✓ R.B.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 6)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $18,218.00

Appraised Value: $13,481.00

Differences: **$4,737.00**

Approved; ✓ R.G.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 8)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $50,986.00

Appraised Value: $38,561.00

Differences: **$12,425.00**

Approved; ✓ R.B.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 9)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $5,872.00

Appraised Value: $4,404.00

Differences: **$1,468.00**

Approved; ✓ R.D.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 10)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $10,448.50

Appraised Value: $8,979.00

Differences: **$1,469.50**

Approved; ✓ R.S.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 11)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $9,548.00

Appraised Value: $7,324.00

Differences: **$2,224.00**

Approved; ✓ R. A.

Not Approved; _____

# *MEMO*

TO: Commissioner's Court

FROM: Roy Gonzales. ROW Agent
Hidalgo County Precinct No. 1

DATE: February 25, 2014

RE: Delta Area Connector/East Lateral
James B. Carlson (Parcel# 12)

---

Attached please find letter provide by property owner for above-mentioned project.

Settlement Offer: $14,116.00

Appraised Value: $11,920.00

Differences: **$2,196.00**

Approved; ✓ R.A

Not Approved; _____

**AI-43222** **Urban County 11. B.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Monica Leal **Submitted By:** Mary Flores, URBAN COUNTY

**Department:** URBAN COUNTY

## Information

### CAPTION

Urban County Program on behalf of the City of Mercedes is requesting authority to purchase fire station equipment (spreaders, quick kick ram support and twinline hose) for the Mercedes Fire Department. Purchase will be made from Wilson Fire Rescue (contract # EE08-13) an approved vendor through Hidalgo County's membership and participation with H-GAC. The total amount of purchase is $7,230.00 (quote attached) for the Mercedes Fire Department funded thru FY 26 (2013) Mercedes – Fire Station/Equipment line item and the city's general funds.

### BACKGROUND

The fire station/equipment (spreaders, quick kick ram support and twinline hose) purchased will be utilized at the Mercedes Fire Department. See attached quote.

Vendor: **Wilson Fire Rescue**
Purchase Amount: **$7,230.00**

Funds Available: $6,719.70 FY 26 (2013) Fire Station/Equipment
$ 510.30 City of Mercedes general Funds
$7,230.00

## Attachments

Mercedes backup

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/18/2014 03:07 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Mary Flores Started On: 02/18/2014 10:10 AM

Final Approval Date: 02/28/2014

city of **mercedes**
by Shades Heal

FEB 10 2014

**MEMO**

**TO:** **Monica Leal, UCP Coordinator**

**FROM:** **Olga Rosas, Grants/Fixed Assets Coord.** OR.

**DATE:** **February 6, 2014**

**RE:** **Fire Station/Equipment – Mercedes Fire Station**

Attached please find the price proposal forms, quote, contract price worksheet, HGAC base bid sheet and the published options sheet for Wilson Fire Rescue for the purchase of rescue equipment. The items to be purchased through this contract will be utilizing the UC City funds, any cost overruns will be covered by the City's general fund (please see attached check). Please review and if everything is in order please approve for purchase.

Should you have any questions or require further documentation, please contact me at (956) 565-3114, Ext. 129.

# COUNTY OF HIDALGO - URBAN COUNTY PROGRAM

## Price Proposal Form

Price Proposal Form must be submitted to Urban County for pre-approval prior to the purchase. Use additional forms as needed.

Name Of Cooperative: HGAC  Person Contacted: Gabe Labonte

Name: Wilson Fire Rescue  Contract #: EE08-13  Phone: 1-830-625-2343

| Item # | Description of Items | Quantity | List Price Per Unit | COOP Price Per Unit | Total Amount |
|---|---|---|---|---|---|
| 1 | Hurst #362R533 KL32 Spreader w/ QD Couplers | 1 | 7,861.25 | 5,995.00 | 5,995.00 |
| 2 | Hurst #247R028 Quick Kick Ram Support | 1 | 680.00 | 510.00 | 510.00 |
| 3 | Hurst #353O022 30Ft Twinline Hose w/ QD Couplers | 1 | 660.00 | 625.00 | 625.00 |
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| | **Freight** | | | | **100.00** |
| | | | | **TOTAL** | **7,230.00** |

Recommendation: The City recommends purchase of the Fire Rescue Equipment from Wilson Fire Rescue.

**Requested By:** Olga Rosas 02/06/2014
(USE BLUE INK) Date

**UCP Deputy** [signature] 2/13/14
(USE BLUE INK) Date

WILSON
FIRE RESCUE

218 Deborah, Suite #2
New Braunfels, TX 78130
Toll Free (800) 959-0920 Fax (830) 625-2415

| Bill To: | Ship To: |
|---|---|
| MERCEDES FD<br>400 S. OHIO STREET<br>MERCEDES, TX 78570<br><br>ATTN: JAIME GARCIA | SAME |

DATE 1/21/14

SALES ORDER ☐
QUOTE ■

| PURCHASE ORDER # | PHONE | FAX | FOB | TERMS | TAX ID | SALES REP |
|---|---|---|---|---|---|---|
| | 956-565-7755 | 956-565-4943 | SHIPPING PT | On Deliver | | GABE L |

| Qty | Item | Description | List Pr | Discount Price |
|---|---|---|---|---|
| 1 | HURST | #362R533 KL32 SPREADER W/QD COUPLERS | $7,861.25 | $5,995.00 |
| 1 | HURST | #247R028 QUICK KICK RAM SUPPORT | $680.00 | $510.00 |
| 1 | HURST | #353O022 30FT TWINLINE HOSE W/QD COUPLERS | $660.00 | $625.00 |
| | | | | |
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| | | HGAC PRICING PER CONTRACT #EE08-13 | | |
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|---|---|
| Subtotal | $7,130.00 |
| Tax | |
| Freight | $100.00 |
| Total | $7,230.00 |

**THANK YOU FOR YOUR BUSINESS!**

**IT IS AN HONOR TO SERVE YOU!**

HGACBuy
THE SMART PURCHASING SOLUTION

# Contract Pricing Worksheets

Rev 02-05-07

NOTE: Purchase Orders are not valid unless a copy of the completed worksheet and the customer's order are faxed to HGACBuy at: 713-993-4548

**This Workbook contains three versions of HGACBuy's Contract Pricing Worksheet. One is for Standard Equipment / Services, one is for Catalog or Price Sheet type purchases, and the third is for Motor Vehicles only. See tabs at bottom to select appropriate Worksheet.**

Please contact H-GAC staff about use of the worksheets if you have any questions.

| HGACBuy | CONTRACT PRICING WORKSHEET<br>For Standard Equipment Purchases | Contract No.: | EE08-13 | Date Prepared: | 2/11/2014 |
|---|---|---|---|---|---|

***This Worksheet is prepared by Contractor and given to End User. If a PO is issued, both documents MUST be faxed to H-GAC @ 713-993-4548. Therefore please type or print legibly.***

| | | | |
|---|---|---|---|
| Buying Agency: | Mercedes FD | Contractor: | Wilson Fire/Rescue |
| Contact Person: | Olga Rosas | Prepared By: | Gabe Labonte |
| Phone: | 956-565-3114 | Phone: | 830-625-2343 |
| Fax: | | Fax: | |
| Email: | orosas@cityofmercedes.net | Email: | gabe@wilsonfirerescue.com |

| Product Code: | BEC | Description: | KL32 Spreader |
|---|---|---|---|

| A. Product Item Base Unit Price Per Contractor's H-GAC Contract: | 7861.25 |
|---|---|

**B. Published Options - Itemize below - Attach additional sheet if necessary - Include Option Code in description if applicable**
(Note: Published Options are options which were submitted and priced in Contractor's bid.)

| Description | Cost | Description | Cost |
|---|---|---|---|
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| | | Subtotal From Additional Sheet(s): | |
| | | Subtotal B: | 0 |

**C. Unpublished Options - Itemize below - Attach additional sheet if necessary**
(Note: Unpublished options are items which were not submitted and priced in Contractor's bid.)

| Description | Cost | Description | Cost |
|---|---|---|---|
| #247R028 Quick Kick Ram Support | 510 | | |
| #353O022 30ft Hose w/Qd Cupplers | 625 | | |
| | | | |
| | | | |
| | | Subtotal From Additional Sheet(s): | |
| | | Subtotal C: | 1135 |

| Check: Total cost of Unpublished Options (C) cannot exceed 25% of the total of the Base Unit Price plus Published Options (A+B). | For this transaction the percentage is: | 14% |
|---|---|---|

**D. Total Cost before any other applicable Charges, Trade-Ins, Allowances, Discounts, Etc. (A+B+C)**

| Quantity Ordered: | 1 | X Subtotal of A + B + C: | 8996.25 | = | Subtotal D: | 8996.25 |
|---|---|---|---|---|---|---|

**E. Other Charges, Trade-Ins, Allowances, Discounts, Etc.**

| Description | Cost | Description | Cost |
|---|---|---|---|
| Freight | 100 | | |
| Preffered Customer Discount | -1866.25 | | |
| | | | |
| | | Subtotal E: | -1766.25 |

| Delivery Date: | F. Total Purchase Price (D+E): | 7230 |
|---|---|---|

HURST JAWS OF LIFE

HURST Jaws of Life, Inc.
711 North Post Road
Shelby, NC 28150
www.jawsoflife.com

IDEX RESCUE

Dinglee
Hurst
Lukas
Vetter

February 12, 2014

Mercedes FD
Jaime Garcia
400 S. Ohio St.
Mercedes, TX 78570

Jaime,

In following up on your request for the pricing for the Quick Kick Ram Support and the Twin Line Hose I have the following price information for you.

| | | |
|---|---|---|
| Part# 3530022 | 30' Orange Twin Line Hose w/ QD Couplings | $660.00 |
| Part# 247R028 | Quick Kick Ram Support | $680.00 |

Thank you for your continued interest in the Hurst Jaws of Life products. If you have any questions or need additional information please do not hesitate to contact me anytime.

Sincerely,

Paul Felegy
Central Regional Manager

| | | | | |
|---|---|---|---|---|
| BAE | American Rescue Technology | GENISIS EF S-45 BATTERY OPERATED SPREADER | $10,095.00 | Daco Fire Equipment |
| BBA | Amkus | AMK-24 (10,500 PSI), 24.0 Max. Spreader Opening, 23.9" Max. Spreader Travel Distance | $5,485.00 | Amkus Inc. |
| BBB | Amkus | 28 (10,500 PSI), 53,300 lbs. Max. Spreading Force, 28" Spread Distance | $5,307.00 | Amkus Inc. |
| BBC | Amkus | 30-CX (10,500 PSI), 16,950 lbs. Max. Spreading Force, 32" Spread Distance | $4,570.00 | Amkus Inc. |
| BDA | Holmatro | 4230 (10,000 PSI), 14,585 lbs. Max. Spreading Force, 33.3" Spread Distance | $6,483.00 | Metro Fire Apparatus Specialists, Inc. |
| BDB | Holmatro | 4240 (1,000 PSI) 33,625 lbs. Max. Spreading Force, 27 3/8" spread distance | $6,631.00 | Metro Fire Apparatus Specialists, Inc. |
| BDC | Holmatro | 4242UL (10,000 PSI), 19,595 lbs. Max. Spreading Force, 27.2" Spread Distance | $6,060.00 | Metro Fire Apparatus Specialists, Inc. |
| BDD | Holmatro | 4260UL (10,000 PSI), 33,000 lbs. Max. Spreading Force, 32.7" Spread Distance | $7,199.00 | Metro Fire Apparatus Specialists, Inc. |
| BDE | Holmatro | 4280 (10,000 PSI), 58,000 lbs. Max. Spreading Force, 26.5" Spread Distance | $7,418.00 | Metro Fire Apparatus Specialists, Inc. |
| BEA | Hurst Products | SP300E eDraulic Spreader, 10,000 psi, 25,000 lbs max. spreading force, 24" spreading distance. | $11,210.00 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire Rescue. |
| BEB | Hurst Products | ML 28 Defender (5,000 psi) 44,000 lbs max. spreading force, 28" spreading distance. | $7,766.25 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire Rescue. |
| BEC | Hurst Products | KL 32 (5,000 psi) 26,077 lbs max.Spreading Force, 42.4" Spreading Distance | $7,861.25 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire Rescue. |
| BED | Hurst Products | SP300 (10,000 psi) 25,000 lbs max. spreading force, 24" spreading distance. | $7,766.25 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire Rescue. |
| BEE | Hurst Products | SP310 (10,000 psi) 57,550 lbs spreading force, 28.3" Spreading Distance | $7,766.25 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire Rescue. |
| BEF | Hurst Products | SP510 (10,000 psi) 51,700 lbs spreading force, 31.5" Spreading Distance | $7,861.25 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire Rescue. |
| BEG | Hurst Products | SP512 (10,000 psi) 28,700 lbs spreading force, 24" spreading distance | $7,861.25 | Hurst Jaws of Life, L.N. Curtis & Sons, Municipal Emerg. Serv. Inc.; River Country Rescue; Sunbelt Fire, Inc.; Tech Resq;Wilson Fire |

Gmail

Olga Rosas < orosas@cityofmercedes.net>

# Hurst Hose

1 message

**Gabe Labonte** < gabe@wilsonfirerescue.com> Thu, Feb 6, 2014 at 3:08 PM
To: Olga Rosas <orosas@cityofmercedes.net>

Olga,

The #353O022 30ft LP hose w/QD coupling has a list price of $800.00 per the Hurst price schedule. We listed this hose as an unpublished option on the HGAC bid due to it not being under the base bid or the published options.

Thanks,

Gabe Labonte

Wilson Fire Rescue/NAFECO

218 Deborah, Suite #2

New Braunfels, TX 78130

Phone: (830) 625-2343

Fax: (830) 625-2415

www.wilsonfirerescue.com

www.nafeco.com

**Zimbra** **monica.leal@co.hidalgo.tx.us**

## RE: HGAC contract pricing worksheet

**From :** Jackie Palmer <jackie.palmer@h-gac.com> Tue, Feb 11, 2014 01:59 PM

**Subject :** RE: HGAC contract pricing worksheet 1 attachment

**To :** 'Monica Leal' <monica.leal@co.hidalgo.tx.us>

Monica,
Attached is a revised quote. The Contract Pricing Worksheet from Wilson Fire Rescue is in compliance with our contract. Thanks

---

**From:** Monica Leal [mailto:monica.leal@co.hidalgo.tx.us]
**Sent:** Monday, February 10, 2014 3:57 PM
**To:** Palmer, Jackie
**Subject:** Re: HGAC contract pricing worksheet

Good afternoon Ms. Palmer,

I am checking status on the email below. Can you please advise if the information submitted by Wilson Fire Rescue is in line with the pricing?

Thank you,

*Monica Leal*

---

**From:** "Monica Leal" <monica.leal@co.hidalgo.tx.us>
**To:** "jackie palmer" <jackie.palmer@h-gac.com>
**Sent:** Wednesday, February 5, 2014 4:28:31 PM
**Subject:** HGAC contract pricing worksheet

Good afternoon Ms. Palmer,

Attached is the HGAC contract pricing worksheet from Wilson Fire Rescue along with their quote. Can you please assist me in verifying that the information that Wilson Fire Rescue submitted is correct?

Should you have any questions or concerns, please do not hesitate to contact me.

Respectfully submitted,

*Monica Leal*

---

**From:** Ricoh4502@ucp.co.hidalgo.tx.us
**To:** "Monica Leal" <Monica.Leal@co.hidalgo.tx.us>
**Sent:** Wednesday, February 5, 2014 2:42:42 PM
**Subject:** Message from "RNP00267360987B"

This E-mail was sent from "RNP00267360987B" (Aficio MP C4502).

Scan Date: 02.05.2014 14:41:09 (-0600)
Queries to: Ricoh4502@ucp.co.hidalgo.tx.us

---

**HGAC QUOTE FOR MERCEDES FD 2-11-14.xlsx**
109 KB

---

THIS DOCUMENT HAS LINEMARK™ LINES IN THE PAPER • HOLD TO LIGHT TO VIEW

**CITY OF MERCEDES**
POOLED CASH FUND
400 SOUTH OHIO
MERCEDES, TEXAS 78570

FIRST NATIONAL BANK
MERCEDES, TEXAS

109693

DATE 02/06/2014

AMOUNT ******510.30

PAY ---- FIVE HUNDRED TEN & 30/100 DOLLARS ----

VOID AFTER 90 DAYS

TO THE ORDER OF
** URBAN COUNTY PROGRAM **
472 E DURANTA, STE 107
ALAMO, TX 78516

Henry Munoz
Jose M. Bonilla MP

SECURITY FEATURES INCLUDED. DETAILS ON BACK.

⑈109693⑈ ⑆114921415⑆ ⑈00746118791⑈

**CITY OF MERCEDES** • POOLED CASH FUND

109693

99-04229 ** URBAN COUNTY PROGRAM **

109693 02/06/2014

| DATE | I.D. | PO # | DESCRIPTION | AMOUNT |
|---|---|---|---|---|
| 1/20/2014 | 02062014 | | EQUIPMENT<br>CDBG FUNDING LEVERAGED BY THE CITY FOR THE PURCHASE OF RESCUE EQUIPMENT FOR THE MERCEDES FIRE DEPT | 510.30 |

CHECK TOTAL 510.30

**AI-43225** **Urban County 11. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Monica Leal **Submitted By:** Mary Flores, URBAN COUNTY

**Department:** URBAN COUNTY

## Information

### CAPTION

Urban County Program on behalf of the City of Progreso is requesting authority to purchase playground equipment for the Progreso City Park. Purchase will be made from American Parks Company (contract # 423-13), an approved vendor through Hidalgo County's membership and participation with State of Texas Buy Board. The total amount of purchase including installation is $42,000.00 (quote attached) for the Progreso City Park funded thru FY's 24 & 26 (2011 & 2013) Progreso – Park, Recreational Facilities funds.

### BACKGROUND

The playground equipment purchased will be utilized at the Progreso City Park. See attached quote.

Vendor: **American Parks Company**
Purchase Amount: **$42,000.00**

Funds Available: $ 2,648.79 FY 24 (2011) Park, Recreational Facilities
$40,000.00 FY 26 (2013) Park, Recreational Facilities
Total: $42,648.79

## Attachments

Agenda Backup

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/18/2014 03:08 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Mary Flores Started On: 02/18/2014 01:38 PM

Final Approval Date: 02/28/2014

# COUNTY OF HIDALGO - URBAN COUNTY PROGRAM
## Price Proposal Form

Price Proposal Form must be submitted to Urban County for pre-approval prior to the purchase. Use additional forms as needed.

**Name of Cooperative:** Buy Board **Person Contacted:** Taylor Cooper

**Purchase #1** **Vendor Name:** American Parks Company **Contract No. :** 423-13 **Phone:** 1-800-381-4491

| Quantity | Description of Items | Price per Unit | Total Amount |
|---|---|---|---|
| 1 | Double Dutch Playground Structure - Safety Use Zone: 34' x 24' | $20.998.00 | $10,499.00 |
| 1 | Buffalo Grove Playground Structure - Safety Use Zone: 27'x31' | $8,799.00 | $7,999.00 |
| 2 | 8' Single Post Swing 1 Bay - Safety Use Zone: 32' x 25' | $1,099.00 | $2,198.00 |
| 2 | Pull-Up/Dip Fitness Station | $1,373.00 | $2,650.00 |
| 72 | IPEMA Certified Engineered Wood Fiber – 12" depth | $72.00 | $4,680.00 |
| 60 | 4' Landscape Border Timbers with stake– Black | $33.00 | $1,980.00 |
| 1 | APC Professional Installation of Playground Structure | $0.00 | $15,007.00 |
| 1 | Buy Board Discount for Double Dutch Playground Structure | $0.00 | -($1,049.00) |
| 1 | Buy Board Discount for Buffalo Grove Playground Structure | $0.00 | -($799.00) |
| 1 | Multiple Playground Discount | $0.00 | -($4,165.00) |
| 1 | Shipping and handling | | $3,000.00 |
| | | | |

| TOTAL: | **$42,000.00** |
|---|---|

**Recommendation:** Purchase playground equipment from American Parks Company

**Requested by:** Alfredo Espinoza Date 2-14-14

FEB 14 2014

**UCP Approval:** Date 2/14/14

QUOTE

AMERICAN PARKS ★ COMPANY


| | |
|---|---|
| Prepared By | Taylor Cooper |
| E-mail | taylor@americanparkscompany.com |
| Phone | (800) 381-4491 |
| Fax | (888) 934-6441 |


FEB 14 2014

| | | | |
|---|---|---|---|
| Quote Number | 00002915 | Quote Name | Double Dutch Playground |
| Created Date | 2/14/2014 | Expiration Date | 2/28/2014 |

**Comments or Special Instructions:**
Shipping in 3-4 weeks. Price quoted for material cost and installation. Price Excludes: sitework, underground line location, permits, lift gates & impact fees. Customer is responsible for any taxes that may apply. Site must be clear, level and accessible at time of installation. If rock, concrete or any obstacle is found during installation, additional charges may apply. Specific insurance requirements may require additional fees. If order is cancelled a 25% restocking fee may be assessed.

| | | | |
|---|---|---|---|
| Contact Name | Raul Garcia | Phone | (956) 565-0241 |
| Email | garciaraul955@yahoo.com | | |
| Bill To Name | City of Progreso | Ship To Name | City of Progreso |
| Bill To | Progreso, TX 78579 | Ship To | Progreso, TX 78579 |

| Product | Line Item Description | Product Code | Quantity | List Price | Sales Price | Total Price |
|---|---|---|---|---|---|---|
| Double Dutch | Double Dutch Playground Structure - Safety Use Zone: 34' x 24' | PC-3408B | 1.00 | $20,998.00 | $10,499.00 | $10,499.00 |
| Buffalo Grove | Buffalo Grove Playground Structure - Safety Use Zone: 27'x31' | AP-0053 | 1.00 | $8,799.00 | $7,999.00 | $7,999.00 |
| 8' Single Post 5" Swing Frame - 1 Bay | 8' Single Post Swing 1 Bay - Safety Use Zone: 32' x 25' | 90015101 | 2.00 | $1,099.00 | $1,099.00 | $2,198.00 |
| Pull-Up/Dip Station | Pull-Up/Dip Fitness Station | AFT-14031 | 2.00 | $1,373.00 | $1,325.00 | $2,650.00 |
| Engineered Wood Fiber | IPEMA Certified Engineered Wood Fiber - 12" depth | WOODFIBER2 | 72.00 | $72.00 | $65.00 | $4,680.00 |
| 4' Landscape Timbers with Stakes | 4' Landscape Border Timbers - Black | LT-4 | 60.00 | $33.00 | $33.00 | $1,980.00 |
| Professional Turn-Key Installation | APC Professional Installation of Playground Structure | INSTALL | 1.00 | $0.00 | $15,007.00 | $15,007.00 |
| DISCOUNT | Buy Board Discount for Double Dutch Playground Structure | DSCNT | 1.00 | $0.00 | ($1,049.00) | ($1,049.00) |
| DISCOUNT | Buy Board Discount for Buffalo Grove Playground Structure | DSCNT | 1.00 | $0.00 | ($799.00) | ($799.00) |
| DISCOUNT | Mulitple Playground Discount | DSCNT | 1.00 | $0.00 | ($4,165.00) | ($4,165.00) |

| | | | |
|---|---|---|---|
| Subtotal | $39,000.00 | Shipping and Handling | $3,000.00 |
| Total Price | $39,000.00 | Grand Total | $42,000.00 |

I APPROVE THIS PROJECT. Please Process My Order

Approval and acceptance of this proposal may be executed by signing below and faxing or emailing back to the contact information listed above. Unless prior arrangements are approved, payment is due in full upon receipt of invoice.

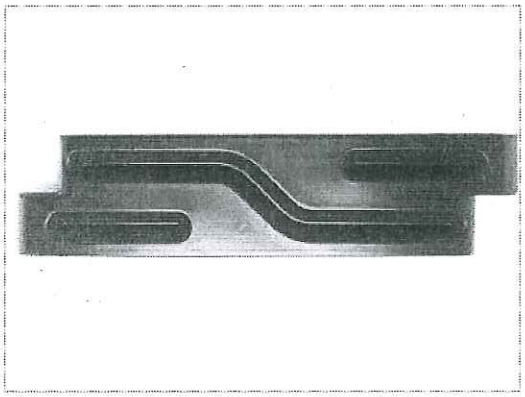
QUOTE

AMERICAN
PARKS ★ COMPANY


| | |
|---|---|
| Prepared By | Taylor Cooper |
| E-mail | taylor@americanparkscompany.com |
| Phone | (800) 381-4491 |
| Fax | (888) 934-6441 |


Company: Date:

Authorized Purchaser: Title:



# 4' Black Landscape Timber (Border) With Stake

### Quick Overview

If you are looking to create a barrier around your playground, the LT-4 Black Timbers are the perfect solution! Blow-Molded from plastics of the highest quality, these 4'x12" timbers are designed to last.

The perfect playground landscape border!

*****Each 4' timber requires one 30" timber stake.**

### More Views

$33.00

Qty: 1 Add to Cart Add to Quote

## Description

If you're looking to create a barrier around your playground, the LT-4 Black Timbers are the perfect solution! Blow-Molded from plastics of the highest quality, these commercial grade 12" timbers are extremely durable.

## Additional Information

| | |
|---|---|
| SKU | LT-4 |
| Age Group | No |
| Child Capacity | No |
| Use Zone | No |

You have no items in your shopping cart.

RECENTLY VIEWED PRODUCTS

- 30" Timber Stake
- Pull-Up/Dip Station
- 8' Single 5" Post Swing Frame-1 Bay

GODADDY VERIFIED & SECURED
FAST CHARGE Payment Gateway VERIFIED MERCHANT

AMERICAN PARKS COMPANY
1-800-381-4491
225 E. Virginia Suite 1
McKinney, TX 75069

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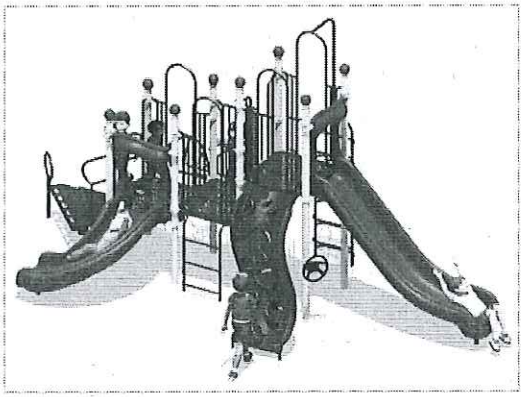

# Double Dutch

**Quick Overview**

Ages: 2-12
Use Zone: 34' x 24'
Child Capacity: 35
1 vertical access ladder, 2 slides, 3 climbers, 2 playwheels, 1 leg lift

View/Print Sale Summary Sheet

**Color Scheme** * Choose an Option...

* Required Fields

**More Views**

~~$20,998.00~~ **Sale: $10,499.00**

Qty: 1 Add to Cart Add to Quote

## Description

The Double Dutch commercial play structure is designed for children ages 2-12. This structure offers a big bang for the buck with 9 play activities. Play elements include a vertical access ladder, 2 slides, 3 climbers, a leg lift, and a 2 play-wheels. This play structure is ADA accessible.

The components of this playground are commercial grade and quality engineered to resist corrosion, fading and mildew. In addition, it is also designed in compliance with the public playground safety standards, ASTM and CPSC.

The posts are 3.5" in diameter, 12 gauge galvanized steel, powder coated for a superior high gloss finish, and backed by a limited 50 year warranty.

Plastic components are rotationally molded for superior strength and are UV stabilized to prevent fading. We offer an industry leading 15 year limited warranty on our plastic components.

You can rest assured your children are playing safely on our PVC-free play decks. Our revolutionary polyethylene coating is lead free and even more durable than traditional plastisol coatings. Our decks carry a 15 year limited warranty.

Hundreds of color combinations are available to turn any playground into a one of a kind exciting play environment.

## Product Attachments

| | |
|---|---|
| Double Dutch Playground Equipment Size: (768.86 KB) | Double Dutch Commercial Playground Equipment Product Summary |
| Color Options - PC Size: (124.8 KB) | Custom Color Palette - Pick Your Playground Colors! |
| Warranty - Playground Equipment - PC Size: (112.26 KB) | Playground Equipment Warranty Information |

## Additional Information

| | |
|---|---|
| **SKU** | PC-3408B |
| **Age Group** | 2-12 |
| **Child Capacity** | 35 |
| **Use Zone** | 34 x 24 |

You have no items in your shopping cart.

# Buffalo Grove

### Quick Overview

Featured Components include Clover Climber, Frog Pad Climber, Wave Slide, and Tic-Tac-Toe Panel.

Age Group: 2-12
Child Capacity: 19
Use Zone: 27'x31'

View/Print Sale Summary Sheet

### More Views

Color Scheme * Choose an Option...

* Required Fields

~~$8,799.00~~ **Sale: $7,999.00**

Qty: 1 Add to Cart Add to Quote

## Description

The buffalo grove is where your kids will want to roam. This play-set is designed for children ages 2-12 and has a child capacity of 19. The buffalo Grove has a small to medium footprint making it a perfect commercial play structure for churches, schools, daycares, and HOA's. If you are having trouble determining which playground is right for your organization call us at 800-381-4491! Our knowledgeable and friendly staff is eager to assist you with the design, purchase, and installation of any of the commercial play structures we carry.

The components of this playground are commercial grade and quality engineered to resist corrosion, fading and mildew. In addition, it is also designed in compliance with the public playground safety standards, ASTM and CPSC.

The posts are 3.5" in diameter, 12 gauge galvanized steel, powder coated for a superior high gloss finish, and backed by a limited lifetime warranty.

Plastic components are rotationally molded for superior strength and are UV stabilized to prevent fading. We offer an industry leading 15 year limited warranty on our plastic components.

You can rest assured your children are playing safely on our PVC-free play decks. Our revolutionary polyethylene coating is lead free and even more durable than traditional plastisol coatings. Our decks carry a 15 year limited warranty.

Hundreds of color combinations are available to turn any playground into a one-of-a-kind stimulating play environment.

**Featured Components include**Clover Climber, Frog Pad Climber, Wave Slide, and Tic-Tac-Toe Panel.

**Age Group:** 2-12
**Child Capacity:** 19
**Use Zone:** 27'x31'

## Product Attachments

| | |
|---|---|
| Buffalo Grove - Commercial Playground Equipment Size: (221.55 KB) | Commercial Playground Equipment Product Summary |
| Custom-Color-Options Size: (369.31 KB) | Custom Color Options - Commercial Playground Equipment |

You have no items in your shopping cart.

RECENTLY VIEWED PRODUCTS

Double Dutch

| | |
|---|---|
| Warranty - Playground Equipment Size: (237.22 KB) | Warranty - American Parks Company |

## Additional Information

| | |
|---|---|
| **SKU** | APC11-073 |
| **Age Group** | 2-12 |
| **Child Capacity** | 19 |
| **Use Zone** | 27' x 31' |

GODADDY VERIFIED & SECURED VERIFY SECURITY

FAST CHARGE Payment Gateway VERIFIED MERCHANT

AMERICAN PARKS • COMPANY

**1-800-381-4491**
225 E. Virginia Suite 1
McKinney, TX 75069

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# 8' Single 5" Post Swing Frame-1 Bay

### Quick Overview

This frame is a unique space-saver for smaller areas and features heady-duty powder coated cast aluminum junctions and a powder-coated 5" frame and top bar. Features convenient factory-installed swing hangers that have been welded to the top bar for low-maintenance operation and vandal-resistance.

**More Views**

Post Color * Choose an Option...

Seat Color * Choose an Option...

* Required Fields

**$1,099.00**

Qty: 1 Add to Cart Add to Quote

### Description

This frame is a unique space-saver for smaller areas and features heady-duty powder coated cast aluminum junctions and a powder-coated 5" frame and top bar. Features convenient factory-installed swing hangers that have been welded to the top bar for low-maintenance operation and vandal-resistance.

ALL INCLUSIVE - ***no worries, just play!***
A swing set purchased from American Parks Company comes with everything you need to complete the installation (with the exception of concrete) and get right to what is important, children playing! Our commercial swing sets include galvanized chains, belt seats, and clevis connectors.

See sections on commercial swing set seats and hardware for a full list of products offered with this frame.

## Product Attachments

| | | |
|---|---|---|
| Warranty - Playground Equipment | Size: (237.22 KB) | Warranty - American Parks Company |

## Additional Information

| | |
|---|---|
| SKU | APC11-065 |
| Age Group | 2-12 |
| Child Capacity | 2 |
| Use Zone | 32' x 25' |

You have no items in your shopping cart.

RECENTLY VIEWED PRODUCTS

Buffalo Grove

Double Dutch

AMERICAN PARKS COMPANY

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# Pull-Up/Dip Station

### Quick Overview

The Pull-Up/Dip Station is a versitile piece that offers fitness enthusiasts the opportunity for a challenging upper body workout.

**$1,373.00**

Qty: 1 Add to Cart Add to Quote

### More Views

### Description

Fitness course products are designed to provide levels of challenge for older children and adults. Enhance your park or public facility by encouraging physical fitness with our outdoor line of exercise equipment.

### Additional Information

| | |
|---|---|
| **SKU** | pull-up-dip-station |
| **Age Group** | 13 and up |
| **Child Capacity** | No |
| **Use Zone** | No |

You have no items in your shopping cart.

RECENTLY VIEWED PRODUCTS

8' Single 5" Post Swing Frame-1 Bay

Buffalo Grove

Double Dutch

VERIFIED & SECURED
VERIFY SECURITY

FAST CHARGE
Payment Gateway
VERIFIED MERCHANT

AMERICAN PARKS COMPANY

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McKinney, TX 75069

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# Engineered Wood Fiber

**Quick Overview**

Minimum Order, 750 Square Feet at 12" Depth

***PRICES SUBJECT TO CHANGE

Availability: In stock

| Product Name | Price | Qty |
|---|---|---|
| 750 sqft. Engineered Wood Fiber | $1,400.00 | 0 |
| 1,500 sqft Engineered Wood Fiber | $2,520.00 | 0 |
| 2,250 sqft. Engineered Wood Fiber | $3,320.00 | 0 |

Add to Cart | Add to Quote

## Description

This product is manufactured from engineered, non-toxic, crushed wood fiber (comprised of softwoods or hardwoods), consisting of randomly sized wood fibers, the majority of which do not exceed 1.5"-3" in length, containing 10%-20% fine pieces to aid in compaction. (It is generally understood that the manufacturing process allows a few oversized pieces.)

Once the newly installed product has settled, it forms a "knitted" or compacted layer that will support a wheelchair, crutches, walkers, etc. It does not utilize any wood containing paint, chemicals or additives. The product has minimal bark and is free of twigs, leaf debris and other organic materials.

Wood fiber can be installed by volunteer labor, as well as by an installer. It gives your playground an attractive, natural look.

## Additional Information

| | |
|---|---|
| SKU | APCEWF |
| Age Group | No |
| Child Capacity | No |
| Use Zone | No |

You have no items in your shopping cart.

RECENTLY VIEWED PRODUCTS

Pull-Up/Dip Station

8' Single 5" Post Swing Frame-1 Bay

Buffalo Grove

Double Dutch

AMERICAN PARKS COMPANY

1-800-381-4491
225 E. Virginia Suite 1
McKinney, TX 75069

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Phone: 800-695-2919
Fax: 800-211-5454
Email: info@buyboard.com



# Search Results

Search:

- (•) All
- ( ) Vendor Discounts Only
- ( ) Catalog Pricing Only

**Refine Your Search:**

Vendors
American Parks Company[X]
Price Range
Show all prices
Category
None Selected
Contract
None selected

**Additional Searches:**

Search by Vendor

Browse Contracts

Instructional Materials

Additional Resources

Show 25 results

Narrow Results:

| Vendor | Description | Pri |
|---|---|---|
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Playground Safety Surfacing | |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Playground Equipment | |

**Extended Product Information**

**Reference Number:** 423-13

**Part Number:** Catalog

**Vendor Website:** http://www.americanparkscompany.com

**Full Description:** 5% Discount Off of American Parks Co. pricelist for Playground Equipment

| | | |
|---|---|---|
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Playground & Park Amenities | |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Park Buildings & Shelters | |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Outdoor Bleacher & Seating Systems | |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Aquatic Playground & Pool Equipment | |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for All Other Parks & Recreation Equipment/Products | |

Showing 26 to 32 of 32 entries

First | Previous | 1 | 2 | Next | Last

Contact us 800-695-2919

Phone: 800-695-2919
Fax: 800-211-5454
Email: info@buyboard.com



# Search Results

Search:

- (•) All
- ( ) Vendor Discounts Only
- ( ) Catalog Pricing Only

**Refine Your Search:**

Vendors
American Parks Company[X]
Price Range
Show all prices
Category
None Selected
Contract
None selected

**Additional Searches:**

Search by Vendor

Browse Contracts

Instructional Materials

Additional Resources

Show 25 results Narrow Results:

| Vendor | Description | Pri |
|---|---|---|
| American Parks Company | 0% Discount Off American Parks Co. pricelist for All Repair/Replacement Parts | |
| American Parks Company | Hourly Rate for All Repair/Service Labor ($500.00 minimum) | |
| American Parks Company | Hourly Rate for All Repair/Service Labor | |
| American Parks Company | Installation of Playground Equipment | |

**Extended Product Information**

**Reference Number:** 423-13
**Part Number:** Installation
**Unit Measure:** EA
**Vendor Website:** http://www.americanparkscompany.com
**Full Description:** Installation of Playground Equipment

| | | |
|---|---|---|
| American Parks Company | Installation of Playground Equipment | |
| American Parks Company | Installation of Park Buildings & Shelters | |
| American Parks Company | Installation of Outdoor Scoreboards | |
| American Parks Company | Installation of Bleachers & Seating Systems | |
| American Parks Company | Installation of Bleachers & Seating Systems | |
| American Parks Company | Installation of All Other Park & Recreation Related Equipment/Products | |
| American Parks Company | Installation of All Other Park & Recreation Related Equipment/Products | |
| American Parks Company | 5% Discount Off UltraShelter pricelist for Park Buildings & Shelters | |
| American Parks Company | 5% Discount Off UltraShade pricelist for Shade Canopies & Structures | |
| American Parks Company | 5% Discount Off Playsystems pricelist for Water Parks | |
| American Parks Company | 5% Discount Off Playsystems pricelist for Aquatic Playground & Pool Equipment | |
| American Parks Company | 5% Discount Off Play Guard pricelist for Playground Safety Surfacing | |
| American Parks Company | 5% Discount Off Pinnacle Rubber pricelist for Playground Safety Surfacing | |
| American Parks Company | 5% Discount Off Frog Furnishings pricelist for Playground & Park Amenities | |

| | |
|---|---|
| American Parks Company | 5% Discount Off Child Works pricelist for All Other Parks & Recreation Equipment/Products |
| American Parks Company | 5% Discount Off Benito pricelist for Playground & Park Amenities |
| American Parks Company | 5% Discount Off Athletic Connection pricelist for Outdoor Scoreboards |
| American Parks Company | 5% Discount Off Athletic Connection pricelist for All Other Parks & Recreation Equipment/Products |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Water Parks |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Shade Canopies & Structures |
| American Parks Company | 5% Discount Off American Parks Co. pricelist for Playground Sports Equipment |

Showing 1 to 25 of 32 entries

First Previous 1 2 Next Last

Contact us 800-695-2919

Phone: 800-695-2919
Fax: 800-211-5454
Email: info@buyboard.com



# Vendor Contract Information

Proposal Document | Back

Search:

- All
- Vendor Discounts Only
- Catalog Pricing Only

**Refine Your Search:**

Vendors
American Parks Company[X]
Price Range
Show all prices
Category
None Selected
Contract
None selected

**Additional Searches:**

Search by Vendor

Browse Contracts

Instructional Materials

Additional Resources

| | |
|---|---|
| **Vendor Name:** | American Parks Company |
| **Address:** | 117 West Broadway |
| | Prosper, TX 75078 |
| **Phone Number:** | (800) 381-4491 |
| **Email:** | info@americanparkscompany.com |
| **Website:** | http://www.americanparkscompany.com |
| **Federal ID:** | 20-1794833 |
| **Contact:** | Martin McNeill |
| **Accepts RFQs:** | Yes |
| **Minority Owned Vendor:** | No |
| **Women Owned Vendor:** | No |
| **Contract Name:** | Parks & Recreation Equipment, Field Lighting Products & Installation |
| **Contract#:** | 423-13 |
| **Effective Date:** | 10/01/2013 |
| **Expiration Date:** | 09/30/2016 |
| **Payment Terms:** | Net 30 days |
| **Delivery Days:** | 30 |
| **Shipping Terms:** | Pre-paid and added to invoice |
| **Freight Terms:** | FOB Destination |
| **Ship Via:** | Common Carrier |
| **Region Served:** | All Texas Regions |
| **States Served:** | All States |
| **Quote Reference Number:** | 423-13 |
| **Return Policy:** | 25% restocking fee |
| **Regulatory Notice:** | Click to view Bonding Regulatory Notice |
| **Construction Services Advisory:** | Click to view the Construction Related Goods and Services Advisory |

Contact us 800-695-2919

**AI-43312** **Planning Department 12. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Raul E. Sesin, P.E. **Submitted By:** Nora Cavazos, PLANNING DEPT.

**Department:** PLANNING DEPT.

## Information

**CAPTION**

1. Preliminary Approval with Variance Request
a. Maiz Acres No. 5 Subdivision – Pct. 1 (Evon Harbison)

2. Preliminary Approval
a. Campbell Estates Subdivision – Pct. 1 (David Campbell)
b. Rojas Subdivision – Pct. 4 (Rafael Rojas)

3. Final Approval
a. Huisache Acres No. 10 Subdivision – Pct. 4 (Rick Harbison)
b. Idea Quest Subdivision – Pct. 4 (Idea Public School)
c. RSBR DG (FM 2812) Subdivision – Pct. 4 (Esdgar Cantu)
d. Aurora Valley Phase 3 Subdivision – Pct. 1 (Mike Rhodes)

4. Final Approval with Financial Guarantee
a. Eduardo's No. 12 Subdivision – Pct. 3 (Diana Izaguirre)

**BACKGROUND**

## Attachments

Maiz Acres No 5 - Preliminary
Campbell Estates - Preliminary
Rojas - Preliminary
Huisache Acres No. 10 - Final
Idea Quest - Final
RSBR DG FM 2812 - Final
Aurora Valley Phase 3 - Final
Eduardo's No. 12 - Final

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 04:30 PM |
| Glinda Pacheco | Glinda Pacheco | 02/27/2014 02:26 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Nora Cavazos Started On: 02/24/2014 02:31 PM

Final Approval Date: 02/28/2014

# HIDALGO COUNTY
# PLANNING DEPARTMENT

**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
**DATE: 03-04-2014**

PROPOSED **MAIZ ACRES NO. 5** SUBDIVISION, PRECINCT No. **1** .

ENGINEER: **MELDEN & HUNT, INC.** DEVELOPER: **EVON HARBISON**

☒ PRELIMINARY APPROVAL ☐ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☒ WITH VARIANCE

NUMBER OF LOTS: **29** ☒*SINGLE FAMILY ___ ☐*MULTI-FAMILY ___ ☐COMMERCIAL ___ ☐INSTITUTIONAL

LOCATION DESCRIPTION: **SOUTHEAST CORNER OF MOORE RD AND VAL VERDE RD**

SUBDIVISION LIES WITHIN THE: ☒*ETJ of* **DONNA** *and was approved by the P & Z and City Commission of said City*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **12-06-13** PROPERTY LIES WITHIN FLOOD ZONE: **"B"** AS PER FEMA.

DRAINAGE DESIGN: **Will be provided by a storm drainage pipe system discharging into an existing Donna Irrigation Ditch abutting East of the proposed subdivision which will be widened**

ROAD R.O.W. DEDICATION: **40 feet on to Val Verde Rd.**

H.C.R.O.W. PRELIMINARY APPROVAL DATE: **02-11-14** By, **Roy Gonzalez** PCT. 1 R.O.W. AGENT

H.C.H.D. PRELIMINARY APPROVAL DATE: **01-06-14** By, **Elizardo "Chardo" Ramos,** Environmental Health Division Manager

☒ OSSF & SOIL ANALYSIS WERE CONDUCTED BY: **Jose Angel Gonzalez**

SEWER SYSTEM: ☐OSSF HAVE BEEN INSTALLED AND INSPECTED BY HCHD ON: _____

WATER SERVICE PROVIDER: **North Alamo Water Supply Corp** LINE SIZE: **8"** LOCATION: **Val Verde Road**

H.C.O.E.C. FINAL APPROVAL DATE: **02-07-14** .: By **Martin Ramirez,** Environmental Compliance Coordinator

☒**LARGE CONSTRUCTION**

*The applicant has submitted the required NOI as per Part II, Section E of the TPDES General Permit for Construction Activities (TXR150000) along with a copy of the Erosion Control Plan for the proposed project.*

VARIANCE REQUEST ON: **Chapter 2.4 General Subdivision Design Section F Item 2. Requesting a variance NOT to have to place a cul-de-sac midway at 660 feet along Maiz Street. The length of the cul-de-sac street is approximately 1050 feet.**

STAFF RECOMMENDS:

☒ **Preliminary Approval with Variance Request** *subject to comments and future recommendations by planning, other departments and the approval of the City of* **Donna** .

☐ **Final Approval** *subject to recommendations other departments*

☐ **Final Approval** *with financial guarantee.*

* *This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules, Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*

MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
FRED L. KURTH • ALLAN F. BOOE • KELLEY A. HELLER-VELA
TBPE Firm # F-1435

February 19, 2014

Raul Sesin, Planning Director
**HIDALGO COUNTY PLANNING DEPT.**
1304 S. 25th Street
Edinburg TX 78539

**Re: Maiz Acres #5 Subdivision – Cul-De-Sac Variance Request**

Dear Mr. Sesin:

On behalf of the developer, RHRW, Ltd. (Rick & Evon Harbison), we are requesting a variance not to have to place a cul-de-sac midway along Maiz Street. The length of the cul-de-sac street is approximately 1,050.

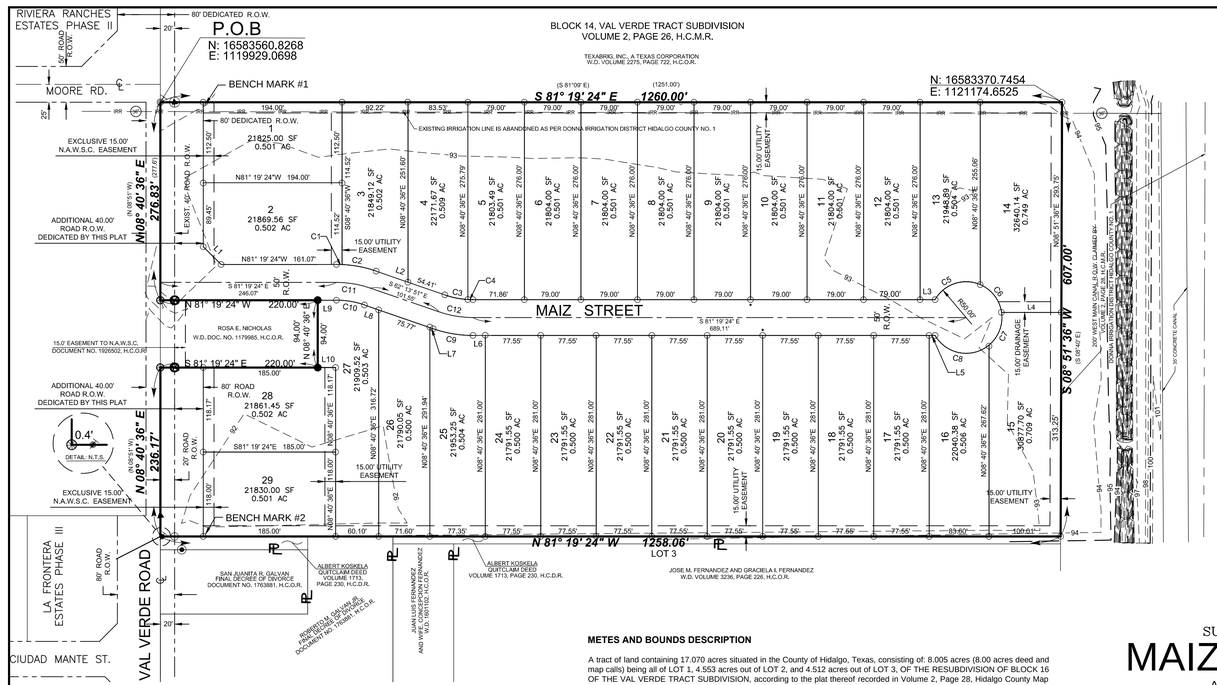
Please consider this request and advise us as soon as possible on your decision. If you have any questions or comments, please contact our office. Thank you.

Sincerely,
MELDEN & HUNT, INC.

Fred L Kurth 2-19-14

Fred L. Kurth, P.E., R.P.L.S.
President

cc: RHRW, Ltd. (Rick & Evon Harbison)


RIVIERA RANCHES ESTATES PHASE II
80' DEDICATED R.O.W.
P.O.B
N: 16583560.8268
E: 1119929.0698
BLOCK 14, VAL VERDE TRACT SUBDIVISION
VOLUME 2, PAGE 26, H.C.M.R.
TEXABRO, INC., A TEXAS CORPORATION
W.D. VOLUME 2275, PAGE 722, H.C.O.R.
BENCH MARK #1
N: 16583370.7454
E: 1121174.6525
S 81° 19' 24" E 1260.00'
(S 81°09' E)
(1251.00')
MOORE RD.
EXCLUSIVE 15.00' N.A.W.S.C. EASEMENT
80' DEDICATED R.O.W.
EXISTING IRRIGATION LINE IS ABANDONED AS PER DONNA IRRIGATION DISTRICT HIDALGO COUNTY NO. 1
15.00' UTILITY EASEMENT
ADDITIONAL 40.00' ROAD R.O.W. DEDICATED BY THIS PLAT
EXIST. 60' ROAD R.O.W.
N81° 19' 24"W 194.00'
N81° 19' 24"W 161.07'
N08° 40' 36" E 276.83'
N08° 40' 36" E 236.17'
S 81° 19' 24" E 246.07'
N 81° 19' 24" W 220.00'
S 81° 19' 24" E 220.00'
S 81° 19' 24" E 689.11'
S 08° 51' 36" W 607.00'
MAIZ STREET
ROSA E. NICHOLAS
W.D. DOC. NO. 1179985, H.C.O.R.
15.0' EASEMENT TO N.A.W.S.C. DOCUMENT NO. 1926502, H.C.O.R.
20' WEST MAIN CANAL & GUY CLAIMED BY JUAN LUIS FERNANDEZ AND WIFE, CONSTANCIO FERNANDEZ AND VALENTINA CUNTRO
DONNA IRRIGATION DISTRICT HIDALGO COUNTY NO. 1
30' CONCRETE CANAL
15.00' DRAINAGE EASEMENT
0.4'
DETAIL: N.T.S.
20' ROAD R.O.W.
BENCH MARK #2
N 81° 19' 24" W 1258.06'
LOT 3
JOSE M. FERNANDEZ AND GRACIELA E FERNANDEZ
W.D. VOLUME 3236, PAGE 226, H.C.O.R.
SAN JUANITA R. GALVAN
FINAL DECREE OF DIVORCE
DOCUMENT NO. 1763881, H.C.O.R.
ALBERT KOSKELA
QUITCLAIM DEED
VOLUME 1713, PAGE 230, H.C.O.R.
ROBERTO M. ISRAEL JR.
FINAL DECREE OF DIVORCE
DOCUMENT NO. 1783911, H.C.O.R.
JUAN LUIS FERNANDEZ AND WIFE, CONSTANCIO FERNANDEZ AND VALENTINA CUNTRO
LA FRONTERA ESTATES PHASE III
80' ROAD R.O.W.
VAL VERDE ROAD
CIUDAD MANTE ST.
20'
21
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21825.00 SF 0.501 AC
21869.56 SF 0.502 AC
21849.12 SF 0.502 AC
22171.87 SF 0.509 AC
21803.49 SF 0.501 AC
21804.00 SF 0.501 AC
21804.00 SF 0.501 AC
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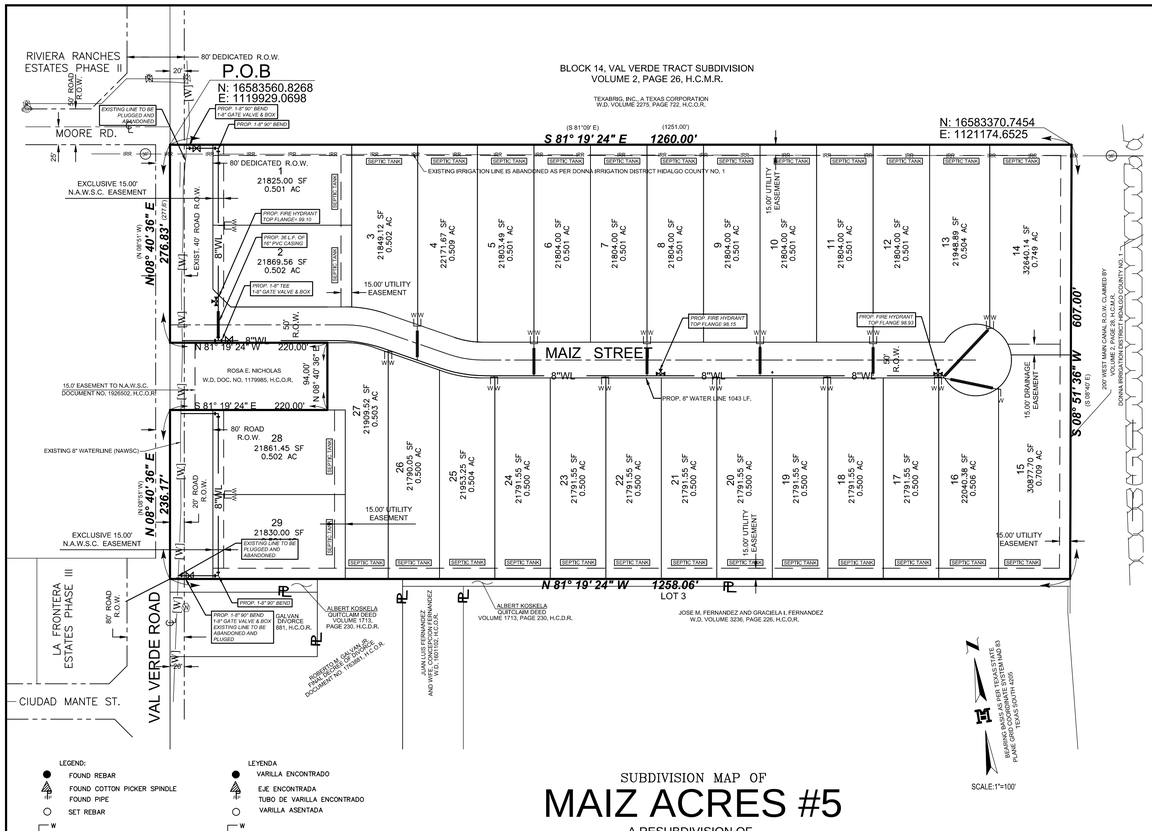
21804.00 SF 0.501 AC
21804.00 SF 0.501 AC
21804.00 SF 0.501 AC
21945.89 SF 0.504 AC
326414 SF 0.749 AC
21909.52 SF 0.503 AC
21790.05 SF 0.500 AC
21953.29 SF 0.504 AC
21791.55 SF 0.500 AC
22040.38 SF 0.506 AC
21830.00 SF 0.501 AC
N08° 40' 36" E
N08° 40' 30" E
N08° 40' 30" W
N08° 40' 36" W
S08° 40' 36" W
S08° 40' 30" W
S81° 19' 24" E 185.00'
S81° 19' 24" E 185.00'
N81° 19' 24" W 185.00'
N81° 19' 24" W 185.00'
S81° 19' 24" E

# MAP OF WATER DISTRIBUTION SYSTEM
# MAPA DE SISTEMA DE DISTRIBUCION DE AGUA




LEGEND:
- FOUND REBAR
- FOUND COTTON PICKER SPINDLE
- FOUND PIPE
- SET REBAR
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE WATER SERVICE
- PROPOSED SEPTIC TANK

LEYENDA
- VARILLA ENCONTRADO
- EJE ENCONTRADA
- TUBO DE VARILLA ENCONTRADO
- VARILLA ASENTADA
- SERVICIO DOBLE DE AGUA PROPUESTO
- SERVICIO INDIVIDUAL DE AGUA PROPUESTO
- TANQUE SEPTICO

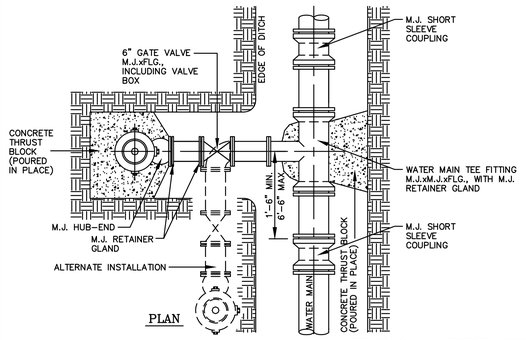
TYPICAL DETAILS OF SERVICE LINES AND WATER METER BOX

DETALLE TIPICO DE LINEAS DE SERVICIO Y MEDIDORES DE AGUA

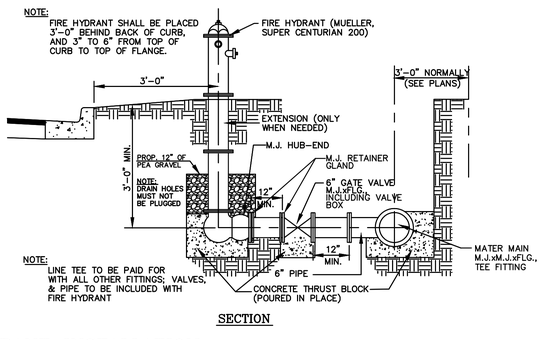
SUBDIVISION MAP OF

# MAIZ ACRES #5

A RESUBDIVISION OF
17.070 ACRES CONSISTING OF: 8.005 ACRES BEING ALL OF LOT 1,
4.553 ACRES OUT OF LOT 2, AND 4.512 ACRES OUT OF LOT 3,
OF THE RESUBDIVISION OF BLOCK 16
OF THE VAL VERDE TRACT SUBDIVISION,
VOLUME 2, PAGE 28, H.C.M.R.
HIDALGO COUNTY, TEXAS



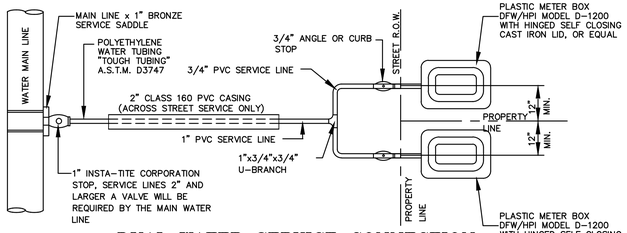

PLAN




SECTION

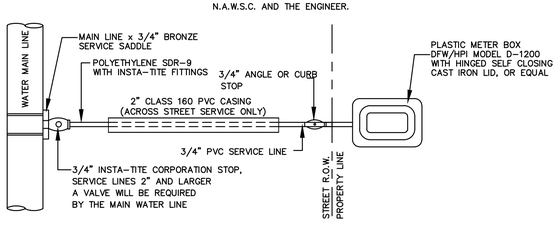
## TYPICAL FIRE HYDRANT INSTALLATION

N.T.S.



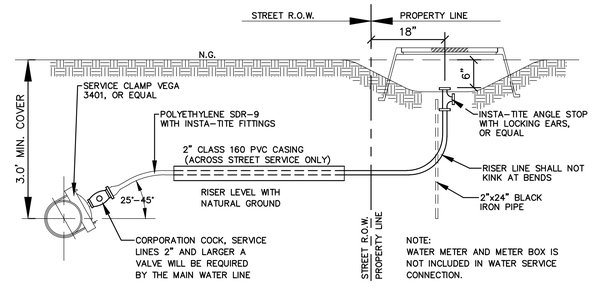

## DUAL WATER SERVICE CONNECTION

N.T.S.




## SINGLE WATER SERVICE CONNECTION

N.T.S.




## TYPICAL WATER SERVICE CONNECTION ELEVATION

N.T.S.

ENGINEERING REPORT FOR MAIZ ACRES #5
BY: FRED L. KURTH

WATER SUPPLY: DESCRIPTION, COST, AND OPERABILITY DATE:

MAIZ ACRES #5 SUBDIVISION WILL BE PROVIDED WITH POTABLE WATER BY NORTH ALAMO WATER SUPPLY CORPORATION (N.A.W.S.C.). THE SUBDIVIDER AND N.A.W.S.C. HAVE ENTERED INTO A CONTRACT IN WHICH N.A.W.S.C. HAS PROMISED TO PROVIDE SUFFICIENT WATER TO THE SUBDIVISION FOR AT LEAST 30 YEARS AND N.A.W.S.C HAS PROVIDED DOCUMENTATION TO SUFFICIENTLY ESTABLISH THE LONG TERM QUANTITY AND QUALITY OF THE AVAILABLE WATER SUPPLIES TO SERVE THE FULL DEVELOPMENT OF THIS SUBDIVISION.

N.A.W.S.C. HAS AN EXISTING 8" DIAMETER WATER LINE RUNNING ALONG THE EAST SIDE OF THE RIGHT-OF-WAY OF VAL VERDE ROAD. THE WATER SYSTEM FOR MAIZ ACRES #5 CONSISTS OF AN 8" DIAMETER WATER LINE THAT TAPS INTO THE EXISTING 8" LINE. THIS 8" LINE THEN RUNS EAST ALONG THE SOUTH SIDE OF MAIZ STREET RIGHT-OF-WAY ENDING WITH A FIRE HYDRANT AT THE NORTHWEST CORNER OF LOT 16.

WATER DISTRIBUTION FOR THE MAIZ ACRES #5 CONSISTS OF FOURTEEN (14) -1" DIAMETER DUAL SERVICE LINES THAT RUN IN PAIRS TO LOTS BEFORE SPLITTING INTO ¾" DIAMETER SERVICE LINES AND ONE (1)-¾" DIAMETER SINGLE SERVICE LINE. SAID SERVICES TERMINATE AT THE WATER METER BOXES FOR EACH LOT. THE 8" LINE, THE DUAL SERVICES AND ¾" SINGLE SERVICES, AND THE METER BOXES HAVE ALREADY BEEN INSTALLED, AT A TOTAL COST OF $36,555.00, OR $1,260.52 PER LOT. IN ADDITION, THE SUBDIVIDER HAS PAID N.A.W.S.C. THE SUM OF $36,555.00, WHICH COVERS THE $1,260.52 COST PER LOT AS STATED IN THE 30 YEAR WATER SERVICE AGREEMENT WHICH SUM REPRESENTS THE TOTAL COST OF WATER METER, RIGHTS ACQUISITION FEES, AND ALL MEMBERSHIP OR OTHER FEES ASSOCIATED WITH CONNECTING THE INDIVIDUAL LOTS IN THE SUBDIVISION TO N.A.W.S.C. UPON REQUEST BY THE LOT OWNER, N.A.W.S.C. WILL PROMPTLY INSTALL AT NO CHARGE THE WATER METER FOR THAT LOT. THE SUBDIVIDER HAS INSTALLED THREE (3) FIRE HYDRANTS AT A UNIT COST OF $3,250.00 FOR A TOTAL COST OF $9,750.00. THE ENTIRE WATER FACILITIES HAVE BEEN APPROVED AND ACCEPTED BY N.A.W.S.C. AND SAID DISTRIBUTION SYSTEM IS OPERABLE AS OF THE DATE OF THE RECORDING OF THE PLAT.

SEWAGE FACILITIES DESCRIPTION; COST AND OPERABILITY DATES

SEWAGE FROM MAIZ ACRES #5 SUBDIVISION WILL BE TREATED BY INDIVIDUAL ON-SITE SEWAGE FACILITIES ("OSSF") CONSISTING OF A STANDARD DESIGN DUAL COMPARTMENT SEPTIC TANK AND A DRAIN FIELD ON EACH LOT. JOSE A. GONZALEZ PROFESSIONAL ENGINEER NO. 12258, HAS EVALUATED THE SUITABILITY OF THE SUBDIVISION SITE FOR OSSF AND SUBMITTED A REPORT CONCLUDING THAT THE SITE IS SUITABLE FOR OSSF. THE REPORT WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT. EACH LOT HAS ADEQUATE AREA FOR A REPLACEMENT DRAIN FIELD.

SOIL EVALUATION REPORT:

EACH LOT IN THE PROPOSED SUBDIVISION IS AT LEAST 1/2 ACRE IN SIZE. THE NATURAL RESOURCE CONSERVATION SERVICE SOIL SURVEY BOOK INDICATED A SANDY CLAY LOAM SOIL FOR THE AREA. AT LEAST TWO SOIL EXCAVATIONS WERE PERFORMED ON THE SITE, AT OPPOSITE ENDS OF THE PROPOSED DISPOSAL AREA. (ADDITIONAL BORINGS WERE UNNECESSARY BECAUSE THE SOILS ARE VERY UNIFORM WITHIN THIS LIMIT AREA). THE SOIL IS A UNIFORM SANDY CLAY LOAM EXTENDING UP TO 36" BELOW THE BOTTOM OF ANY PROPOSED EXCAVATIONS. THERE IS NO INDICATION OF GROUND WATER OR A RESTRICTIVE LAYER WITHIN 24" OF BOTTOM OF THE PROPOSED EXCAVATIONS. THE SUBDIVISION DRAINS WELL.

THE COST TO INSTALL A SEPTIC SYSTEM ON AN INDIVIDUAL LOT IS $ 1,200.00, INCLUDING THE COST FOR THE REQUIRED PERMIT AND LICENSE. ALL OSSFS HAVE BEEN INSTALLED AS OF THE TIME OF APPLICATION FOR FINAL PLAT APPROVAL AT A TOTAL COST OF $34,800.00 . THE HIDALGO COUNTY HEALTH DEPARTMENT HAS INSPECTED AND APPROVED THE INSTALLATION OF ALL OSSF ON _____ 20____ . LOTS __ THROUGH __ SHALL HAVE OFFS INSTALLED BY LOT OWNERS AT BUILDING PERMIT STAGE.

ENGINEER CERTIFICATION:

BY MY SIGNATURE BELOW, I CERTIFY THAT THE WATER AND SEWAGE SERVICE FACILITIES DESCRIBED ABOVE ARE IN COMPLIANCE WITH THE MODEL RULES ADOPTED UNDER SECTION 16.343, WATER CODE. I CERTIFY THAT THE COSTS TO INSTALL THE WATER AND THE UNCONSTRUCTED ON-SITE SEWAGE FACILITIES, DISCUSSED ABOVE, ARE AS FOLLOWS:

WATER FACILITIES – THESE FACILITIES FULLY CONSTRUCTED, WITH THE INSTALLATION OF WATER METERS, WILL COST A GRAND TOTAL OF $46,305.00 WHICH EQUALS TO $1,596.72 PER LOT.

SEWAGE FACILITIES – SEPTIC SYSTEM IS ESTIMATED TO COST $1,200.00 PER LOT (ALL INCLUSIVE), FOR A TOTAL OF $34,800,000 FOR THE ENTIRE SUBDIVISION.

_____ _____
ENGINEER'S SIGNATURE DATE

COST ESTIMATE:

| | |
|---|---|
| PAVING IMPROVEMENTS: | $ 103,304.00 |
| DRAINAGE IMPROVEMENTS: | $ 29,125.00 |
| WATER DISTRIBUTION: | $ 46,305.00 |
| SEPTIC TANK SEWER IMPROVEMETNS / OSSF: | $ 34,800.00 |

ESTIMACION DE COSTOS:

| | |
|---|---|
| PAVIMENTACION DE CALLES: | $ 103,304.00 |
| DREAJE PLUVIAL: | $ 29,125.00 |
| SERVICIO DE AGUA POTABLE: | $ 46,305.00 |
| SERVICIO DE DRENAJE SANITARIO | $ 34,800.00 |

REPORTE DE INGENIERIA DE MAIZ ACRES #5
POR: FRED L. KURTH

PROVISIÓN DE AGUA: DESCRIPCIÓN, GASTOS Y FECHAS DE INICIO

LA SUBDIVISIÓN MAIZ ACRES #5 RECIBIRÁ SU PROVISIÓN DE AGUA DE NORTH ALAMO WATER SUPPLY CORPORATION (LA COMPAÑÍA DE AGUA (N.A.W.S.C.). EL DUEÑO DE LA SUBDIVISIÓN Y N.A.W.S.C. HAN FIRMADO UN CONTRATO POR EL CUAL LA SUBDIVISIÓN RECIBIRÁ SU PROVISIÓN DE AGUA POR LOS PRÓXIMOS 30 AÑOS. N.A.W.S.C. HA PRESENTADO DOCUMENTACIÓN PARA DEMOSTRAR A LARGO PLAZO LA CANTIDAD Y CALIDAD DE AGUA ACCESIBLE PARA SERVIR EL FUTURO DESARROLLO DE LA SUBDIVISIÓN.

EL SISTEMA DE PROVISIÓN DE AGUA PARA LA SUBDIVISIÓN MAIZ ACRES #5 CONSISTE DE UN CONDUCTO DE AGUA DE 8 PULGADAS DE DIÁMETRO QUE PASA POR EL LADO ESTE DEL DERECHO DE VIADE (RIGHT OF WAY) DE LA CARRETERA VAL VERDE ROAD. EL SISTEMA DE PROVISIÓN DE AGUA DE LA SUBDIVISIÓN MAIZ ACRES #5 CONSISTE DE UN CONDUCTO DE AGUA DE 8 PULGADAS DE DIÁMETRO QUE SE CONECTA CON EL CONDUCTO DE AGUA EXISTENTE DE 8 PULGADAS. ESTA LÍNEA DE 8 PULGADAS CUAL SIGUE HACIA EL ESTE POR EL LADO SUR DEL DERECHO DE VÍADE DE LA CALLE _____, TERMINARA CON UNA VÁLVULA DE FLUJO DE 2" PULGADAS DE DIÁMETRO LOCALIZADA AL NORESTE DE LOTE 16.

EL CONDUCTO DE AGUA DE 8 PULGADAS SE PRODUCEN CATORCE CONDUCTOS DOBLES DE AGUA DE 1 PULGADA DE DIÁMETRO PARA CADA DOS LOTES. ESTOS CONDUCTOS SE SEPARAN PARA PRODUCIR DOS CONDUCTOS DE AGUA DE ¾ DE PULGADA DE DIÁMETRO PARA CADA LOTE Y UN CONDUCTO INDIVIDUALE DE AGUA DE ¾ DE PULGADA DE DIÁMETRO PARA CADA LOTE. YA SE HAN INSTALADO LOS CONDUCTOS DE AGUA DE 8 PULGADAS DE DIÁMETRO. LOS DOBLE-CONDUCTOS DE AGUA DE 1 PULGADA DE DIÁMETRO, EL CONDUCTO DE ¾ DE PULGADA DE DIÁMETRO, Y LOS MEDIDORES MECÁNICOS DE AGUA A UN COSTO TOTAL DE $36,555.00 O $1,260.52 POR LOTE. EL DUEÑO DE LA SUBDIVISIÓN TAMBIÉN LE HA PAGADO A LA COMPAÑÍA N.A.W.S.C. $36,555.00, QUE CUBRE EL COSTO DEL MEDIDOR MECÁNICO DE AGUA PARA CADA LOTE, $1,260.52. ESTE PRECIO INCLUYE EL COSTO DE LA INSTALACIÓN DE CADA MEDIDOR Y LOS GASTOS DE CONEXIÓN. CUANDO EL DUEÑO DE CADA LOTE SOLICITE UN MEDIDOR DE AGUA, LA COMPAÑÍA N.A.W.S.C. LO INSTALARA SIN ALGÓN GASTO AL DUEÑO. EL DUEÑO DE LA SUBDIVISIÓN TAMBIÉN HA INSTALADO 3 BOCAS DE RIEGO (FIRE HYDRANT) A UN COSTO DE $3,250.00 POR CADA UNO CUAL GASTA UNA CANTIDAD TOTAL $9,750.00. EL SISTEMA DE AGUA ESTARÁ EN FUNCIONAMIENTO COMPLETO ANTES O EN LA FECHA, EN LA CUAL LA SUBDIVISIÓN SEA REGISTRADA EN EL CONDADO DE HIDALGO.

DRENAJE: DESCRIPCIÓN, GASTOS Y FECHA DE INICIO PARA FACILITAR EL DRENAJE PARA LA SUBDIVISIÓN

SE INSTALARA UNA FOSA SÉPTICA EN CADA SOLAR. ESTA FOSA SETICA CONSISTE DE UN TANQUE SÉPTICO DE MODELO DUAL Y DE UN CAMPO DE DRENAJE PARA EL SOLAR. EL INGENIERO AUTOR DE ESTE DOCUMENTO HA EVALUADO EL ÁREA DONDE SE ENCUENTRA LA SUBDIVISIÓN Y HA PREPARADO UN REPORTE QUE CONCLUYE QUE ESTE TERRENO ES ADECUADO PARA ESAS FOSAS SÉPTICAS (OSSF). EL REPORTE FUE APROBADO POR EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO (HIDALGO COUNTY HEALTH DEPARTMENT) SEGÚN EL REPORTE.

CADA LOTE EN LA SUBDIVISIÓN MIDE MEDIO ACRE. SE HICIERON DOS ES EXCAVACIONES DE EVALUACIÓN EN LUGARES OPUESTOS EN LA SUBDIVISIÓN (EXCAVACIONES ADICIONALES NO FUERON NECESARIAS PORQUE EL TERRENO EN ESTA ÁREA ES SIGNIFICANTEMENTE UNIFORME). EL TERRENO ES UNIFORME (TERRENO ARENOSO ARCILLOSO Y SUELO FRANCO) Y SE EXTIENDE A 36 PULGADAS BAJO TODAS LAS EXCAVACIONES PROPUESTAS. NO EXISTE EVIDENCIA DE AGUA 24 PULGADAS MAS ARRIBA DE LO MAS BAJO DE LAS EXCAVACIONES PROPUESTAS. EL AGUA EN ESTA ÁREA FLUYE BIEN.

EL COSTO TOTAL PARA LA INSTALACIÓN DE UN SISTEMA INDIVIDUAL DE FOSAS SÉPTICAS POR SOLAR SON $1,200.00 DÓLARES, INCLUYENDO EL COSTO DEL PERMISO REQUERIDO Y LICENCIA. EN ESTOS MOMENTOS TODAS LAS FOSA SÉPTICAS HAN SIDO INSTALADAS EN EL PROCESO DE LA APROBACIÓN FINAL. A UN COSTO TOTAL DE $ $34,800.00. EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO HA INSPECCIONADO TODOS LAS FOSAS SÉPTICAS Y AH APROBADO LA INSTALACIÓN DE LAS FOSAS SÉPTICAS DESDE (FECHA DE INSPECCIÓN). LOTES ____ AL ____ SE LE INSTALARA LAS FOSAS SEPTICAS EN EL TEIMPO DEL PERMISO DE CONSTRUCCION.

CERTIFICACIÓN:

CON MI FIRMA, CERTIFICO QUE LOS SERVICIOS Y SISTEMAS DE AGUA Y DE DRENAJE, DESCRITOS EN ESTE DOCUMENTO CUMPLEN CON LAS MODEL SUBDIVISIÓN RULES (LAS REGLAS GOBERNANDO A LAS SUBDIVISIONES), ADOPTADAS EN LA SECCIÓN 16.343 DEL TEXAS WATER CODE (CÓDIGO DE AGUA DE TEXAS). CERTIFICO QUE LOS GASTOS PARA INSTALAR LOS SISTEMAS DE AGUA Y DE DRENAJE SON:

AGUA: EL SISTEMA/SERVICIO DE AGUA SERA INSTALADO Y COMPLETAMENTE CONSTRUIDO MENOS EL MEDIDOR MECÁNICO DE AGUA QUE COSTARA UN TOTAL DE $46,305.00 O $1,596.72 POR LOTE

DRENAJE: SE ESTIMA QUE LA FOSA SÉPTICA COSTARA $1,200.00 A UN COSTO TOTAL DE $34,800.00 TODA LA SUBDIVISIÓN.

_____ _____
ENGINEER'S SIGNATURE DATE DATE

SUBDIVIDER CERTIFICATION

1. BY COMPLETING THE IMPROVEMENTS DESCRIBED ON THE PLAT, SUBDIVIDER WILL COMPLY WITH MINIMUM STATE STANDARDS AND THAT (a) WATER QUALITY AND CONNECTIONS INCLUDING WATER METERS AND OR WATER WELLS FOR EACH LOT(S) MEET SUCH STANDARDS AND (b) SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS MEET OR WILL MEET SUCH STANDARDS AND WILL BE CONSTRUCTED IN ACCORDANCE WITH STATE AND COUNTY REGULATIONS.

SUBDIVIDER STATEMENT:

1. I, EVON HARBISON, SUBDIVIDER OF MAIZ ACRES #5 HEREBY CERTIFY SEWER PERMITS HAVE BEEN PAID AND COPIES OF RECEIPTS ARE ON FILE WITH THE HIDALGO COUNTY HEALTH DEPARTMENT THAT ANY ADEQUATE DRINKING WATER SOURCE IS IMMEDIATELY AVAILABLE TO EACH LOT OF THE TYPE, QUALITY & QUANTITY TO ENABLE EACH PERSON PURCHASING A LOT HAVE ADEQUATE WATER TO COMPLY WITH THE REGULATIONS AND THE LAWS OF THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS.

_____
OWNER: EVON HARBISON

STATE OF TEXAS
COUNTY OF HIDALGO:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED EVON HARBISON KNOWN TO ME THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO BE THAT HE EXECUTED THE SAME FOR PURPOSED AND CONSIDERATION THEREIN STATED,GEVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE

_____DAY OF _____20_____.

_____
NOTARY PUBLIC
MY COMMISSION EXPIRES_____


MELDEN & HUNT, INC.
TEXAS REGIST. F-1435

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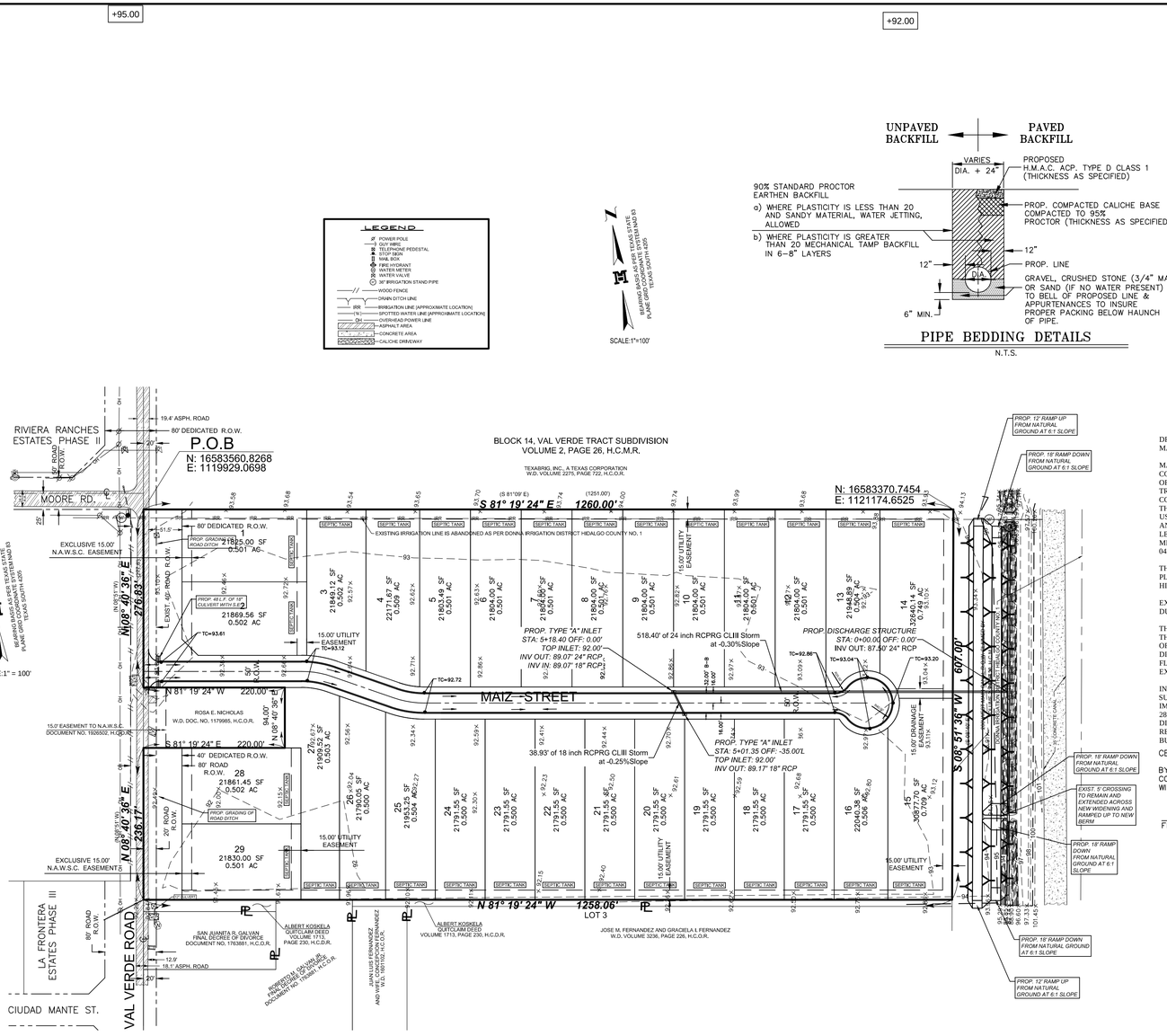
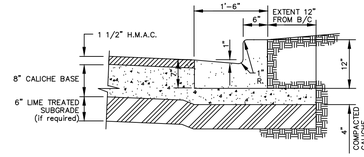




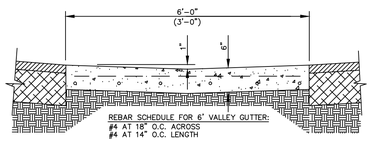


## PIPE BEDDING DETAILS

N.T.S.



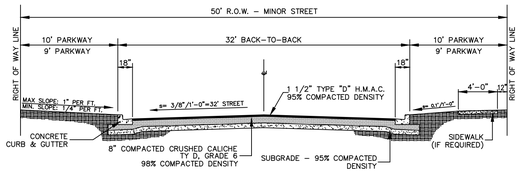

## SECTION "A-A" – CONCRETE CURB & GUTTER




## SECTION "C-C" – CONCRETE VALLEY GUTTER

GENERAL NOTES:

1. ALL CONCRETE WORK SHALL BE TREATED WITH MEMBRANE CURING COMPOUND TYPE 2 WHITE PIGMENTED IN ACCORDANCE w/ THD 1972 SPECIFICATIONS ITEM 531. CONSIDERED INCIDENTAL TO CONCRETE WORK.
2. 1/2" EXPANSION JOINTS REQUIRED AT 70' c.c. AND AT THE BEGINNING AND END OF ALL RADII. CONTRACTION JOINTS SHALL NOT EXCEED 10' c.c.




## TYPICAL STREET CROSS SECTION

N.T.S.

DRAINAGE STATEMENT
MAIZ ACRES # 5

MAIZ ACRES # 5 IS A 17.070 ACRES TRACT OF LAND SITUATED IN THE COUNTY OF HIDALGO, TEXAS, CONSISTING OF: 8.005 ACRES (8.00 ACRES DEED AND MAP CALLS) BEING ALL OF LOT 1, 4.553 ACRES OUT OF LOT 2, AND 4.512 ACRES OUT OF LOT 3, OF THE RESUBDIVISION OF BLOCK 16 OF THE VAL VERDE TRACT SUBDIVISION, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2, PAGE 38, HIDALGO COUNTY MAP RECORDS. THE PROPERTY IS LOCATED ALONG THE EAST SIDE OF VAL VERDE ROAD AT THE INTERSECTION WITH MOORE ROAD. THE PROPERTY IS CURRENTLY FARM LAND WITH A PROPOSED USE OF 29 RESIDENTIAL LOTS. AND IS IN ZONE "B" AREAS BETWEEN LIMITS OF THE 100-YEAR FLOOD AND 500-YEAR FLOOD; OR CERTAIN AREAS SUBJECT TO 100-YEAR FLOODING WITH AVERAGE DEPTHS LESS THAN ONE(1) FOOT OR WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN ONE SQUARE MILE; OR AREAS PROTECTED BY LEVEES FROM THE BASE FLOOD. COMMUNITY-PANEL NUMBER: 480334 0425 C MAP REVISED: NOVEMBER 16, 1982.

THE SOILS ARE SANDY CLAY LOAM WHICH IS MODERATELY PERVIOUS WITH A RELATIVELY LOW PLASTICITY INDEX. THIS SOIL IS IN HYDROLOGIC GROUP "B". (SEE EXCERPTS FROM "SOIL SURVEY OF HIDALGO COUNTY, TEXAS")

EXISTING RUNOFF IS BY SURFACE FLOW IN A SOUTHERLY DIRECTION AND HAS A RUNOFF OF 4.12 C.F.S. DURING THE 10-YEAR STORM FREQUENCY AS PER THE ATTACHED CALCULATIONS.

THE EXISTING DRAINAGE FOR MAIZ ACRES # 5 CONSISTS OF SURFACE RUNOFF FROM THE LOTS INTO THE PROPOSED STREETS. THE STREET SHALL CHANNEL RUNOFF INTO A PROPOSED DRAINAGE SYSTEM OF TYPE "A" INLETS AND STORM PIPES RANGING IN SIZE FROM 18" TO 24" THAT FLOW EASTERLY AND DISCHARGE INTO AN EXISTING DONNA IRRIGATION DISTRICT DRAINAGE DITCH. THE DRAINAGE DITCH FLOWS SOUTH, ULTIMATELY DISCHARGING INTO THE MAIN FLOODWATER CHANNEL. (SEE ATTACHED EXHIBITS AND DETAILS)

IN ACCORDANCE WITH THE CITY OF DONNA DRAINAGE POLICY, THE PEAK RATE OF RUNOFF IN THE SUBDIVISION WILL NOT BE INCREASED DURING THE 10-YEAR RAINFALL EVENT DUE TO THE IMPROVEMENTS IN THIS SUBDIVISION. THEREFORE AS PER ATTACHED CALCULATIONS THE REQUIRED 28,254 CUBIC FEET OF DETENTION WILL BE PROVIDED WITHIN THE WIDENING OF EXISTING DRAIN DITCH ALONG THE EAST SIDE OF THIS SUBDIVISION. THE DRAINAGE AND DETENTION PLAN WILL BE REVIEWED BY THE HIDALGO COUNTY PLANNING DEPARTMENT PRIOR TO THE ISSUANCE OF THE BUILDING PERMIT.

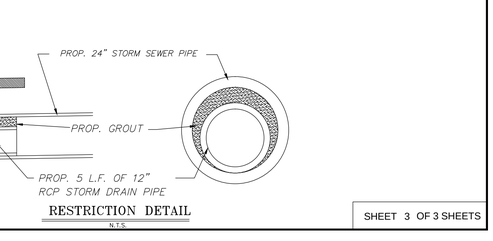
CERTIFICATION:

BY MY SIGNATURE BELOW, I CERTIFY THAT THE 100 YEAR FLOODPLAIN AS DESCRIBED IN COMMUNITY PANEL NUMBER 480334 0425 C, REVISED NOVEMBER 16, 1982 IS CONTAINED WITHIN THE WIDENING OF EXISTING DRAIN DITCH ADJACENT TO THIS SUBDIVISION.

FRED L. KURTH, PE # 54151 DATE:

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

STATE OF TEXAS
FRED L. KURTH
54151
LICENSED PROFESSIONAL ENGINEER




## H.C.D.D.#1 STORM DISCHARGE STRUCTURE

N.T.S.

*MAP OF TOPOGRAPHY AND DRAINAGE:*
*MAPA DE TOPOGRAFIA Y DESAGUE:*

SUBDIVISION MAP OF

# MAIZ ACRES #5

A RESUBDIVISION OF
17.070 ACRES CONSISTING OF: 8.005 ACRES BEING ALL OF LOT 1,
4.553 ACRES OUT OF LOT 2, AND 4.512 ACRES OUT OF LOT 3,
OF THE RESUBDIVISION OF BLOCK 16
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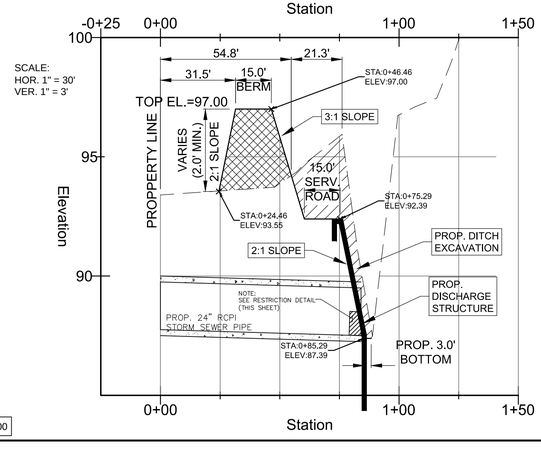


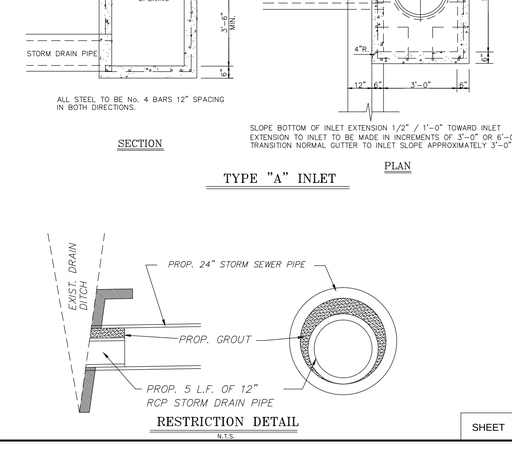


## TYPE "A" INLET




## RESTRICTION DETAIL

N.T.S.

MELDEN & HUNT, INC.
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# HIDALGO COUNTY
# PLANNING DEPARTMENT

**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
**DATE: 03-04-2014**

PROPOSED **CAMPBELL ESTATES** SUBDIVISION, PRECINCT No. **1** .

ENGINEER: **NAIN ENGINEERING** DEVELOPER: **DAVID CAMPBELL**

☒ PRELIMINARY APPROVAL ☐ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: **4** ☒*SINGLE FAMILY ___ ☐*MULTI-FAMILY ___ ☐COMMERCIAL ___ ☐INSTITUTIONAL

LOCATION DESCRIPTION: **SOUTH SIDE OF ROOSEVELT (MILE 12 ½ NORTH RD) APPROX. ¼ MILE EAST OF VAL VERDE RD**

SUBDIVISION LIES WITHIN THE:
☐ *The rural area of the County.*
☒ *ETJ of* **DONNA** *and was approved administratively by said City.*
☐ *ETJ of* _____ *and was approved by the P & Z and City Commission of said City*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **01-14-14** PROPERTY LIES WITHIN FLOOD ZONE: **"C"** AS PER FEMA.

DRAINAGE DESIGN: **Drainage detention will be accomplished on the natural low ares of the large lots.**

DISTANCE TO DRAIN DITCH: **Adjacent to the South subdivision property line**

ROAD R.O.W. DEDICATION: **30 feet onto Roosevelt Road (Mile 12 ½ North Rd.)**

H.C.R.O.W. PRELIMINARY APPROVAL DATE: **02-12-14** By, **Roy Gonzalez** PCT. 1 R.O.W. AGENT

H.C.H.D. PRELIMINARY APPROVAL DATE: **02-04-14** By, **Elizardo "Chardo" Ramos,** Environmental Health Division Manager

☒ OSSF & SOIL ANALYSIS WERE CONDUCTED BY: **Jose Angel Gonzalez**

SEWER SYSTEM: ☐OSSF HAVE BEEN INSTALLED AND INSPECTED BY HCHD ON: _____

WATER SERVICE PROVIDER: **North Alamo Water Supply Corp** LINE SIZE: **2"** LOCATION: **Rosevelt Road**

H.C.O.E.C. FINAL APPROVAL DATE: **02-06-14** .: By **Martin Ramirez,** Environmental Compliance Coordinator

☒ **LARGE CONSTRUCTION**

*The applicant has submitted the required NOI as per Part II, Section E of the TPDES General Permit for Construction Activities (TXR150000) along with a copy of the Erosion Control Plan for the proposed project.*

STAFF RECOMMENDS:

☒ **Preliminary Approval** *subject to comments and future recommendations by planning, other departments and the approval of the City of* **Donna** .

☐ **Preliminary Approval** *subject comments and future recommendations by planning and other Departments*

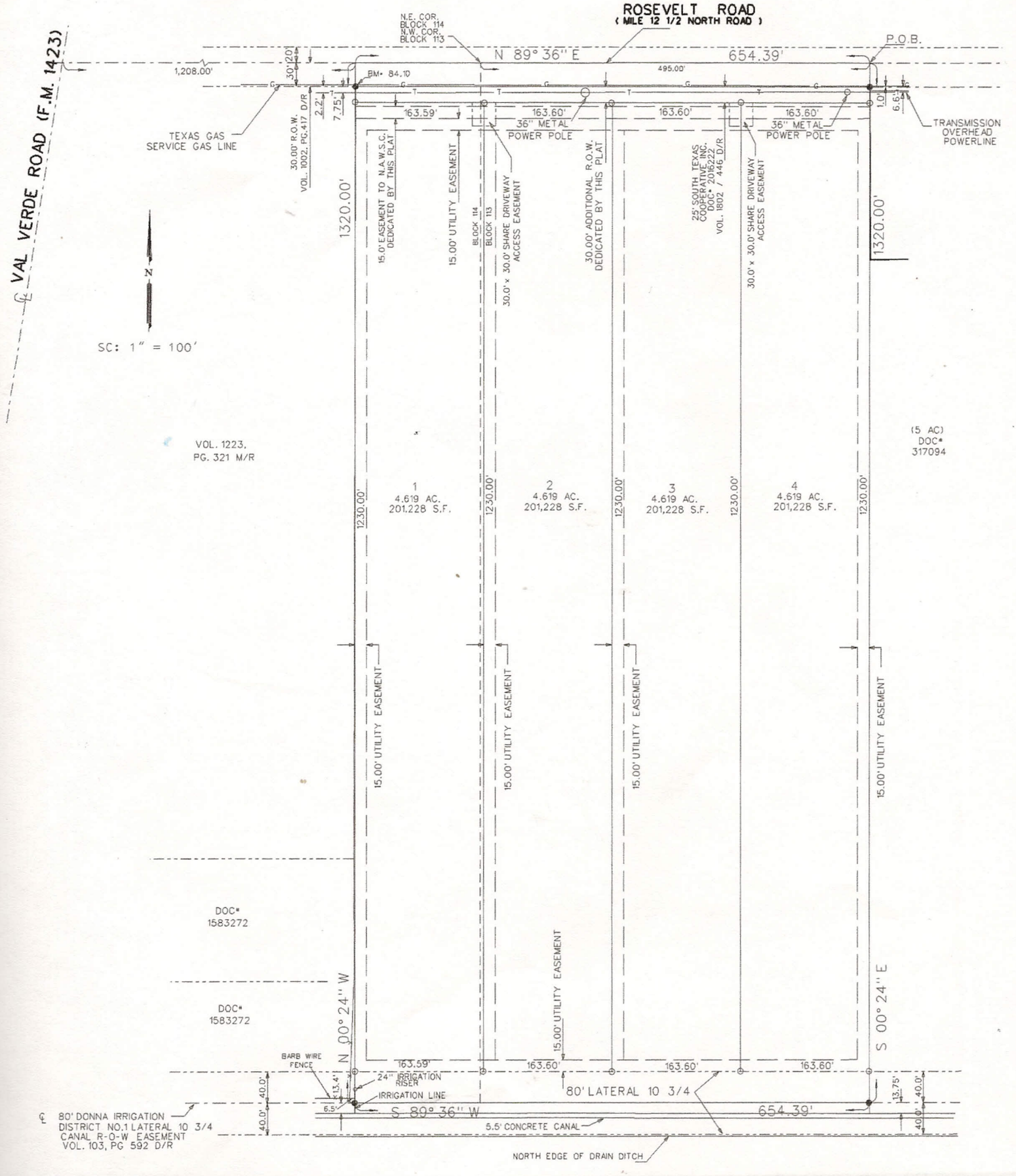
☐ **Final Approval** *subject to recommendations other departments*

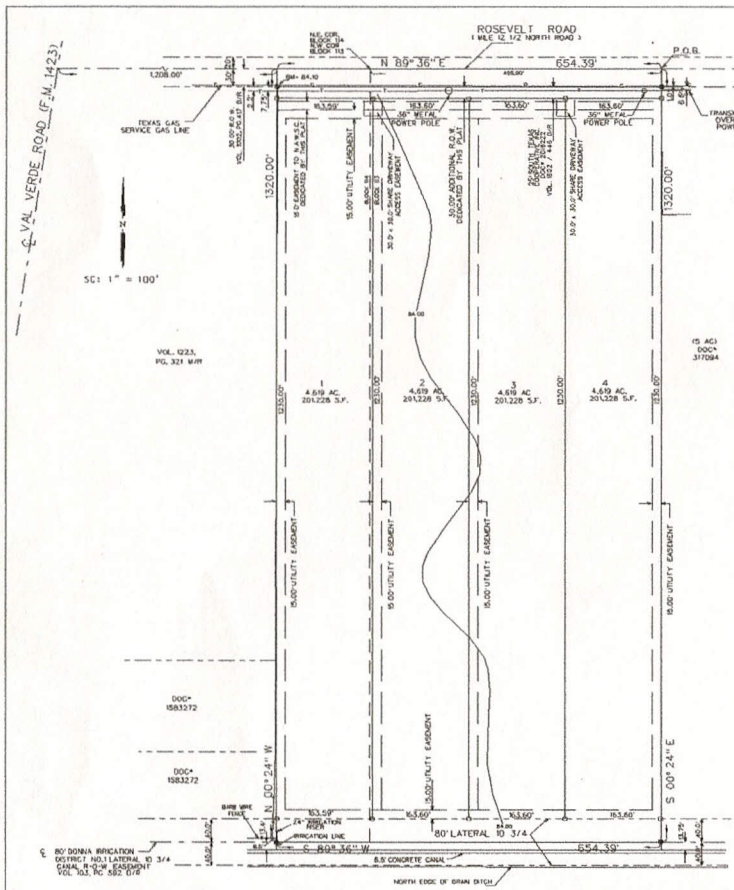
☐ **Final Approval** *with financial guarantee.*

* *This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules, Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*

# CAMPBELL ESTATES

A 19.83 ACRE TRACT OF LAND BEING THE WEST 15.00 ACRES OF BLOCK 113 AND THE EAST 4.83 ACRE OF BLOCK 114, HILL HALBERT HALL FIFIELD TRACT, ACCORDING TO THE MAP RECORDED IN VOLUME 1, PAGE 35, MAP RECORDS, HIDALGO COUNTY, TEXAS.






# CAMPBELL ESTATES

A 19.83 ACRE TRACT OF LAND BEING THE WEST 15.00 ACRES OF BLOCK 113 AND THE EAST 4.83 ACRES OF BLOCK 114, HILL HALBERT HALL FIFIELD TRACT, ACCORDING TO THE MAP RECORDED IN VOLUME 1, PAGE 35, MAP RECORDS, HIDALGO COUNTY, TEXAS.

METES AND BOUNDS

A 19.83 ACRE TRACT OF LAND BEING THE WEST 15.00 ACRES OF BLOCK 113, AND THE EAST 4.83 ACRES OF BLOCK 114, HILL HALBERT HALL FIFIELD TRACT, ACCORDING TO THE MAP RECORDED IN VOLUME 1, PAGE 35, MAP RECORDS, HIDALGO COUNTY, TEXAS, AND BEING MORE PARTICULAR DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF BLOCK 113 AND IN THE CENTERLINE OF ROSEVELT ROAD (MILE 12 ½ ROAD) FOR THE NORTHEAST CORNER OF THIS TRACT, SAID POINT BEARS N 89°36'E, 485.00 FEET FROM THE NORTHEAST CORNER OF BLOCK 114 AND THE NORTHWEST CORNER OF BLOCK 113;

THENCE: S 00°24'E, PASSING A ½" IRON ROD FOUND AT 30.00 FEET FOR THE SOUTH R.O.W. LINE OF ROSEVELT ROAD (MILE 12 ½ NORTH ROAD), PASSING A ½" IRON ROD FOUND AT 1280.00 FEET FOR THE NORTH LINE OF A 80.00 FOOT DONNA IRRIGATION DISTRICT LATERAL 10 ¾ IRRIGATION CANAL R.O.W., A TOTAL DISTANCE OF 1320.00 FEET TO A POINT ON THE SOUTH LINE OB BLOCK 113 FOR THE SOUTHEAST CORNER OF THIS TRACT;

THENCE: S 89°36'W, ALONG THE SOUTH LINE OF BLOCK 113 AND 114, A DISTANCE OF 654.39 FEET TO A POINT FOR THE SOUTHWEST CORNER OF THIS TRACT;

THENCE: N 00°24'W, PASSING A ½" IRON ROD FOUND AT 40.00 FEET FOR THE NORTH LINE OF A 80.00 FOOT DONNA IRRIGATION DISTRICT LATERAL 10 ¾ CANAL R.O.W., PASSING A ½" IRON ROD FOUND AT 1280.00 FEET FOR THE SOUTH R.O.W. LINE OF ROSEVELT ROAD (MILE 12 ½ NORTH ROAD), A TOTAL DISTANCE OF 1320.00 FEET TO A POINT ON THE NORTH LINE OF BLOCK 114 AND THE CENTERLINE OF ROSEVELT ROAD (MILE 12 ½ NORTH ROAD) FOR THE NORTHWEST CORNER OF THIS TRACT;

THENCE: N 89°36'E, ALONG THE NORTH LINE OF BLOCK 114 AND 113, AND THE CENTERLINE OF ROSEVELT ROAD (MILE 12 ½ NORTH ROAD), A DISTANCE OF 654.39 FEET TO THE POINT OF BEGINNING AND CONTAINING 19.83 ACRES OF LAND MORE OR LESS.

GENERAL NOTES:

1. MIN. BUILDING SETBACK LINES:
FRONT 50.0'
SIDE 6.0' OR EASEMENT WHICH EVER IS GREATER
REAR 15.0' OR EASEMENT WHICH EVER IS GREATER
18.00 GARAGE / CAR PORT FRONT SET BACK

2. MINIMUM FINISH FLOOR NOTES:
MINIMUM FINISH FLOOR ELEVATION SHALL BE 18" ABOVE CENTERLINE OF STREET.
18" ABOVE NATURAL GROUND, WHICHEVER IS GREATER
ELEVATION CERTIFICATE MAY BE REQUIRED FOR LOTS LOCATED OUTSIDE A DESIGNATED FLOOD ZONE AT THE TIME FOR APPLICATION FOR CONSTRUCTION TO VERIFY PRE AND POST CONSTRUCTION FINISH FLOOR ELEVATIONS. AN ELEVATION CERTIFICATE SHALL BE REQUIRED FOR ALL LOTS WITHIN A DESIGNATED FLOOD ZONE AT THE TIME FOR A DEVELOPMENT PERMIT APPLICATION.

3. ⊗ -DENOTES ½" IRON ROD FOUND UNLESS OTHERWISE NOTED.
○ -DENOTES ½" IRON ROD SET UNLESS OTHERWISE NOTED.
^ -DENOTES NAIL FOUND UNLESS OTHERWISE NOTED.

4. BENCHMARK ELEVATION: 84.10' TOP OF ½" IRON ROD LOCATED AT THE NORTHWEST CORNER OF THIS SUBDIVISION (NGVD 1988)

5. FLOOD ZONE DESIGNATION: ZONE "C"
AREAS OF MINIMAL FLOODING
C.P.N. 480334 0435 C
MAP REVISED: NOVEMBER 16, 1982

CONSTRUCTION OF RESIDENTIAL HOUSING WITHIN ANY OF THE SUBDIVISION THAT IS IN THE 100-YEAR FLOOD PLAIN IS PROHIBITED UNLESS THE HOUSING QUALIFIES FOR FOR INSURANCE UNDER THE NATIONAL FLOOD INSURANCE ACT OF 1968 (42 U.S.C. SECTIONS 4001 THROUGH 4127).

6. DRAINAGE:
IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 AND HIDALGO COUNTY REQUIREMENTS, THIS DEVELOPMENT WILL BE REQUIRED TO DETAIN A TOTAL OF 42.241 CUBIC FEET - 0.97 ACRE-FEET) OF STORM WATER RUNOFF. DRAINAGE DETENTION IN ACCORDANCE WITH THE LOCAL REQUIREMENTS WILL BE ACCOMPLISHED AS FOLLOWS: THE DRAINAGE FOR THIS DEVELOPMENT WILL BE SELF-CONTAINED WITH DETENTION AREA ON THE WEST SIDE OF THIS LOT

7. NO STRUCTURE SHALL BE PERMITTED OVER ANY EASEMENT.
EASEMENTS SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, SHEDS, SHRUBS TREES, AND OTHER PLANTINGS (EXCEPT LOW, LESS THAN 18 INCHES MATURE HEIGHT, GROUND COVER, GRASS, OR FLOWERS) AND OTHER OBSTRUCTIONS THAT WOULD INTERFERE WITH THE OPERATIONS AND MAINTENANCE OF THE EASEMENT.

8. GENERAL NOTE FOR SINGLE FAMILY RESIDENCES:
NO MORE THAN ONE-SINGLE FAMILY DETACHED DWELLING SHALL BE LOCATED ON EACH LOT, ANY OTHER USE SHALL REQUIRE PLANNING DEPARTMENT, OFFICE OF ENVIRONMENTAL COMPLIANCE, HEALTH DEPARTMENT AND FIRE MARSHALL APPROVAL). APPLICATIONS FOR CONSTRUCTION ARE REQUIRED PRIOR TO OCCUPYING THE LOT

9. ON-SITE SEWAGE FACILITIES (OSSF) NOTE:
THIS SUBDIVISION SHALL USE ON-SITE SEWAGE FACILITIES IN ACCORDANCE WITH TCEQ AND HIDALGO COUNTY REGULATIONS FOR SEWAGE DISPOSAL.
A. OSSF SYSTEM IS BEING DESIGNED FOR DISPOSAL OF DOMESTIC SEWERAGE ONLY. A SEPARATE DESIGN SHALL BE SUBMITTED FOR COMMERCIAL USE.
B. EACH LOT ON THIS PLAT COMPLIES WITH THE MINIMUM 21,780 SQUARE FEET LOT AREA FOR POTABLE WATER SUPPLY.
C. OSSF SYSTEM SHALL REQUIRE INSPECTION AND APPROVAL BY HIDALGO COUNTY AUTHORIZED DEPARTMENT
D. SOIL ANALYSIS HAVE BEEN SUBMITTED TO THE AUTHORIZED HIDALGO COUNTY DEPARTMENT AND EXCERPTS MAY BE ALSO SEEN ON THE UTILITY LAYOUT FOR THIS SUBDIVISION AS SUBMITTED TO THE HIDALGO COUNTY PLANNING DEPARTMENT. THE ENGINEER HAS DETERMINED THAT THE SOIL IS SUITABLE FOR A STANDARD SEPTIC TANK AND ABSORPTIVE DRAINFIELD SYSTEM.
E. APPROVED "OSSF" PERMIT APPLICATION IS REQUIRED INCLUDING INDIVIDUAL LOT PLANNING MATERIALS PRIOR TO OCCUPYING A LOT.
F. A SPECIAL DESIGN IS REQUIRED FOR ALL OSSF SYSTEMS LOCATED WITH IN A DESIGNATED FLOOD ZONE. THE DESIGN SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING ITEMS:
1. ANCHORING OF SEPTIC TANK(s)
2. BACK FLOW VALVES
3. SEPTIC TANK COVER SHALL BE ABLE TO SEAL

10. THERE ARE NO WATER WELLS WITHIN 150 FEET FROM THE BOUNDARIES OF THIS SUBDIVISION

11. DAVID CAMPBELL- ALEXANDER CAMPBELL JR AND ERIC CAMPBELL., - THE OWNERS & SUBDIVIDERS CAMPBELL ESTATES RETAINS AN EASEMENT UPON EACH LOT FOR THE PURPOSE OF INSTALLING AN APPROVED OSSF ON THE LOT AS DESCRIBED ON SHEET No. 2 OF THIS PLAT.

12. EACH PURCHASED CONTRACT MADE BETWEEN A SUBDIVIDER AND PURCHASER OF A LOT IN THIS SUBDIVISION SHALL CONTAIN A STATEMENT DESCRIBING HOW AND WHEN WATER, SEWER, ELECTRICITY, AND GAS SERVICES WILL BE MADE AVAILABLE TO THE SUBDIVISION.

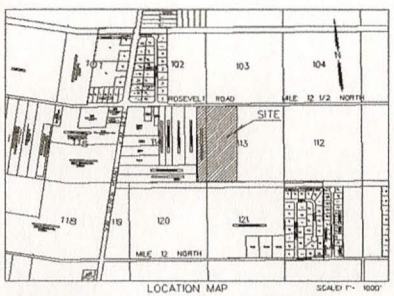
13. ALL PUBLIC UTILITIES EASEMENTS DEDICATED BY THIS PLAT SHALL BE A MINIMUM WIDTH OF 15.00 FEET AS PER THE HIDALGO COUNTY MODEL SUBDIVISION RULES. BY SIGNING THIS PLAT DEVELOPER AND ENGINEER CERTIFY THAT ALL OTHER EASEMENTS SHOWN COMPLY WITH THE SIZE REQUIRED BY EACH UTILITY PROVIDER OCCUPANCY AN EASEMENT.

14. AN OFF-STREET PARKING LOT SITE PLAN & DRAINAGE PLAN APPROVAL BY THE HIDALGO COUNTY PLANNING DEPARTMENT, OFFICE OF ENVIRONMENTAL COMPLIANCE SHALL BE REQUIRED FOR COMMERCIAL AND INDUSTRIAL USE AT THE TIME OF APPLICATION FOR CONSTRUCTION PRIOR TO THE ISSUANCE OF A BUILDING AND/OR DEVELOPMENT PERMIT. NO WATER OR LIGHT CLEARANCES SHALL BE ISSUED UNTIL THE SITE PLAN, DRAINAGE PLAN AND OSSF PLAN ARE APPROVED AND PROPOSED IMPROVEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH COUNTY AND STATE STANDARDS.

15. FIRE HYDRANTS INSTALLED WITHIN THE CORPORATION'S DISTRIBUTION SYSTEM ARE PROVIDED AT THE CONVENIENCE OF THE CORPORATION AND DO NOT IMPLY ANY RESPONSIBILITY ON THE PART OF THE CORPORATION TO MEET FIRE FLOW REQUIREMENTS.

16. IF THE PURCHASER(S) OF A LOT REQUIRES A COMMERCIAL LOT & SUBSEQUENTLY DETERMINE THAT A LARGER METER IS REQUIRED, THEN THE LUE WILL NEED TO BE CALCULATED AND APPROPRIATE FEES ON THE UPGRADE MUST BE PAID TO THE CORPORATION PRIOR TO THE INITIATION OF SERVICE ON SUCH LARGER METER(S). THE DEVELOPER WILL NEED TO ADVISE PURCHASERS OF THIS OBLIGATION.

17. NO INDIVIDUAL LOT DRIVEWAY ACCESS WILL BE ALLOWED FROM ROSEVELT ROAD ON TO LOTS 1 THROUGH 4. A 30.00 FOOT SHARED DRIVEWAY ENTRANCE SHALL BE CONSTRUCTED BY DEVELOPER BETWEEN LOTS 1 AND 2, AND 3 AND 4, TO PROVIDE INGRESS AND EGRESS FROM ROSEVELT ROAD




LOCATION MAP SCALED 1"= 1000'

LOCATION OF SUBDIVISION WITH RESPECT TO THE EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY

CAMPBELL ESTATES IS LOCATED WITHIN HIDALGO COUNTY PRECINCT No. 1 IN THE CENTRAL EAST OF HIDALGO COUNTY ON THE SOUTH SIDE OF ROSEVELT ROAD, 1.208 FEET EAST OF VAL VERDE ROAD. THE ONLY NEARBY MUNICIPALY IS THE CITY OF DONNA ACCORDING TO THE MAP IN THE OFFICE OF THE SECRETARY OF THE CITY OF DONNA (POPULATION 15,846 /2005 CENSUS), CAMPBELL ESTATES LIES APPROXIMATELY 3.0 MILES FROM THE CITY LIMITS OF DONNA AND LIES WITHIN THE CITY'S 5 MILE EXTRATERRITORIAL JURISDICTION (ETJ) UNDER LOCAL GOVERNMENT CODE § 42.021

REVISION NOTES

| No. | SHEET | REVISION | DATE | APPROVED |
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RIGHT OF WAY EASEMENT

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, OWNERS OF THE PROPERTY SHOWN ON THIS PLAT, THEIR SUCCESSORS, ASSIGNS, AND TRANSFEREES HEREINAFTER CALLED "GRANTOR" WHETHER ONE OR MORE PERSONS ARE NAMED), IN CONSIDERATION OF ONE DOLLAR ($1.00) AND OTHER GOOD AND VALUABLE CONSIDERATION PAID BY NORTH ALAMO WATER SUPPLY CORPORATION, (HEREINAFTER CALLED "GRANTEE") THE RECEIPT AND SUFFICIENCY OF WHICH IS HEREBY ACKNOWLEDGED, DOES HEREBY GRANT, BARGAIN, SELL, TRANSFER, AND CONVEY TO SAID GRANTEE, ITS SUCCESSORS, AND ASSIGNS, AN EXCLUSIVE PERPETUAL EASEMENT WITH THE RIGHT TO ERECT, CONSTRUCT, INSTALL AND THEREAFTER USE, OPERATE, INSPECT, REPAIR, MAINTAIN, REPLACE, AND REMOVE WATER DISTRIBUTION LINES AND APPURTENANCES OVER AND ACROSS THE LANDS SHOWN ON THIS PLAT, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT LANDS OF THE PURPOSE FOR WHICH THE ABOVE MENTIONED RIGHTS ARE GRANTED, THE EASEMENT HEREBY GRANTED SHALL NOT EXCEED 15' IN WIDTH, AND GRANTEE IS HEREBY AUTHORIZED TO DESIGNATE THE COURSE OF THE EASEMENT HEREIN CONVEYED EXCEPT THAT WHEN THE PIPELINE(S) IS INSTALLED, THE EASEMENT HEREIN GRANTED SHALL BE LIMITED TO A STRIP OF LAND 15' IN WIDTH, THE CENTER LINE THEREOF BEGIN THE PIPELINE INSTALLED, IN THE EVENT THE EASEMENT HEREBY GRANTED ABUTS ON A PUBLIC ROAD AND THE CITY, COUNTY OR STATE HEREAFTER WIDENS OR RELOCATES THE PUBLIC ROAD SO AS TO REQUIRE THE RELOCATION OF THIS WATERLINE AS INSTALLED, GRANTOR FURTHER GRANTS TO GRANTEE AN ADDITIONAL EASEMENT OVER AND ACROSS THE LAND SHOWN ON THIS PLAT FOR THE PURPOSE OF LATERALLY RELOCATE SAID WATER LINE AS MAY BE NECESSARY TO CLEAR THE ROAD IMPROVEMENTS, WHICH EASEMENT HEREBY GRANTED SHALL BE LIMITED TO A STRIP OF LAND 15'IN WIDTH, THE CENTER LINE THEREOF BEING THE PIPELINE AS RELOCATED. THE CONSIDERATION RECITED HERIN SHALL CONSTITUTE PAYMENT IN FULL FOR ALL DAMAGES SUSTAINED BY GRANTOR BY REASON OF THE INSTALLATION, MAINTENANCE, REPAIR, REPLACEMENT AND RELOCATION OF THE STRUCTURES REFERRED TO HEREIN, THIS AGREEMENT TOGETHER WITH OTHER PROVISIONS OF THIS GRANT SHALL CONSTITUTE AN EASEMENT FOR THE BENEFIT OF THE GRANTEE, ITS SUCCESSORS, AND ASSIGNS, THE GRANTOR COVENANTS THAT IF IS THE OWNER OF THE ABOVE-DESCRIBED LANDS AND THAT SAID LANDS ARE FREE AND CLEAR OF ALL ENCUMBRANCES AND LIES EXCEPT THE FOLLOWING, THE EASEMENT CONVEYED HEREIN WAS OBTAINED OR IMPROVED THROUGHT FEDERAL FINANCIAL ASSISTANCE THIS EASEMENT IS SUBJECT TO THE PROVISIONS OF TITLE VI OF THE CIVIL RIGHTS ACT OF 1964 AND THE REGULATIONS ISSUED PURSUANT THERETO FOR SO LONG AS THE EASEMENT CONTINUES TO BE USED FOR THE SAME OR SIMILAR PURPOSE FOR WHICH FINANCIAL ASSISTANCE WAS EXTENDED OR FOR SO LONG AS THE GRANTEE OWNS IT. WHICHEVER IS LONGER.

IN WITNESS WHEREOF THE SAID GRANTOR EXECUTED THIS INSTRUMENT THIS _____ DAY OF _____, 2014.

OWNER: DAVID CAMPBELL
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

OWNER: ALEXANDER CAMPBELL, JR.
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

OWNER: ERIC CAMPBELL
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS 78537

COUNTY OF HIDALGO
CERTIFICATE OF PLAT APPROVAL

I THE UNDERSIGNED CERTIFY THAT THIS PLAT OF CAMPBELL SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARMENT ON _____, _____

HIDALGO COUNTY ENVIRONMORTAL HEALTH DIVISION MANAGER _____ DATE

HIDALGO COUNTY
CERTIFICATE OF PLAT APPROVAL
UNDER LOCAL GOVERNMENT CODE § 232.028(A)

WE THE UNDERSIGNED CERTIFY THAT THIS PLAT OF THE CAMPBELL SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY COMMISSIONERS COURT ON _____, 2014.

HIDALGO COUNTY JUDGE _____ DATE

ATTEST: _____
HIDALGO COUNTY CLERK _____ DATE

FILED FOR RECORD IN HIDALGO COUNTY
ARTURO GUAJARDO, JR.
HIDALGO COUNTY CLERK

ON: _____ AT _____ AM/PM
INSTRUMENT NUMBER _____
OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS
BY: _____ DEPUTY

STATE OF TEXAS
COUNTY OF HIDALGO

OWNERS DEDICATION, CERTIFICATION AND ATTESTATION

WE, DAVID CAMPBELL, ALEXANDER CAMPBELL JR., AND ERIC CAMPBELL OWNERS OF THE 19.83 ACRES TRACT OF LAND ENCOMPASSED WITHIN THE PROPOSED "CAMPBELL ESTATES" HEREBY SUBDIVIDE THE LAND AS DEPICTED IN THIS SUBDIVISION PLAT AND DEDICATE TO PUBLIC USE THE STREETS, PARK AND EASEMENTS SHOWN HEREIN.
WE CERTIFY THAT WE HAVE COMPLIED WITH THE REQUIREMENTS OF TEXAS LOCAL GOVERNMENT CODE § 232.032 AND THAT
(A) THE WATER QUALITY AND CONNECTION TO THE LOTS MEET, OR WILL MEET, THE MINIMUM STATE STANDARDS;
(B) SEWER CONNECTION TO THE LOTS OR SEPTIC TANKS MEET, OR WILL MEET, THE MINIMUM REQUIREMENTS OF STATE STANDARDS;
(C) ELECTRICAL CONNECTION PROVIDED TO THE LOTS MEET, OR WILL MEET, MINIMUM STATE STANDARDS; AND
(D) GAS CONNECTION, IF AVAILABLE, PROVIDED TO THE LOTS MEET, OR WILL MEET, THE MINIMUM STATE STANDARDS.

WE ATTEST THAT THE MATTERS ASSERTED IN THIS PLAT IS TRUE AND COMPLETE.

OWNER: DAVID CAMPBELL
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

OWNER: ALEXANDER CAMPBELL, JR.
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

OWNER: ERIC CAMPBELL
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

STATE OF TEXAS
COUNTY OF HIDALGO

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, ON THIS DAY PERSONALLY APPEARED DAVID CAMPBELL ALEXANDER CAMPBELL JR, AND ERIC CAMPBELL, PROVED TO BE THROUGH THEIR TEXAS DEPARTMENT OF PUBLIC SAFETY DRIVER LICENSE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, WHO, BEING BY ME DULY SWORN, DECLARED THAT THEIR STATEMENTS THEREIN ARE TRUE AND CORRECT AND ACKNOWLEDGED THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREBY EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____, 2014

NOTARY PUBLIC, FOR THE STATE OF TEXAS

THIS PLAT APPROVED BY THE DONNA IRRIGATION DISTRICT No. 1

ON THIS THE _____ DAY OF _____, 20_____.

ATTEST:

PRESIDENT _____ SECRETARY _____

HIDALGO COUNTY DRAINAGE DISTRICT NO.1 HEREBY CERTIFIES THAT THE DRAINAGE PLANS FOR THIS SUBDIVISION COMPLY WITH THE MINIMUM STANDARDS OF THE DISTRICT ADOPTED UNDER TEX. WATER CODE § 49.211 (c). THE DISTRICT HAS NOT REVIEWED AND DOES NOT CERTIFY THAT THE DRAINAGE STRUCTURES DESCRIBED ARE APPROPRIATE FOR THE SPECIFIC SUBDIVISION, BASED ON GENERALLY ACCEPTED ENGINEERING CRITERIA. IT IS THE RESPONSIBILITY OF THE DEVELOPER OF THE SUBDIVISION AND ITS ENGINEER TO MAKE THESE DETERMINATIONS.

HIDALGO COUNTY DRAINAGE DISTRICT NO.1

BY: _____

CITY COUNCIL'S CERTIFICATION

THE PLAT OF CAMPBELL ESTATES HAS BEEN SUBMITTED TO AND CONSIDERED IN THE CITY COUNCIL OF THE CITY OF DONNA, TEXAS, AND IS HEREBY APPROVED.

DATE THIS _____ DAY OF _____, 2014

ATTESTED _____ BY: _____
MAYOR CITY SECRETARY

PLANNING AND ZONING COMMISSION'S CERTIFICATION

THE PLAT OF CAMPBELL ESTATES HAS BEEN SUBMITTED TO AND CONSIDERED BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF DONNA, TEXAS AND IS HERE APPROVED BY SUCH COMMISSION.

DATE THIS _____ DAY OF _____, 2014

ATTESTED: _____ BY: _____
PLANNING BOARD CHAIR PERSON SECRETARY

STATE OF TEXAS
COUNTY OF HIDALGO

I, HOMERO LUIS GUTIERREZ, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE AND IS PREPARED FROM AN ACTUAL SURVEY ON THE PROPERTY MADE UNDER MY SU PERVISION ON THE GROUND AND THAT THE CORNER MONUMENTS WERE PROPERLY PLACED UNDER MY SUPERVISION.

HOMERO LUIS GUTIERREZ
REGISTERED PROFESSIONAL LAND SURVEYOR No. 2731
2600 SAN DIEGO
MCSOWN, TEXAS. 78572

STATE OF TEXAS
COUNTY OF HIDALGO

I, THE UNDERSIGNED, GUILLERMO A. ARRATIA, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN TO THIS PLAT.

GUILLERMO A. ARRATIA
LICENSED PROFESSIONAL ENGINEER No. 94001
526 N. 5TH ST.
DONNA, TEXAS. 78537

STATE OF TEXAS
GUILLERMO A ARRATIA
94001
LICENSED PROFESSIONAL ENGINEER

SHEET 1 OF 2

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| | CERTIFICATE/ COUNTY CLERK'S RECORDING CERTIFICATE/ HIDALGO COUNTY CERTIFICATE OF PLAT APPROVAL/ A DESCRIPTION OF LOCATION OF SUBDIVISION WITH RESPECT TO THE ETJ OF A MUNICIPALITY AND DESIGNATE THE PRECINCT THE PROJECT IS SITUATED/ |
| | H.C.D.D. CERTIFICATION/ DONNA IRR. DISTRICT No. 1 CERTIFICATE OF APPROVAL/ REVISION NOTES/ |
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| | WATER AND ENGINEER'S CERTIFICATION (ENGLISH AND SPANISH VERSION)/ |
| | TYPICAL WATER SERVICE CONNECTION/ OWNER'S DEDICATION, CERTIFICATION, AND ATTESTATION |
| | DRAINAGE REPORT INCLUDING DESCRIPTION OF DRAINAGE AND HOW IT WILL SERVE THIS DEVELOPMENT/ MAP OF TOPOGRAPHY AND DRAINAGE AND ENGINEER'S CERTIFICATION/ REVISION NOTES/ CONSTRUCTION DETAILS |

PRINCIPAL CONTACTS:

| | NAME | ADDRESS | CITY & ZIP | PHONE |
|---|---|---|---|---|
| OWNER: | DAVID CAMPBELL | 3316 CASTILLO STREET | DONNA, TEXAS, 78537 | (956) 460-9907 |
| ENGINEER: | GUILLERMO A. ARRATIA, P.E. | 526 N. 5TH ST. | DONNA, TX 78537 | (956) 784-0218 |
| SURVEYOR: | HOMERO L. GUTIERREZ | 2600 SAN DIEGO | MISSION, TEXAS 78572 | (956) 583-5479 |

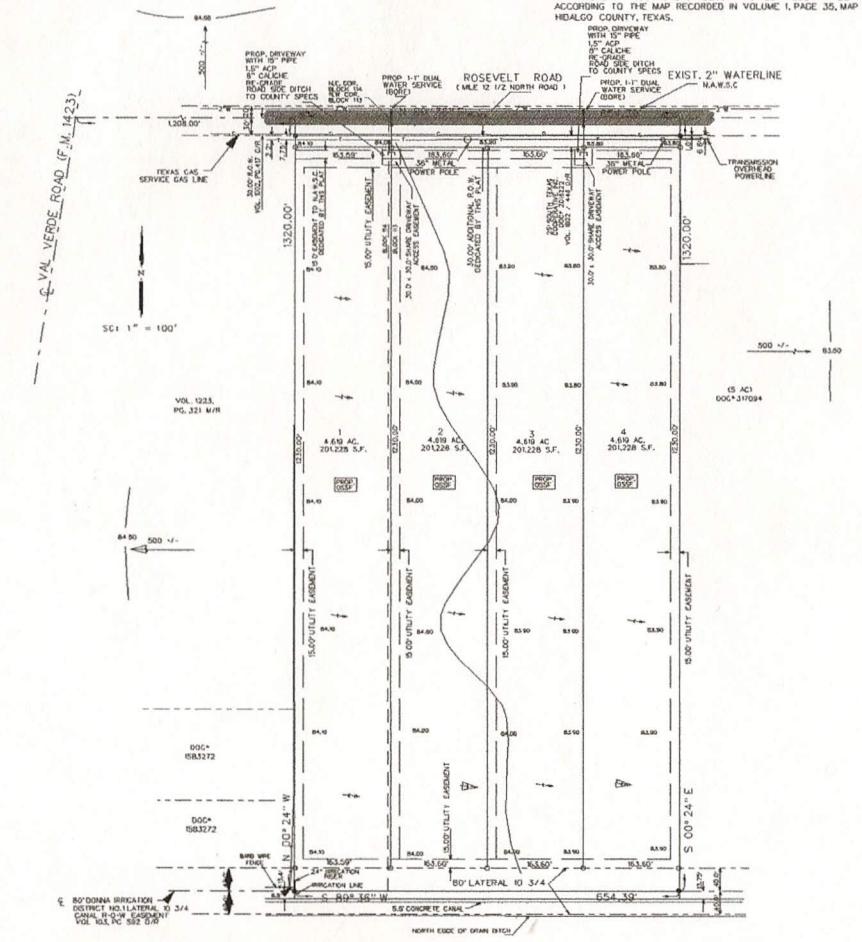
DATE OF PREPARATION: JANUARY 10, 2014


NAIN ENGINEERING, L.L.C.
CONSULTING ENGINEER
526 N. 5TH STREET
DONNA, TEXAS. 78537
FIRM NO. F-9050
PH. (956) 784-0218
E-MAIL: NAINENGINEER@YAHOO.COM

# MAP OF TOPOGRAPHY AND DRAINAGE
# MAPA DE TOPOGRAFIA Y DRENAJE

# CAMPBELL ESTATES

A 19.83 ACRE TRACT OF LAND BEING THE WEST 15.00 ACRES OF BLOCK 113 AND THE EAST 4.83 ACRE OF BLOCK 114, HILL HALBERT HALL FIFIELD TRACT, ACCORDING TO THE MAP RECORDED IN VOLUME 1, PAGE 35, MAP RECORDS, HIDALGO COUNTY, TEXAS.




EL COSTO TOTAL PARA LA INSTALACION DE UN SISTEMA INDIVIDUAL DE FOSAS SEPTICAS POR SOLAR SON $ 1,500.00 DOLARES, INCLUYENDO EL COSTO DEL PERMISO REQUERIDO Y LICENCIA, EN ESTOS MOMENTOS NINGUNA FOSAS SEPTICAS HA SIDO INSTALADA EN EL PROCESO DE LA APROVACION FINAL.

EN CUALQUIER MOMENTO DESPUES QUE EL TERRENO SEA VENDIDO, EL COMPRADOR PUEDE INICIAR LA INSTALACION DE UN SISTEMA SEPTICO ESCRIBIENDO O LLAMANDO AL DUENO DE LA SUBDIVISION Y ENTONCES ARCHIVANDO EN EL DEPARTAMENTO DE SALUD DEL CONDADO DE HIDALGO UNA APLICACION PARA UN PERMISO DE CONSTRUIR PARA UN SISTEMA SEPTICO. LAS FOSAS SEPTICAS DEBEN DE ESTAR INSTALLADAS ANTES QUE EL CONDADO DE HIDALGO PUEDA APROBAR LA AUTORIZACION DE LUZ Y AGUA.

CERTIFICATION:

CON MI FIRMA, CERTIFICO QUE LOS SERVICIOS Y SISTEMAS DE AGUA Y DE DRENAJE, DESCRITOS EN ESTE DOCUMENTO CUMPLEN CON LAS MODEL SUBDIVISION RULES (LAS REGLAS GOBERNANDO A LAS SUBDIVISIONES), ADOPTADAS EL LA SECCION 16.343 DEL TEXAS WATER CODE (CODIGO DE AGUA TEXAS). CERTIFICO QUE LOS GASTOS PARA INSTALAR LOS SISTEMAS DE AGUA Y DE DRENAJE SON:

AGUA: EL SISTEMA/SERVICIO DE AGUA SERA INSTALADO Y COMPLETAMENTE CONSTRUIDO MENOS EL MEDIDOR MECANICO DE AGUA QUE COSTARA UN TOTAL DE $ 6,500.00

DRENAJE: SE ESTIMA QUE LA FOSA SEPTICA COSTARA $ 1,500.00, AUN COSTO TOTAL DE $8,000.00 PARA TODA LA SUBDIVISION.

REVISION NOTES

| No. | SHEET | REVISION | DATE | APPROVED |
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GUILLERMO A. ARRATIA
LICENSED PROFESSIONAL ENGINEER NO. 94001
526 N. 5TH ST.
DONNA, TEXAS. 78537

GUILLERMO A. ARRATIA 94001 LICENSED PROFESSIONAL ENGINEER

PRINCIPAL CONTACTS:

| | NAME | ADDRESS | CITY & ZIP | PHONE |
|---|---|---|---|---|
| OWNER: | DAVID CAMPBELL | 3316 CASTILLO STREET | DONNA, TEXAS. 78537 | (956) 460-9887 |
| ENGINEER: | GUILLERMO A. ARRATIA, P.E. | 526 N. 5TH ST. | DONNA, TX 78537 | (956) 784-0218 |
| SURVEYOR | HOMERO L. GUTIERREZ | 2800 SAN DIEGO | MISSION, TEXAS. 78572 | (956) 583-5479 |

# MAP OF WATER DISTRIBUTION SYSTEM
# MAPA DE DISTRIBUCION DE AGUA

SUBDIVIDER CERTIFICATION:

1.- BY COMPLETING THE IMPROVEMENTS DESCRIBED ON THE PLAT, SUBDIVIDER WILL COMPLY WITH MINIMUM STATE STANDARDS AND THAT (a) WATER QUALITY AND CONNECTIONS INCLUDING WATER METERS TO THE LOT MEET SUCH STANDARDS AND (b) SEWER CONNECTIONS TO THE LOT OR SEPTIC TANK MEET OR WILL MEET SUCH STANDARDS AND WILL BE BY STATE AND COUNTY REGULATIONS.

SUBDIVIDER STATEMENT:

1.- WE DAVID CAMPBELL, ALEXANDER CAMPBELL JR., AND ERIC CAMPBELL SUBDIVIDERS OF CAMPBELL ESTATES HEREBY CERTIFY SEWER PERMITS HAVE BEEN PAID AND ARE ON FILE WITH THE HIDALGO COUNTY HEALTH DEPARMENT THAT ANY ADEQUATE DRINKING WATER SOURCE IS IMMEDIATELY AVAILABLE TO EACH LOT OF THE TYPE, QUALITY & QUANTITY TO ENABLE EACH PERSON PURCHASING A LOT HAVE ADEQUATE WATER TO COMPL WITH THE REGULATIONS AND THE LAWS TO THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS.

OWNER: DAVID CAMPBELL
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

OWNER: ALEXANDER CAMPBELL, JR.
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

OWNER: ERIC CAMPBELL
ADDRESS: 3316 CASTILLO STREET
DONNA, TEXAS. 78537

STATE OF TEXAS
COUNTY OF HIDALGO

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, ON THIS DAY PERSONALLY APPEARED DAVID CAMPBELL ALEXANDER CAMPBELL JR, AND ERIC CAMPBELL PROVED TO BE THROUGH THEIR TEXAS DEPARTMENT OF PUBLIC SAFETY DRIVER LICENSE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, WHO, BEING BY ME DULY SWORN, DECLARED THAT THEIR STATEMENTS THEREIN ARE TRUE AND CORRECT AND ACKNOWLEDGED THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREBY EXPRESSED.

NOTARY PUBLIC, FOR THE STATE OF TEXAS

FINAL WATER AND SEWER ENGINEERING REPORT

WATER SUPPLY: DESCRIPTION, COST, AND OPERABILITY DATE:

CAMPBELL SUBDIVISION WILL BE PROVIDED WITH POTABLE WATER BY THE NORTH ALAMO WATER SUPPLY (N.A.W.S.C.). THE SUBDIVIDER, AND N.A.W.S.C., HAVE ENTERED INTO A CONTRACT IN WHICH N.A.W.S.C. HAS PROVIDED TO PROVIDE SUFFICIENT WATER TO THE SUBDIVISION FOR AT LEAST 30 YEARS AND N.A.W.S.C. HAS PROVIDED DOCUMENTATION TO SUFFICIENTLY ESTABLISH THE LONG TERM QUANTITY AND QUALITY OF THE AVAILABLE WATER SUPPLIES TO SERVE THE FULL DEVELOPMENT OF THIS SUBDIVISION.

N.A.W.S.C. HAS AN EXISTING 2" DIAMETER WATERLINE RUNNING ALONG THE NORTH RIGHT-OF-WAY OF ROSEVELT ROAD (MILE ½ NORTH ROAD)

WATER DISTRIBUTION FOR CAMPBELL ESTATES CONSIST OF A PROPOSED 2 - 1" DIAMETER DUAL WATER SERVICE VIA BORE ROSEVELT ROAD , SAID SERVICES TERMINATE AT THE WATER METER BOX, AND THE METER BOX HAVE ALREADY BEEN INSTALLED AT A TOTAL COST OF $ 2,500.00, IN ADDITION THE SUBDIVIDER HAS PAID N.A.W.S.C. THE SUM OF $ 4,000.00, WHICH COVERS THE COST FOR LOTS AS STATED IN THE 30 YEAR WATER SERVICE AGREEMENT WHICH SUM REPRESENTS THE TOTAL COST OF THE WATER METER, RIGHTS ACQUISITION FEES, AND ALL MEMBERSHIP OR OTHER FEES ASSOCIATED WITH CONNECTING THE INDIVIDUAL LOTS IN THE SUBDIVISION TO N.A.W.S.C., UPON REQUEST BY THE LOT OWNER, N.A.W.S.C., WILL PROMPTLY INSTALL AT NO CHARGE THE WATER METER.

THE ENTIRE WATER FACILITIES HAVE BEEN APPROVED AND ACCEPTED BY N.A.W.S.C., AND SAID DISTRIBUTION SYSTEM IS OPERABLE AS OF THE DATE OF THE RECORDING OF THE PLAT.

SEWAGE FACILITIES: DESCRIPTION, COSTS, AND OPERABILITY DATES:

SEWAGE FROM CAMPBELL ESTATES WILL BE TREATED BY INDIVIDUAL ON-SITE SEWAGE FACILITIES ("OSSF") CONSISTING OF A STANDARD DESIGN DUAL COMPARTMENTS SEPTIC TANK AND A DRAIN FIELD ON THIS LOT. THE SITE EVALUATOR JOSE A GONZALEZ REG. # 12258, HAS EVALUATED THE SUITABILITY OF THE SUBDIVISION SITE FOR OSSF AND SUBMITTED A REPORT CONCLUDING THAT THE SITE IS SUITABLE FOR OSSF. THE REPORT WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT. EACH LOT HAS ADEQUATE AREA FOR A REPLACEMENTS DRAIN FIELD

EACH LOT IN THE PROPOSED SUBDIVISION IS AT LEAST ½ ACRE IN SIZE, THE NATURAL RESOURCE CONSERVATION SERVICE SOIL SURVEY BOOK INDICATES A SANDY LOAM SOIL FOR THE AREA AT LEAST TWO SOIL EXCAVATIONS WERE PERFORMED ON THE SITE, AT OPPOSITE ENDS OF THE SOIL IS A TEXTURE CLASS IS SANDY LOAM BLOCKY EXTENDING UP TO 36" BELOW THE BOTTOM OF ANY PROPOSED EXCAVATIONS, THERE IS NO INDICATION OF GROUNDWATER OR A RESTRICTIVE LAYER WITHIN 24" OF BOTTOM OF THE PROPOSED EXCAVATIONS, THE SUBDIVISION DRAINS WELL.

THE ESTIMATED COST TO INSTALL A SEPTIC SYSTEM ON AN INDIVIDUAL LOTS IS $1,500.00, INCLUDING THE COST FOR THE REQUIRED PERMIT AND LICENSE ALL OSSF'S HAVE BEEN INSTALLED AS OF THE TIME OF APPLICATION FOR FINAL PLAT APPROVAL, WITH THE FILING OF THIS PLAT, THE SUBDIVIDER IS PROVIDING ADEQUATE FINANCIAL GUARANTEES OF PERFORMANCE IN THE FORM OF A (CASHIER'S CHECK OR PERSONAL CHECK)REPRESENTING A "CASH DEPOSIT TO BE HELD BY THE COUNTY OF HIDALGO IN ESCROW IN THE AMOUNT OF $ 6,000.00 WHICH IS THE ESTIMATED TOTAL COST TO INSTALL A SEPTIC TANK SYSTEM ON EACH LOT, THE SUBDIVIDER WILL INCLUDE THE COST OF A SEPTIC TANK SYSTEM IN THE SALE PRICE OF THE LOT.

AT ANY TIME AFTER THE LOTS IS SOLD, THE PURCHASER MAY INITIATE INSTALLATION OF AN OSSF SYSTEM BY WRITING OR CALLING THE SUBDIVIDER. SUBDIVIDER SHALL BE RESPONSIBLE TO FILE WITH THE HIDALGO COUNTY HEALTH DEPARTMENT AN APPLICATION FOR A PERMITTO INSTALL AN OSSF. THE OSSF SYSTEM SHALL BE INSTALLED ON THE LOT PRIOR TO THE COUNTY ISSUING A FINAL LIGHT AND WATER CLEARANCE.

ENGINEER CERTIFICATION:
BY MY SIGNATURE BELOW, I CERTIFY THAT THE WATER AND SEWAGE SERVICE FACILITIES DESCRIBED ABOVE ARE IN COMPLIANCE WITH THE MODEL RULES ADOPTED UNDER SECTION 16.343, WATER CODE. I CERTIFY THAT THE COST TO INSTALL THE WATER DISTRIBUTION SYSTEM AND ONSITE SEWAGE FACILITIES, DISCUSSED ABOVE, ARE AS FOLLOWS:

WATER FACILITIES - THESE FACILITIES FULLY CONSTRUCTED, WITH THE INSTALLATION OF WATER METERS, WILL COST A GRAND TOTAL OF $ 6,500.00
SEWAGE FACILITES - SEPTIC SYSTEM IS ESTIMATED TO COST $1,500.00 PER LOT FALL INCLUSIVE), FOR A TOTAL OF $6,000.00 FOR THE ENTIRE SUBDIVISION.

FINAL WATER AND SEWER ENGINEERING REPORT IN SPANISH

PROVISION DE AGUA: DESCRIPCION, GASTOS Y FECHA DE INICIO

LA SUBDIVISION DE CAMPBELL ESTATES RECIBIRA SU PROVISION DE AGUA DE NORTH ALAMO WATER SUPPLY. EL DUENO DE LA SUBDIVISION Y LA COMPANIA AGUA N.A.W.S.C. HAN FIRMADO UN CONTRATO POR EL CUAL LA SUBDIVISION RECIBIRA SU PROVISION DE AGUA POR LOS PROXIMOS 30 ANOS, N.A.W.S.C. HA PRESENTADO DOCUMENTACION PARA DEMOSTRAR A LARGO PLAZO LA CANTIDAD Y CALIDAD DE AGUA ACCESIBLE PARA SERVIR EL FUTURO DESARROLLO DE LA SUBDIVISION.

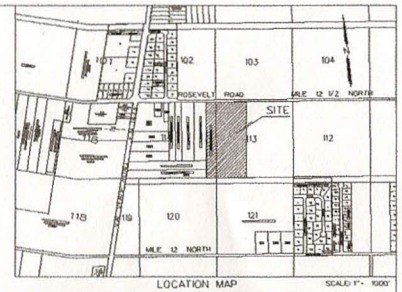
EL SISTEMA DE PROVISION DE AGUA PARA LA SUBDIVISION DE CAMPBELL ESTATES CONSISTE DE UN CONDUCTO DE AGUA EXISTENTE DE 2 PULGADAS DE DIAMETRO PASA POR EL LADO NORTE DEL DERECHO DE VIA (RIGHT-OF-WAY) DE LA CARRETERA ROSEVELT ROAD (MILE 12 ½ NORTH ROAD)

PARA LA DISTRIBUCION DEL AGUA PARA CAMPBELL ESTATES, SE INSTALARAN DOS CONDUCTOS DOBLE DE 1 PULGADA DIDIAMETRO PARA POR DEBAJO DE LA CARRETERA ROSEVELT ROAD (MILE 12 ½ NORTH ROAD) Y EL MEDIDOR MECANICO DE AGUA A UN COSTO TOTAL DE $ 2,500.00 EL DUENO DE LA SUBDIVISION TAMBIEN LE HA PAGADO A N.A.W.S.C. $ 4,000.00 POR LA SUBDIVISION QUE CUBRE EL COSTO DEL MEDIDOR MECANICO DE AGUA PARA CADA LOTE, ESTE PRECIO INCLUYE EL COSTO DE LA INSTALACION DEL MEDIDOR Y LOS GASTOS DE CONEXION CUANDO EL DUENO DEL LOTE SOLICITE EL MEDIDOR DE AGUA, LA COMPANIA DE N.A.W.S.C., LO INSTALARA SIN COSTO ALGUNO AL DUENO DE LA SUBDIVISION, EL SISTEMA DE AGUA ESTARA EN FUNCIONAMIENTO COMPLETO ANTES O EN LA FECHA, EN LA CUAL LA SUBDIVISION SEA REGISTRADA EN EL CONDADO DE HIDALGO.

DRENAJE: DESCRIPCION, GASTOS Y FECHA DE INICIO PARA FACILITAR EL DRENAJE PARA LA SUBDIVISION.

SE INSTALARA UNA FOSA SEPTICA EN CADA LOTE, ESTA FOSA SEPTICA CONSISTE DE UN TANQUE SEPTICO DE MODELO DUAL Y DE UN CAMPO DE DRENAJE PARA EL SOLAR, JOSE A GONZALEZ REG. #12258 HA EVALUADO EL AREA DONDE SE ENCUENTRA LA SUBDIVISION Y HA PREPARADO UN REPORTE QUE CONCLUYE QUE ESTE TERRENO ES ADECUADO PARA ESAS FOSA SEPTICAS (OSSF) EL REPORTE FUE APROVADO POR EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO (HIDALGO COUNTY HEALTH DEPARTMENT) SEGUN EL REPORTE.

CADA LOTE EN LA SUBDIVISION MIDE MEDIO ACRE, SE HICIERON DOS EXCAVACIONES DE EVALUACION EN LOS LUGARES OPUESTOS EN LA SUBDIVISION (EXCAVACIONES ADICIONALES NO FUERON NECESARIAS PORQUE EL TERRENO EN ESTA AREA ES SIGNIFICANTEMENTE UNIFORME) EL TERRENO ES UNIFORME (TERRENO ARCILLOSO Y SUELO FRANCO) Y SE EXTIENDE A 36 PULGADAS BAJO TODAS LAS EXCAVACIONES PROPUESTAS, NO EXISTE EVIDENCIA DE AGUA 24 PULGADAS MAS ARRIBA DE LO MAS BAJO DE LAS EXCAVACIONES PROPUESTAS, EL AGUA EN ESTA AREA FLUYE BIEN.




LOCATION MAP — SCALE 1" = 1000'

LOCATION OF SUBDIVISION WITH RESPECT TO THE EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY:

CAMPBELL ESTATE IS LOCATED WITHIN HIDALGO COUNTY PRECINCT No. 1 IN THE CENTRAL EAST OF HIDALGO COUNTY ON THE SOUTH SIDE OF ROSEVELT ROAD, 1,208 FEET EAST OF VAL VERDE ROAD, THE ONLY NEARBY MUNICIPALY IS THE CITY OF DONNA ACCORING TO THE MAP IN THE OFFICE OF THE SECRETARY OF THE CITY OF DONNA (POPULATION 15,845 /2005 CENSUS), CAMPBELL ESTATES LIES APPROXIMATELY 3.0 MILES FROM THE CITY LIMITS OF DONNA AND LIES WITHIN THE CITY'S 5 MILE EXTRATERRITORIAL JURISDICTION (ETJ) UNDER LOCAL GOVERNMENT CODE § 42.021

## DRAINAGE REPORT:

JANUARY 14, 2014
DRAINAGE REPORT:
BY: GUILLERMO A. ARRATIA, P.E.

CAMPBELL ESTATES
HIDALGO COUNTY, TEXAS

PROJECT LOCATION:
THE PROPERTY IS LOCATED ON TH SOUTH SIDE OF ROSEVELT ROAD (MILE 12 ½ NORTH ROAD) 1,208.00 FEET EAST OF VAL VERDE ROAD (FM 1423)

FLOOD PLAIN:
THE SUBJECT TRACT LIES IN ZONE "C", AREAS OF MINIMAL FLOODING.
IN ACCORDANCE WITH FEMA FIRM MAP NO. 480334 0425 C
MAP REVISED: NOVEMBER 16, 1988.

SOIL CONDITIONS:
A REVIEW OF THE SOIL SURVEY OF HIDALGO COUNTY INDICATES THE SUBJECT TRACT LIES IN AN AREA OF PREDOMINANTLY HIDALGO SANDY CLAY LOAM SOIL THAT HAS A POOR LOW SHRINK-SWALE POTENTIAL AND IS LISTED IN HYDROLOGICAL GROUP B

EXISTING CONDITIONS:
THE SUBJECT TRACT IS CURRENTLY DEVELOP, THE EXISTING TERRAIN HAS A GRADE OF APPROXIMATELY 0.10', EXISTING RUNOFF 17.55 CFS3 FROM THE SITE IS BY FORM OF SHEET FLOW RUNS TOWARDS THE EAST SIDE OF THIS TRACT.

PROPOSED CONDITIONS:
THE PROPOSED CONDITIONS FOR THIS SUBJECT TRACT CONSIST OF 4 RESIDENTAL/COMMERCIAL LOTS. THE STORM SEWER RUNOFF AFTER DEVELOPMENT TO BE 13.6 CFS, I HAVE CALCULATED THAT 42.24 CF OF STORM SEWER FOR A 10-YEAR DESIGN FREQUENCY AND WILL BE DETAINED WITHIN THE PROPERTY BY A DRAINAGE EXISTING NATURAL LOW AREAS, AND OUTFALLING INTO THE RE-GRADED ROAD SIDE DITCH, DRAINAGE PLAN TO BE APPROVED BY THE COUNTY OF HIDALGO AT THE TIME OF ISSUANCE OF BUILDING PERMIT.

CERTIFICATION:
BY MY SIGNATURE BELOW, I CERTIFY THAT THIS SUBDIVISION LIES IN A
THE SUBJECT TRACT LIES IN ZONE "C"
AREAS OF MINIMAL FLOODING.
IN ACCORDANCE WITH FEMA FIRM MAP NO. 480334 0425 C
MAP REVISED: NOVEMBER 16, 1988
BASED ON GRAPHICAL REPRESENTATION ON DATE SIGN.

GUILLERMO A. ARRATIA
LICENSED PROFESSIONAL ENGINEER NO. 94001
526 N. 5TH ST.
DONNA, TEXAS. 78537

GUILLERMO A. ARRATIA 94001 LICENSED PROFESSIONAL ENGINEER

COST ESTIMATE:

| | |
|---|---|
| STREET PAVING: | $ 000.00 |
| WATER SUPPLY SYSTEM | $ 6,500.00 |
| SEPTIC TANK SYSTEM | $ 6,000.00 |
| DRAINAGE | $ 000.00 |

SHEET 2 OF 2

INDEX TO SHEET OF CAMPBELL SUBDIVISION


| | |
|---|---|
| SHEET 1 | HEADING: INDEX, LOCATION MAP AND ETJ, PRINCIPAL CONTACTS |
| | PLAT WITH LOTS, STREETS, AND EASEMENT DESCRIPTIONS, LEGAL DESCRIPTION (METES AND BOUNDS), SURVEYOR'S AND ENGINEER'S CERTIFICATION, PLAT NOTES, AND RESTRICTIONS, OWNER'S DEDICATION, CERTIFICATION, AND ATTESTATION, COUNTY APPROVAL |
| | CERTIFICATES: COUNTY CLERK'S RECORDING CERTIFICATE, HIDALGO COUNTY CERTIFICATE OF PLAT APPROVAL, DESCRIPTION OF LOCATION OF SUBDIVISION WITH RESPECT TO THE ETJ OF A MUNICIPALITY AND DESIGNATE THE PRECINCT THE PROJECT IS SITUATED. |
| | H.C.I.D. CERTIFICATION, DONNA ISD DISTRICT NO. 1 CERTIFICATE OF APPROVAL, REVISION NOTES, H.C.H.D. |
| SHEET 2 | WATER DISTRIBUTION AND ON-SITE SEWAGE FACILITY, ENGINEERING REPORT (ENGLISH AND SPANISH VERSION), INCLUDING DESCRIPTION OF WATER AND WASTE |
| | WATER AND ENGINEER'S CERTIFICATION (ENGLISH AND SPANISH VERSION), |
| | TYPICAL WATER SERVICE CONNECTION, OWNER'S DEDICATION, CERTIFICATION, AND ATTESTATION |
| | DRAINAGE REPORT INCLUDING DESCRIPTION OF DRAINAGE AND HOW IT WILL SERVE THIS DEVELOPMENT, MAP OF TOPOGRAPHY AND DRAINAGE, AND ENGINEER'S CERTIFICATION, REVISION NOTES, CONSTRUCTION DETAILS |



NAIN ENGINEERING, L.L.C.
CONSULTING ENGINEER
526 N. 5TH STREET
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FIRM NO. F-9050
PH. (956) 784-0218
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# HIDALGO COUNTY
# PLANNING DEPARTMENT

1304 SOUTH 25TH STREET
EDINBURG TEXAS 78539
Tel. 956-318-2840 Fax. 956-318-2844

Raul E. Sesin, P.E., CFM
Planning Administrator

## HIDALGO COUNTY COMMISSIONERS COURT MEETING
**DATE: 03-04-2014**

PROPOSED **ROJAS** SUBDIVISION, PRECINCT No. **4 .**

ENGINEER: **R. E. GARCIA & ASSOC.** DEVELOPER: **RAFAEL A. ROJAS**

☒ PRELIMINARY APPROVAL ☐ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: **2** ☒ *SINGLE FAMILY ___ ☐ *MULTI-FAMILY ___ ☐ COMMERCIAL ___ ☐ INSTITUTIONAL

LOCATION DESCRIPTION: **North of Aurora Rd. Approx. 300 feet East of Seminary Rd.**

SUBDIVISION LIES WITHIN THE: ☒ *ETJ of* **Edinburg** *and was approved administratively by said City.*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **10-02-13** PROPERTY LIES WITHIN FLOOD ZONE: **"X"** AS PER FEMA.

DRAINAGE DESIGN: **Detention will be accomplished by properly grading the landscape areas which will overflow on the Aurora Road side ditch.**

ROAD R.O.W. DEDICATION: **5 feet on Aurora Rd.**

H.C.R.O.W. FINAL APPROVAL DATE: **10-21-14** By, **Joe Ochoa** PCT. 4 R.O.W. AGENT

H.C.H.D. FINAL APPROVAL DATE: **01-29-14** By, **Elizardo "Chardo" Ramos,** Environmental Health Division Manager

☒ OSSF & SOIL ANALYSIS WERE CONDUCTED BY: **Raul E. Garcia, P.E.**

SEWER SYSTEM: ☐ OSSF HAVE BEEN INSTALLED AND INSPECTED BY HCHD ON: _____

WATER SERVICE PROVIDER: **City Of Edinburg** LINE SIZE: **2"** LOCATION: **Aurora Road**

H.C.O.E.C. FINAL APPROVAL DATE: **02-13-14 .**: By **Martin Ramirez,** Environmental Compliance Coordinator

☒ Less than 1 acre and project is not part of a larger common plan of development – Project will not need coverage under TPDES General Permit for Construction Activities (TXR150000). No further submittals are required.

STAFF RECOMMENDS:

☒ **Preliminary Approval** *subject to comments and future recommendations by planning, other departments and the approval of the City of* **Edinburg .**

☐ **Preliminary Approval** *subject comments and future recommendations by planning and other Departments*

☐ **Final Approval** *subject to recommendations other departments*

☐ **Final Approval** *with financial guarantee.*

*This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules,*

* *Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*

# METES AND BOUNDS DESCRIPTION FOR A 1.38 ACRE TRACT

A 1.38 acre tract of land being a portion of Lot 12, Whittenburg and Looney Subdivision as recorded in Volume 8, Page 42, Map Records, Hidalgo County, Texas, also being that certain tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, and being more fully described by metes and bounds as follows:

BEGINNING at a set cotton picker spindle on the centerline of Aurora Road also being the being the south line of said Lot 12, being the southwest corner of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, also being the southeast corner of that certain tract described in Warranty Deed recorded in Document # 573466, Official Records, Hidalgo County, Texas, for the southwest corner of herein described tract. Said point bears S 81 21' 00" E 331.43 feet from a found one-half inch iron rod being the southwest corner of said Lot 12.

THENCE N 08 39' 00" E along the west line of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, also being the east line of said tract described in Warranty Deed recorded in Document # 573466, Official Records, Hidalgo County, Texas, being parallel to the west line of said Lot 12, pass at 20.00 feet a set one-half inch iron rod being the north Right-of-Way line of said Aurora Road and continuing for a total distance of 194.17 feet to a set one-half inch iron rod on the south line of that certain tract described in Warranty Deed recorded in Volume 1534, Page 486, Deed Records, Hidalgo County, Texas, being the northwest corner of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, also being the northeast corner of said tract described in Warranty Deed recorded in Document # 573466, Official Records, Hidalgo County, Texas, the northwest corner of herein described tract.

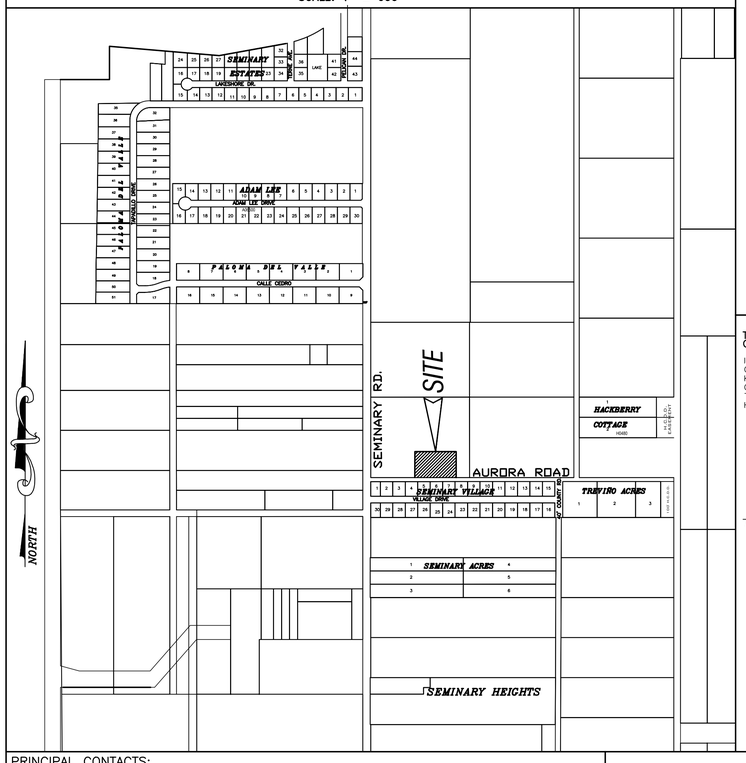
THENCE S 81 31' 00" E 309.94 feet along said south line of tract described in Warranty Deed recorded in Volume 1534, Page 486, Deed Records, Hidalgo County, Texas, also being the north line of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, to a found one-half inch iron rod being the northeast corner of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, also being the northwest corner of that certain tract described in Warranty Deed with Vendor's Lien recorded in Document # 863234, Official Records, Hidalgo County, Texas, for the northeast corner of herein described tract.

THENCE S 08 39' 00" W along the east line of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, also being the west line of said tract described in Warranty Deed with Vendor's Lien recorded in Document # 863234, Official Records, Hidalgo County, Texas, being parallel to the west line of said Lot 12, pass at 175.07 feet a set one-half inch iron rod being the north Right-of-Way line of said Aurora Road and continuing for a total distance of 195.07 feet to a set cotton picker spindle on the centerline of said Aurora Road also being the south line of said Lot 12, being the southeast corner of said tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas, also being the southwest corner said tract described in Warranty Deed with Vendor's Lien recorded in Document # 863234, Official Records, Hidalgo County, Texas, for the southeast corner of herein described tract.

THENCE N 81 21' 00" W 309.94 feet along said centerline of Aurora Road also being the south line of said Lot 12 to the point of beginning and containing 1.38 acres of land, more or less.

# LOCATION MAP

SCALE: 1" = 600'




| PRINCIPAL CONTACTS: NAME: | ADDRESS: | CITY & ZIP | PHONE #/ FAX #: |
|---|---|---|---|
| OWNER: RAFAEL A. ROJAS | 1503 AURORA ROAD | EDINBURG, 78541 | 781-4207 / – |
| OWNER: ESTELA G. ROJAS | 1503 AURORA ROAD | EDINBURG, 78541 | 781-4207 / – |
| ENGINEER: RAUL E. GARCIA | 116 N. 12TH | EDINBURG, 78539 | 381-1061 / 381-1280 |
| SURVEYOR: RAUL E. GARCIA | 116 N. 12TH | EDINBURG, 78539 | 381-1061 / 381-1280 |

SHEET NO. 1 OF 2 SHEETS

## REVISION NOTES

| No. | Sheet | REVISION | Date | Approved |
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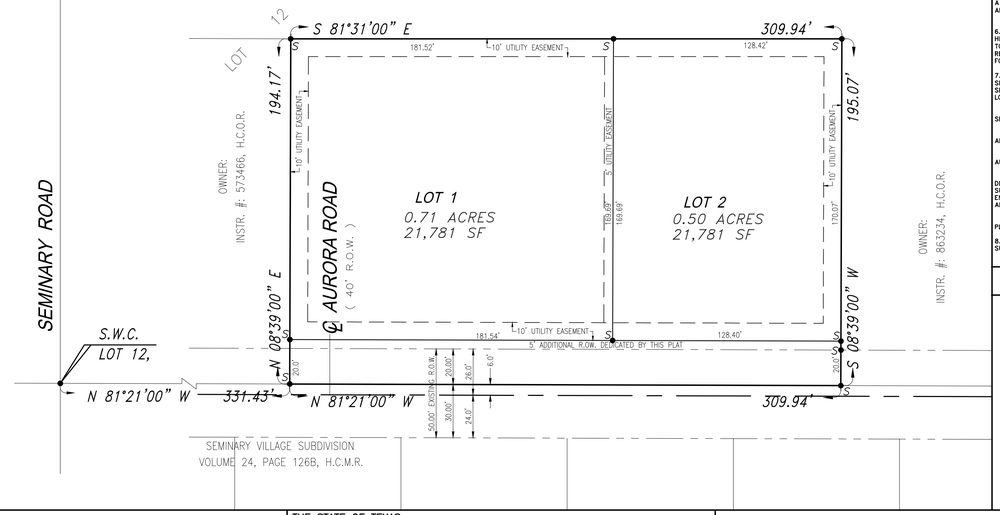
**LEGEND :**

F – FOUND 1/2"ø IRON ROD
S – SET 1/2"ø IRON ROD
$S_1$ – SET COTTON PICKER SPINDLE

SCALE: 1"=40'

BEARINGS BASED ON RECORD BEARINGS OF: AVELAR ESTATES SUBDIVISION, AS RECORDED IN VOLUME 52, PAGE 47, H.C.M.R.




# MINOR PLAT OF ROJAS SUBDIVISION

A 1.38 acre tract of land being a portion of Lot 12, Whittenburg and Looney Subdivision as recorded in Volume 8, Page 42, Map Records, Hidalgo County, Texas, also being that certain tract described in Warranty Deed recorded in Document # 1090532, Official Records, Hidalgo County, Texas

DATE: MARCH 22, 2011

SCALE IN FEET 0 40' 80' 120'

SCALE: 1"---- 40'


ENGINEER: R.E. Garcia
R. E. GARCIA & ASSOCIATES
FIRM #: F-5001

PREPARED BY: R.E. GARCIA & ASSOCIATES
116 NORTH 12TH AVENUE EDINBURG, TEXAS 78539 PHONE (956) 381-1061 FAX: 381-1280


## PLAT NOTES & RESTRICTIONS:

1. FLOOD ZONE STATEMENT:
FLOOD ZONE DESIGNATION: ZONE "X" SHADED
ZONE "X" SHADED IS DEFINED AS AREAS OF 500 YEAR FLOOD; AREAS OF 100-YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILEAND AREA PROTECTED BY LEVEES FROM 100-YEAR FLOOD

COMMUNITY-PANEL NO. 480334 0325 D EFFECTIVE DATE: JUNE 6, 2000, LOMR: MAY 30, 2001 OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS FOR HIDALGO COUNTY, TEXAS AND THE LOCAL FLOOD PLAIN ADMINISTRATOR HAVE IDENTIFY AN AREA AS SHOWN ON THIS PLAT WITHIN THE PROPOSED SUBDIVISION TO BE WITHIN THE 100-YEAR FLOOD PLAIN.
CONSTRUCTION OF RESIDENTIAL HOUSING WITHIN ANY AREA OF THE SUBDIVISION THAT IS IN THE 100-YEAR FLOOD PLAIN IS PROHIBITED UNLESS THE HOUSING QUALIFIES FOR INSURANCE UNDER THE NATIONAL FLOOD INSURANCE ACT OF 1968 (42 U.S.C. SECTIONS 4001 THROUGH 4127).

2. SETBACKS:
FRONT: 40.00 FEET ON AURORA ROAD
REAR: 15.00 FEET OR EASEMENT, WHICHEVER IS GREATER
SIDE: 6.00 FEET OR EASEMENT WHICHEVER IS GREATER

3. GENERAL NOTE FOR SINGLE FAMILY RESIDENCES: NO MORE THAN ONE-SINGLE FAMILY DETACHED DWELLING SHALL BE LOCATED ON EACH LOT. THIS RESTRICTION SHALL BE PLACED IN ALL DEEDS AND CONTRACTS FOR DEEDS FOR REAL ESTATE SOLD WITHIN THE SUBDIVISION. (ANY OTHER USE SHALL REQUIRE PLANNING DEPARTMENT, OFFICE OF ENVIORMENTAL COMPLIANCE, HEALTH DEPARTMENT AND FIRE MARSHALL APPROVAL). APPLICATIONS FOR CONSTRUCTION ARE REQUIRED PRIOR TO OCCUPYING THE LOT.

4. MINIMUM FINISH FLOOR NOTE: MINIMUM FINISHED FLOOR ELEVATION SHALL BE 24" ABOVE THE CENTER LINE OF STREET OR 24" ABOVE NATURAL GROUND, WHICHEVER IS GREATER. ELEVATION CERTIFICATE MAY BE REQUIRED FOR LOTS LOCATED OUTSIDE A DESIGNATED FLOOD ZONE AT THE TIME OF APPLICATION FOR CONSTRUCTION TO VERIFY PRE AND POST CONSTRUCTION FINISHED FLOOR ELEVATIONS. AN ELEVATION CERTIFICATE SHALL BE REQUIRED FOR ALL LOTS WITHIN A DESIGNATED FLOOD ZONE AT THE TIME FOR A DEVELOPMENT PERMIT APPLICATION.

5. BENCHMARK NOTE: THE FOLLOWING BENCHMARKS ARE IDENTIFIED ON THE FACE OF THE PLAT AND ON THE ATTACHED ENGINEERING PLANS.
B.M.—1 ELEV. 78.31 N.G.V.D. 83
A BRASS DISK SET IN A 1' X 1' CONCRETE BLOCK APPROXIMATELY 35.00 FEET SOUTH AND 40.00 FEET EAST OF THE NORTH WEST CORNER OF LOT 1 OF THIS SUBDIVISION.

6. DRAINAGE: IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 AND HIDALGO COUNTY REQUIREMENTS, THIS DEVELOPMENT WILL BE REQUIRED TO DETAIN A TOTAL OF 794 CUBIC-FEET (0.0182 ACRE-FEET) OF STORM WATER RUNOFF. DRAINAGE RETENTION IN ACCORDANCE WITH THE LOCAL REQUIREMENTS WILL BE ACCOMPLISHED AS FOLLOWS: BY UTILIZING PROPERLY GRADED LANSCAPED AREAS.

7. ON-SITE SEWAGE FACILITIES (OSSF) NOTE: THIS SUBDIVISION SHALL USE ON-SITE SEWAGE FACILITIES IN ACCORDANCE WITH TCEQ AND HIDALGO COUNTY REGULATIONS FOR SEWAGE DISPOSAL. THE SUBDIVIDER IS RESPONSIBLE FOR PROVIDING AN OSSF ON ALL LOTS.

A. OSSF SYSTEM IS BEING DESIGNED FOR DISPOSAL OF DOMESTIC SEWERAGE ONLY. A SEPARATE DESIGN SHALL BE SUBMITTED FOR COMMERCIAL/MULTIFAMILY USE.

B. EACH LOT ON THIS PLAT COMPLIES WITH THE MINIMUM 21,780 SQUARE FEET LOT AREA WITH POTABLE WATER SUPPLY.

C. OSSF SYSTEM SHALL REQUIRE INSPECTION AND APPROVAL BY HIDALGO COUNTY AUTHORIZED DEPARTMENT

D. SOIL ANALYSIS HAVE BEEN SUBMITTED TO THE AUTHORIZED HIDALGO COUNTY DEPARTMENT AND EXCERPTS MAY BE ALSO SEEN ON THE UTILITY LAYOUT FOR THIS SUBDIVISION AS SUBMITTED TO THE HIDALGO COUNTY PLANNING DEPARTMENT. THE ENGINEER HAS DETERMINED THAT THE SOIL IS SUITABLE FOR A STANDARD SEPTIC TANK AND ABSORPTIVE DRAINFIELD SYSTEM.

E. APPROVED "OSSF" PERMIT APPLICATION IS REQUIRED INCLUDING INDIVIDUAL LOT PLANNING MATERIALS PRIOR TO OCCUPYING A LOT.

8. THERE ARE NO WATER WELLS WITHIN 150 FEET FROM THE BOUNDARIES ON THIS SUBDIVISION.

9. RAFAEL A. ROJAS & ESTELA G. ROJAS, THE OWNERS & SUBDIVIDERS OF ROJAS SUBDIVISION, RETAINS AN EASEMENT UPON EACH LOT FOR THE PURPOSE OF INSTALLING AN APPROVED OSSF ON THE LOT AS DESCRIBED ON SHEET NO.2 OF THIS PLAT.

10. NO STRUCTURE SHALL BE PERMITTED OVER ANY EASEMENT. EASEMENTS SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, SHEDS, BRUSH/ TREES, AND OTHER PLANTINGS (EXCEPT LOW, LESS THAN 18 INCHES MATURE HEIGHT, GROUND COVER, GRASS, OR FLOWERS) AND OTHER OBSTRUCTIONS THAT WOULD INTERFERE WITH THE OPERATIONS AND MAINTENANCE OF THE EASEMENT.

11. EACH PURCHASED CONTRACT MADE BETWEEN A SUBDIVIDER AND PURCHASER OF A LOT IN THIS SUBDIVISION SHALL CONTAIN A STATEMENT DESCRIBING HOW AND WHEN WATER, SEWER, ELECTRICITY, AND GAS SERVICES WILL BE MADE AVAILABLE TO THE SUBDIVISION.

12. ALL PUBLIC UTILITIES EASEMENTS DEDICATED BY THIS PLAT SHALL BE A MINIMUM WIDTH OF 15.00 FEET AS PER THE HIDALGO COUNTY MODEL SUBDIVISION RULES. BY SIGNING THIS PLAT DEVELOPER AND ENGINEER CERTIFY THAT ALL OTHER EASEMENTS SHOWN COMPLY WITH THE SIZE REQUIRED BY EACH UTILITY PROVIDER OCCUPYING AN EASEMENT.

13. ALL EASEMENTS ON THIS PLAT ARE DEDICATED BY THIS PLAT UNLESS NOTED OTHERWISE.

14. AN OFF-STREET PARKING LOT SITE PLAN & DRAINAGE PLAN APPROVED BY THE HIDALGO COUNTY PLANNING DEPARTMENT & OFFICE OF ENVIORMENTAL COMPLIANCE SHALL BE REQUIRED FOR COMMERCIAL INDUSTRIAL & MULTIFAMILY USE AT THE TIME OF APPLICATION FOR CONSTRUCTION PRIOR TO THE ISSUANCE OF A BUILDING AND/OR DEVELOPMENT PERMIT. NO WATER OR LIGHT CLEARANCES SHALL BE ISSUED UNTIL THE SITE PLAN, DRAINAGE PLAN AND OSSF PLAN ARE APPROVED AND PROPOSED IMPROVEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH COUNTY AND STATE STANDARDS.

### LOCATION OF SUBDIVISION WITH RESPECT TO THE EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY:

ROJAS SUBDIVISION IS LOCATED IN CENTRAL HIDALGO COUNTY IN H.C.P. #4 ON THE NORTH SIDE OF AURORA ROAD, APPROXIMATELY 330 FEET EAST OF THE INTERSECTION OF SEMINARY ROAD & AURORA ROAD. THE NEAREST MUNICIPALITY IS THE CITY OF EDINBURG. ACCORDING TO THE OFFICAL MAP LOCATED IN THE OFFICE OF THE SECRETARY OF THE CITY OF EDINBURG (75,544), ROJAS SUBDIVISION LIES APPROXIMATELY 1 1/2 MILE FROM THE CITY LIMITS AND IS INSIDE THE CITY'S ETJ ACCORDING TO LOCAL GOVERNMENT CODE SECTION 42.021.

### INDEX OF SHEETS


| No. | DESCRIPTION |
|---|---|
| 1 | HEADING; INDEX; LOCATION MAP AND ETJ; PRINCIPAL CONTACTS; PLAT WITH LOTS, STREETS AND EASEMENT DESIGNATION; METES & BOUNDS; SURVEYOR'S & ENGINEER'S CERTIFICATION; PLAT NOTES & RESTRICTIONS; OWNER'S DEDICATION, CERTIFICATION AND ATTETSTATION; COUNTY CLERK'S RECORDING CERTIFICATE; HIDALGO COUNTY APPROVAL; DESCRIPTION OF LOCATION WITH RESPECT TO THE ETJ OF A MUNICIPALITY; H.C.D.D. APPROVAL; H.C.R.W. APPROVAL; H.C.H.D. APPROVAL;IRRIGATION DISTRICT APPROVAL; REVISION NOTES |
| 2 | WATER DISTRUBUTION AND SANITARY SEWER (OSSF) MAP, ENGINEERING REPORT (ENGLISH AND SPANISH VERSION), INCLUDING DESCRIPTION OF WATER AND WASTE WATER (OSSF) AND ENGINEER'S CERTIFICATION (ENGLISH AND SPANISH); SAMPLE OF LOG BORE FOR OSSF SYSTEM. TYPICAL WATER SERVICE CONNECTION; SUBDIVIDER CERTIFICATE AND STATEMENT, MAP OF TOPOGRAPHY & DRAINAGE WITH ENGINEER'S CERTIFICATION, REVISION NOTES, DRAINAGE REPORT INCLUDING DESCRIPTION OF DRAINAGE AND HOW IT WILL SERVE THIS DEVELOPMENT |


### THE STATE OF TEXAS
### COUNTY OF HIDALGO

I, RICHARD HINOJOSA, ADMINISTRATOR/DIRECTOR OF PLANNING AND ZONING DEPARTMENT OF THE CITY OF EDINBURG, TEXAS DO HEREBY CERTIFY THIS MINOR SUBDIVISION PLAT KNOWN AS ROJAS SUBDIVISION CONFORMS TO ALL SUBDIVISION REQUIREMENTS OF THIS CITY WHEREIN MY APPROVAL IS REQUIRED AND HAS BEEN APPROVED FOR RECORDING ON THIS THE _____ DAY OF _____, 20_____WITH THE COUNTY CLERK OF HIDALGO COUNTY, TEXAS.

_____
ADMINISTRATOR/PLANNING AND ZONING DEPARTMENT DIRECTOR

### THE STATE OF TEXAS
### COUNTY OF HIDALGO
### OWNER'S CERTIFICATION, DEDICATION, & ATTESTATION

WE, **RAFAEL A. ROJAS & ESTELA G. ROJAS** AS OWNER OF THE **0.61** ACRE TRACT OF LAND ENCOMPASSED WITHIN THE PROPOSED **ROJAS SUBDIVISION** HEREBY SUBDIVIDE THE LAND AS DEPICTED IN THIS SUBDIVISION PLAT AND DEDICATE TO PUBLIC USE THE STREET AND EASEMENTS SHOWN HEREIN. I CERTIFY THAT I HAVE COMPLIED WITH THE REQUIREMENTS OF TEXAS LOCAL GOVERNMENT CODE § 232.032 AND THAT

(A)THE WATER QUALITY AND CONNECTIONS TO THE LOTS WILL MEET THE MINIMUM STANDARDS;
(B)SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS WILL MEET THE MINIMUM STATE STANDARDS;
(C)ELECTRICAL CONNECTIONS PROVIDED TO THE LOTS OR SEPTIC TANKS WILL MEET THE MINIMUM STATE STANDARDS;
(D)GAS CONNECTIONS, IF AVAILABLE, PROVIDED TO THE LOTS WILL MEET THE MINIMUM STATE STANDARDS;

I ATTEST THAT THE MATTERS ASSERTED IN THIS PLAT ARE TRUE AND COMPLETE.

RAFAEL A. ROJAS
1503 AURORA ROAD
EDINBURG, TX. 78541

ESTELA G. ROJAS
1503 AURORA ROAD
EDINBURG, TX. 78541

**THE STATE OF TEXAS )(**
**COUNTY OF HIDALGO )(**

BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS DAY APPEARED **RAFAEL A. ROJAS & ESTELA G. ROJAS**, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____,20___.

My Commission Expires: _____ Notary Public in and for Hidalgo County, Texas

### COUNTY CLERK'S RECORDING CERTIFICATE

I,_____ COUNTY CLERK OF HIDALGO COUNTY, CERTIFY THAT THE PLAT BEARING THIS CERTIFICATE WAS FILED FOR RECORD AT_____O'CLOCK __M, ON_____, _____, AND WAS RECORDED IN INSTRUMENT #:_____OF THE MAP RECORDS OF HIDALGO COUNTY.

_____ HIDALGO COUNTY CLERK

HIDALGO COUNTY
CERTIFICATE OF PLAT APPROVAL

I THE UNDERSIGNED CERTIFY THAT THIS PLAT OF **ROJAS SUBDIVISION** WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY RIGHT OF WAY DEPARTMENT ON_____, _____

HIDALGO COUNTY RIGHT OF WAY DIRECTOR DATE

HIDALGO COUNTY
CERTIFICATE OF PLAT APPROVAL

I THE UNDERSIGNED CERTIFY THAT THIS PLAT OF **ROJAS SUBDIVISION** WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT ON_____, _____

HIDALGO COUNTY ASSISTANT CHIEF INSPECTOR DATE

### THE STATE OF TEXAS
### COUNTY OF HIDALGO

I, RAUL GARCIA , REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE FROM AN ACTUAL SURVEY MADE ON THE GROUND OF THE PROPERTY LEGALLY DESCRIBED HEREON, AND THAT THERE ARE NO APPARENT DISCREPANCIES, CONFLICTS, OVERLAPPING OF IMPROVEMENTS, VISIBLE UTILITY LINES OR ROADS IN PLACE, EXCEPT AS SHOWN ON THE ACCOMPANYING PLAT, AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY SUPERVISION IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS OF THE CITY OF EDINBURG, TEXAS.

_____ REGISTERED PROFESSIONAL LAND SURVEYOR #4204

### APPROVAL BY DRAINAGE DISTRICT:

***HIDALGO COUNTY DRAINAGE DISTRICT NO.1*** HEREBY CERTIFIES THAT THE DRAINAGE PLANS FOR THIS SUBDIVISION COMPLY WITH THE MINIMUM STANDARDS OF THE DISTRICT ADOPTED UNDER TEXAS WATER CODE #49.211(C). THE DISTRICT HAS NOT REVIEWED AND DOES NOT CERTIFY THAT THE DRAINAGE STRUCTURES DESCRIBED ARE APPROPRIATE FOR THE SPECIFIC SUBDIVISION, BASED ON GENERALLY ACCEPTED ENGINEERING CRITERIA. IT IS THE RESPONSIBILITY OF THE DEVELOPER OF THE SUBDIVISION AND ITS ENGINEER TO MAKE THESE DETERMINATIONS.

**HIDALGO COUNTY DRAINAGE DISTRICT NO.1**

BY: _____
**DISTRICT MANAGER**

### HIDALGO COUNTY
### CERTIFICATE OF PLAT APPROVAL
### UNDER LOCAL GOVERNMENT CODE § 232.028(a)

WE, THE UNDERSIGNED CERTIFY THAT THIS PLAT OF THE ROJAS SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY COMMISIONERS COURT ON_____, _____.

HIDALGO COUNTY JUDGE DATE

ATTEST: _____ _____
HIDALGO COUNTY CLERK DATE

### THE STATE OF TEXAS
### COUNTY OF HIDALGO

I, THE UNDERSIGNED, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN TO THIS PLAT.

_____ REGISTERED PROFESSIONAL ENGINEER #64790

# FINAL ENGINEERING REPORT FOR ROJAS SUBDIVISION
by Raul E. Garcia, P.E.

## FINAL WATER AND SEWER ENGINEERING REPORT
## WATER SUPPLY: DESCRIPTION, COST, AND OPERABILITY DATE:

ROJAS SUBDIVISION WILL BE PROVIDED WITH POTABLE WATER BY THE CITY OF EDINBURG (EDINBURG). THE SUBDIVIDER AND EDINBURG HAVE ENTERED INTO A CONTRACT IN WHICH EDINBURG HAS PROMISED TO PROVIDE SUFFICIENT WATER TO THE SUBDIVISION FOR AT LEAST 30 YEARS AND EDINBURG HAS PROVIDED DOCUMENTATION TO SUFFICIENTLY ESTABLISH THE LONG TERM QUANTITY AND QUALITY OF THE AVAILABLE WATER SUPPLIES TO SERVE THE FULL DEVELOPMENT OF THIS SUBDIVISION.

EDINBURG HAS AN EXISTING 2" DIAMETER WATER LINE RUNNING ALONG THE WEST SIDE OF THE RIGHT-OF-WAY OF SHARP ROAD. THE WATER SYSTEM FOR ROJAS SUBDIVISION CONSISTS OF A SINGLE 3/4" DIAMETER WATER SERVICE LINE THAT TAPS INTO THE EXISTING 2" LINE. THIS 3/4" SERVICE LINE THEN RUNS EAST ACROSS SHARP ROAD AND ENDING IN A WATER METER.

WATER DISTRIBUTION FOR THE ROJAS SUBDIVISION CONSISTS OF A SINGLE ¾" DIAMETER SERVICE LINE. SAID SERVICE TERMINATE AT THE WATER METER BOXES FOR THE LOT. THE ¾" SINGLE SERVICE AND THE METER BOX HAVE ALREADY BEEN INSTALLED, AT A TOTAL COST OF $750.00. IN ADDITION, THE SUBDIVIDER HAS PAID EDINBURG. THE SUM OF $ 1,0000.00, WHICH COVERS THE $150.00 COST AS STATED IN THE 30 YEAR WATER SERVICE AGREEMENT WHICH SUM REPRESENTS THE TOTAL COST OF WATER METER, RIGHTS ACQUISITION FEES, AND ALL MEMBERSHIP OR OTHER FEES ASSOCIATED WITH CONNECTING THE INDIVIDUAL LOTS IN THE SUBDIVISION TO N.A.W.S.C. UPON REQUEST BY THE LOT OWNER, N.A.W.S.C. WILL PROMPTLY INSTALL AT NO CHARGE THE WATER METER FOR THAT LOT. THE ENTIRE WATER FACILITIES HAVE BEEN APPROVED AND ACCEPTED BY N.A.W.S.C. AND SAID DISTRIBUTION SYSTEM IS OPERABLE AS OF THE DATE OF THE RECORDING OF THE PLAT.

## SEWAGE FACILITIES DESCRIPTION; COST AND OPERABILITY DATES

SEWAGE FROM ROJAS SUBDIVISION WILL BE TREATED BY INDIVIDUAL ON-SITE SEWAGE FACILITIES ("OSSF") CONSISTING OF A STANDARD DESIGN DUAL COMPARTMENTS SEPTIC TANK AND A DRAIN FIELD ON EACH LOT. THE UNDERSIGNED PROFESSIONAL ENGINEER HAS EVALUATED THE SUITABILITY OF THE SUBDIVISION SITE FOR OSSF AND SUBMITTED A REPORT CONCLUDING THAT THE SITE IS SUITABLE FOR OSSF. THE REPORT WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT. EACH LOT HAS ADEQUATE AREA FOR A REPLACEMENTS DRAINFIELD.

## SOIL EVALUATION REPORT:

EACH LOT IN THE PROPOSED SUBDIVISION IS AT LEAST 1/2 ACRE IN SIZE. THE NATURAL RESOURCE CONSERVATION SERVICE SOIL SURVEY BOOK INDICATED A SANDY CLAY LOAM SOIL FOR THE AREA. AT LEAST TWO SOIL EXCAVATIONS WERE PERFORMED ON THE SITE, AT OPPOSITE ENDS OF THE PROPOSED DISPOSAL AREA. (ADDITIONAL BORINGS WERE UNNECESSARY BECAUSE THE SOILS ARE VERY UNIFORM WITHIN THIS LIMIT AREA). THE SOIL IS A DARK GRAYISH BROWN SANDY CLAY LOAM EXTENDING UP TO 36" BELOW THE BOTTOM OF ANY PROPOSED EXCAVATIONS. THERE IS NO INDICATION OF GROUNDWATER OR A RESTRICTIVE LAYER WITHIN 24" OF BOTTOM OF THE PROPOSED EXCAVATIONS. THE SUBDIVISION DRAINS WELL. THE SOIL IS A CLASS III SOIL.

THE COST TO INSTALL A SEPTIC SYSTEM ON AN INDIVIDUAL LOT IS $1,500.00, INCLUDING THE COST FOR THE REQUIRED PERMIT AND LICENSE. ALL OSSFS HAVE BEEN INSTALLED AS OF THE TIME OF APPLICATION FOR FINAL PLAT APPROVAL AT A TOTAL COST OF $1,500.000. THE HIDALGO COUNTY HEALTH DEPARTMENT HAS INSPECTED AND APPROVED THE INSTALLATION OF THE OSSF ON OCTOBER 12, 2014.

## ENGINEER CERTIFICATION:

BY MY SIGNATURE BELOW, I CERTIFY THAT THE WATER AND SEWAGE SERVICE FACILITIES DESCRIBED ABOVE ARE IN COMPLIANCE WITH THE MODEL RULES ADOPTED UNDER SECTION 16.343, WATER CODE. I CERTIFY THAT THE ESTIMATED COSTS TO INSTALL UNCONSTRUCTED WATER AND ON-SITE SEWAGE FACILITIES, DISCUSSED ABOVE, ARE AS FOLLOWS:

WATER FACILITIES – THESE FACILITIES FULLY CONSTRUCTED, WITH THE INSTALLATION OF WATER METERS, WILL COST A GRAND TOTAL OF $750.00.

SEWAGE FACILITIES – SEPTIC SYSTEM IS ESTIMATED TO COST $1,500.00 PER LOT (ALL INCLUSIVE), FOR A TOTAL OF $1,500.00 FOR THE ENTIRE SUBDIVISION.

ENGINEER'S SIGNATURE DATE

# FINAL ENGINEERING REPORT FOR ROJAS SUBDIVISION
by Raul E. Garcia, P.E.

**PROVISIÓN DE AGUA: DESCRIPCIÓN, GASTOS Y FECHAS DE INICIO**

LA SUBDIVISIÓN DE LOS ACRES DE SOLIS SERÁ PROPORCIONADA AGUA POTABLE POR NORTH ALAMO WATER SUPPLY CORPORATION (N.A.W.S.C.). LOS SUBDIVIDER Y LOS N.A.W.S.C. HAN FIRMADO UN CONTRATO EN EL CUAL N.E.W.S.C. HA PROMETIDO PROPORCIONAR LA SUFICIENTE AGUA A LA SUBDIVISIÓN POR LO MENOS 30 AÑOS Y N.A.W.S.C. HA PROPORCIONADO LA DOCUMENTACIÓN PARA ESTABLECER SUFICIENTEMENTE LA CANTIDAD Y LA CALIDAD DE LARGO PLAZO DE LOS ABASTECIMIENTOS DE AGUA DISPONIBLES PARA SERVIR EL DESARROLLO COMPLETO DE ESTA SUBDIVISIÓN.

N.A.W.S.C. TIENE Un 2" EXISTENTE; LÍNEA DE AGUA DEL DIÁMETRO QUE FUNCIONA A LO LARGO DEL LADO OESTE DEL DERECHO DE PASO DEL CAMINO AGUDO. El CIRCUITO DE AGUA PARA lo SUBDIVISIÓN de los ACRES de SOLIS CONSISTE EN Un SOLO 3/4" LÍNEA de SERVICIO del AGUA del DIÁMETRO QUE GOLPEA LIGERAMENTE EN El 2" EXISTENTE; LÍNEA. ESTE 3/4" LA LÍNEA DE SERVICIO ENTONCES FUNCIONA AL ESTE A TRAVÉS DEL CAMINO AGUDO Y DE LA CONCLUSIÓN EN UN CONTADOR DEL AGUA.

LA DISTRIBUCIÓN DE AGUA PARA LOS ACRES DE SOLIS CONSISTE EN UN SOLO " DEL ½ LÍNEA DE SERVICIO DEL DIÁMETRO. EL SERVICIO DICHO TERMINA EN LAS CAJAS DEL CONTADOR DEL AGUA PARA LA PORCIÓN. El " del ½ EL SOLO SERVICIO Y LA CAJA DEL METRO HAN ESTADO INSTALADOS YA, EN UN COSTE TOTAL DE $750.00. ADEMÁS, EL SUBDIVIDER HA PAGADO A N.A.W.S.C. LA SUMA DE $ 1,0000.00, QUE CUBRE LOS $150.00 COSTADOS POR LA PORCIÓN SEGÚN LO INDICADO EN EL ACUERDO DE SERVICIO DEL AGUA DE 30 AÑOS QUE LA SUMA REPRESENTA EL COSTE TOTAL DEL CONTADOR DEL AGUA, LOS HONORARIOS DE LA ADQUISICIÓN DE LAS DERECHAS, Y TODA LA CALIDAD DE MIEMBRO U OTROS HONORARIOS ASOCIADOS A CONECTAR LAS PORCIONES DEL INDIVIDUO EN LA SUBDIVISIÓN CON N.A.W.S.C.A PETICIÓN POR EL DUEÑO DE LA PORCIÓN, N.A.W.S.C. INSTALARÁ PUNTUALMENTE EN NINGUNA CARGA EL CONTADOR DEL AGUA PARA ESA PORCIÓN. SE HAN APROBADO LAS INSTALACIONES DE AGUA ENTERAS Y ACEPTADO POR N.A.W.S.C.Y EL SISTEMA DE DISTRIBUCIÓN DICHO ES OPERABLE EN FECHA LA FECHA DE LA GRABACIÓN DEL PLAT.

**DESCRIPCIÓN DE LAS INSTALACIONES DE LAS AGUAS RESIDUALES;**

LAS AGUAS RESIDUALES DE LA SUBDIVISIÓN DE SOLIS SERÁN TRATADAS POR LAS INSTALACIONES EN SITIO INDIVIDUALES DE LAS AGUAS RESIDUALES (" OSSF") CONSISTIR EN UN TANQUE SÉPTICO DE LOS COMPARTIMIENTOS DUALES DEL DISEÑO ESTÁNDAR Y UN CAMPO DEL DREN EN CADA PORCIÓN. EL INGENIERO PROFESIONAL INFRASCRITO HA EVALUADO LA CONVENIENCIA DEL SITIO DE LA SUBDIVISIÓN PARA OSSF Y HA SOMETIDO UN INFORME QUE CONCLUÍA QUE EL SITIO ES CONVENIENTE PARA OSSF. EL INFORME FUE REPASADO Y APROBADO POR EL DEPARTAMENTO DE LA SALUD DEL CONDADO DEL HIDALGO. CADA PORCIÓN TIENE ÁREA ADECUADA PARA LOS REEMPLAZOS DRAINFIELD.

**INFORME DE EVALUACIÓN DEL SUELO:**

CADA PORCIÓN EN LA SUBDIVISIÓN PROPUESTA ES POR LO MENOS ACRE DEL 1/2 DE TAMAÑO. EL LIBRO DE LA ENCUESTA SOBRE SUELO DEL SERVICIO DE LA CONSERVACIÓN DEL RECURSO NATURAL INDICÓ UN SUELO DE LA MARGA DE LA ARCILLA DE SANDY PARA EL ÁREA. POR LO MENOS DOS EXCAVACIONES DEL SUELO FUERON REALIZADAS EN El SITIO, EN LOS EXTREMOS CONTRARIOS DEL ÁREA PROPUESTA DE LA DISPOSICIÓN. (LOS TALADROS ADICIONALES ERAN INNECESARIOS PORQUE LOS SUELOS SON MUY UNIFORMES DENTRO DE ESTA ÁREA DEL LÍMITE). El SUELO ES Una MARGA OSCURA de ARCILLA de SANDY del MARRÓN GRISÁCEO QUE EXTIENDE HASTA 36" DEBAJO DE LA PARTE INFERIOR DE CUAESQUIERA EXCAVACIONES PROPUESTAS. NO HAY INDICACIÓN DEL AGUA SUBTERRÁNEA O DE UNA CAPA RESTRICTIVA DENTRO DE 24' ' DE LA PARTE INFERIOR DE LAS EXCAVACIONES PROPUESTAS. LA SUBDIVISIÓN DRENA BIEN. El SUELO ES UN SUELO DE LA CLASE III.

EL COSTE PARA INSTALAR UN SISTEMA SEPTICO EN UNA PORCIÓN INDIVIDUAL ES $1.500.00, INCLUYENDO EL COSTE PARA EL PERMISO Y LA LICENCIA REQUERIDOS. TODOS LOS OSSFS HAN ESTADO INSTALADOS EN FECHA LA EPOCA DEL USO PARA EL FINAL PLAT LA APROBACIÓN EN UN COSTE TOTAL DE $1.500.000. El DEPARTAMENTO DE LA SALUD DEL CONDADO DEL HIDALGO HA EXAMINADO Y HA APROBADO LA INSTALACIÓN DEL OSSF ENCENDIDO 12 DE OCTUBRE DE 2011.

**CERTIFICACIÓN DEL INGENIERO:**

POR MI FIRMA ABAJO, CERTIFICO QUE EL AGUA Y LAS AGUAS RESIDUALES MANTIENEN LAS INSTALACIONES DESCRITAS ARRIBA ESTÁN DE ACUERDO CON REGLAS MODELO ADOPTADAS BAJO SECCIÓN 16.343, CÓDIGO DE AGUA. CERTIFICO QUE LOS COSTES ESTIMADOS PARA INSTALAR EL AGUA DE UNCONSTRUCTED Y LAS INSTALACIONES EN SITIO DE LAS AGUAS RESIDUALES, DISCUTIDAS ARRIBA, SON COMO SIGUE:

INSTALACIONES DE AGUA – ESTAS INSTALACIONES CONSTRUIDAS COMPLETAMENTE, CON LA INSTALACIÓN DE LOS CONTADORES DEL AGUA, COSTARÁN UN IMPORTE TOTAL DE $750.00.

INSTALACIONES DE LAS AGUAS RESIDUALES – EL SISTEMA SÉPTICO SE ESTIMA PARA COSTAR $1.500.00 POR LA PORCIÓN (TODO INCLUSIVA), PARA UN TOTAL DE $1.500.00 PARA LA SUBDIVISIÓN ENTERA.

ENGINEER'S SIGNATURE DATE

# SUBDIVIDER CERTIFICATION

1. – BY COMPLETING THE IMPROVEMENTS DESCRIBED ON THE PLAT, THE SUBDIVIDER WILL COMPLY WITH MINIMUM STATE STANDARDS AND THAT (a) WATER QUALITY AND CONNECTIONS INCLUDING WATER METERS TO THE LOTS MEET SUCH STANDARDS AND (b) SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS MEET OR WILL MEET SUCH STANDARDS AND WILL BE BY THE STATE AND COUNTY REGULATIONS.

# SUBDIVIDER STATEMENT:

1.– WE, RAFAEL A. ROJAS & ESTELA G. ROJAS, SUBDIVIDERS OF ROJAS SUBDIVISION, HEREBY CERTIFY SEWER PERMITS HAVE BEEN. PAID AND ARE ON FILE FOR THE H.C.H.D.; THAT ANY ADEQUATE DRINKING WATER SOURCE IS IMMEDIATELY AVAILABLE TO EACH LOT OF THE TYPE, QUANTITY & QUALITY TO ENABLE EACH PERSON PURCHASING A LOT TO HAVE ADEQUATE WATER TO COMPLY WITH THE REGULATIONS AND THE LAWS OF THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS. AND THE LAWS OF THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS.

RAFAEL A. ROJAS
1503 AURORA ROAD
EDINBURG, TX. 78541

ESTELA G. ROJAS
1503 AURORA ROAD
EDINBURG, TX. 78541

THE STATE OF TEXAS )(
COUNTY OF HIDALGO )(
BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS DAY APPEARED RAFAEL A. ROJAS & ESTELA G. ROJAS, KNOWN TO ME TO BE THE PERSONS WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____,20__.

My Commission Expires:

Notary Public in and for Hidalgo County, Texas

# *SUBDIVISION PLAT OF*
# *ROJAS SUBDIVISION*

A 0.61 of an acre tract of land being a portion of Lot 5, R. B. Curry Survey Subdivision No. 3, as recorded in Volume 2, Page 23, Map Records, Hidalgo County, Texas, also being a portion of that certain tract described in Warranty Deed with Vendor's Lien recorded in Document # 323359, Official Records, Hidalgo County, Texas

PREPARED BY: R.E. GARCIA & ASSOCIATES SCALE: 1" = 40'

116 NORTH 12TH AVENUE EDINBURG, TEXAS 78539 PHONE (956) 381-1061 FAX: 381-1280

ENGINEER:
R.E. Garcia
Associates
FIRM #: F-5001

# DRAINAGE STATEMENT FOR ROJAS SUBDIVISION

Rojas Subdivision consists of a 1.38 acre tract of land being a portion of Lot 12, Whittenburg and Looney Subdivision as recorded in Volume 8, Page 42, Map Records, Hidalgo County, Texas. The site is located on the north side of Aurora Road approximately 330 feet east of Seminary Road. The property is being subdivided into 2 residential lots. The tract is basically flat with a slight slope to south towards Aurora Road. The proposed subdivision is located in a Zone "X" Shaded Flood Hazard area as designated by FEMA FIRM Community Panel Number 480334 0325 D dated May 30, 2001. Zone "X" Shaded is defined as "areas of the 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

The soil for this property is a dark grayish brown sandy clay loam which is highly pervious. This soil is found to be in the Hydrologic Group "B" as determined by use of the Soil Survey of Hidalgo County. (See attachment). Currently the property is a single family residential residence.

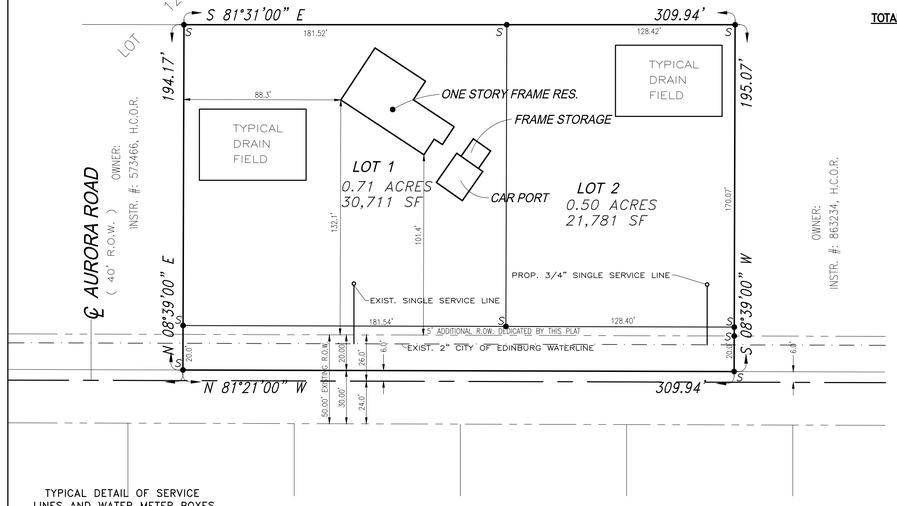
The proposed subdivision will create two large single family residential lots which will not significantly impact the drainage discharge from the site. The minor amount of detention required will be achieved by utilizing properly grade landscaped areas which will overflow east into road ditches on Aurora Road. Aurora Road then flows east and discharges into a Hidalgo County Main Drain east of the site

In accordance with the Hidalgo County Drainage District # 1 Policy, a minimum of 1,903 cubic feet of storm runoff will be detained with a maximum discharge rate of 1.369 cfs. The peak rate of runoff will not be increased during the 10 year rainfall event.

**CERTIFICATION:**
**By my signature below, I certify that this subdvision lies in a Flood Zone "X" Shaded: areas between limits of the 100 year flood and 500 year flood: or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood**

REGISTERED PROFESSIONAL ENGINEER # 64790

OWNER:
VOLUME 1534, PAGE 486, H.C.D.R.

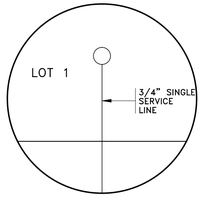



NORTH

SCALE: 1"=40'
BEARINGS BASED ON RECORD BEARINGS OF: AVELAR ESTATES SUBDIVISION, AS RECORDED IN VOLUME 52, PAGE 47, H.C.M.R.

## LEGEND
P – POWER POLES
Ⓢ – SOIL BORE LOCATION

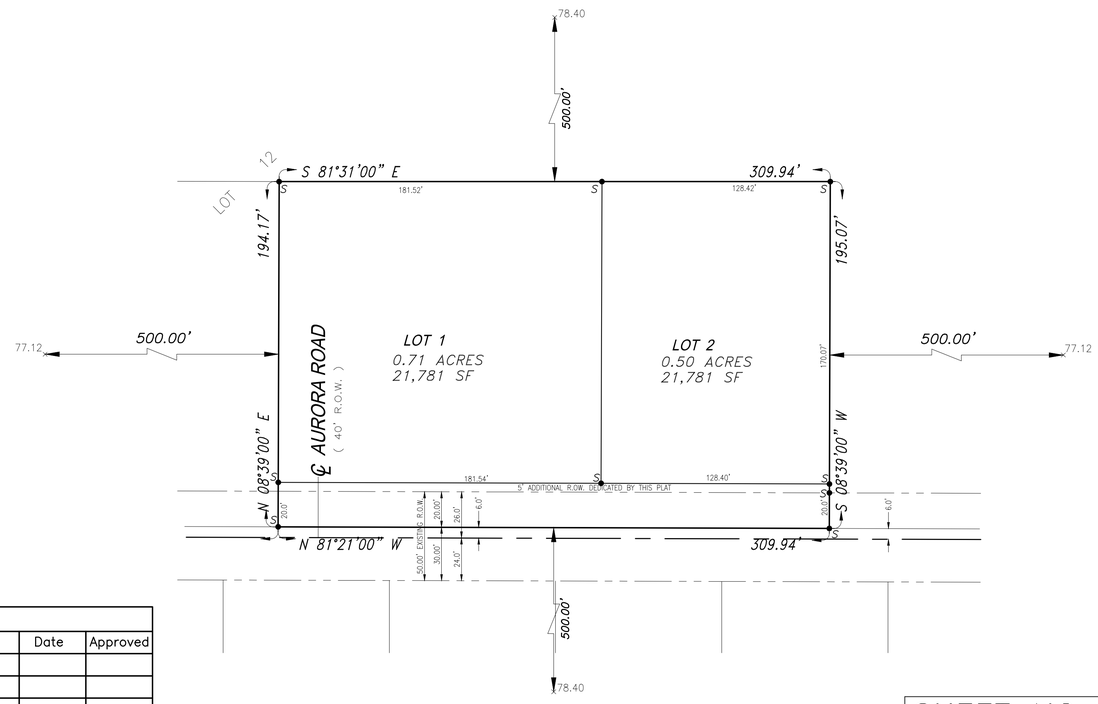
TYPICAL DETAIL OF SERVICE LINES AND WATER METER BOXES




LEGEND:
○ ----- WATER METER BOX

## COST BREAKDOWN

| | |
|---|---|
| DRAINAGE – | $ 0.00 |
| WATER – | $ 750.00 |
| SEPTIC TANKS – | $ 1,500.00 |
| TOTAL CONSTRUCTION | $ 2,250.00 |




| REVISION NOTES | | | | |
|---|---|---|---|---|
| No. | Sheet | REVISION | Date | Approved |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

SHEET NO. 2
OF 2 SHEETS

# HIDALGO COUNTY
# PLANNING DEPARTMENT


**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
**DATE: 03-04-2014**

PROPOSED **HUISACHE ACRES NO. 10** SUBDIVISION, PRECINCT No. **4** .

ENGINEER FIRM : **MELDEN & HUNT, INC.** DEVELOPER: **RICK D. HARBISON**

☐ PRELIMINARY APPROVAL ☒ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: **52** ☒*SINGLE FAMILY ___ ☐*MULTI-FAMILY ___ ☐COMMERCIAL ___ ☐INSTITUTIONAL

LOCATION DESCRIPTION: **North side of Roosevelt Rd. (Mile 12 ½) approximately 1220 feet West of the intersection with Valverde Rd.**

SUBDIVISION LIES WITHIN THE: ☒ *The rural area of the County.*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **12-27-12** PROPERTY LIES WITHIN FLOOD ZONE: **"C"** AS PER FEMA.

DRAINAGE DESIGN: **Storm drainage pipe system. Detention will be accomplished by widening the existing drain ditch along the West property line.**

ROAD R.O.W. DEDICATION: **40 feet on Roosevelt Rd (Mile 12 ½)**

H.C.R.O.W. FINAL APPROVAL DATE: **03-12-13** By, **Jesse Ozuna** R.O.W. AGENT

H.C.H.D. FINAL APPROVAL DATE: **10-22-13** By, **Elizardo Ramos, Environmental Health Division Manager**

☒ OSSF & SOIL ANALYSIS WERE CONDUCTED BY: **Jose Angel Gonzalez**

SEWER SYSTEM: ☒OSSF HAVE BEEN INSTALLED AND INSPECTED BY HCHD ON: **October 22, 2013**

WATER SERVICE PROVIDER: **North Alamo Water Supply Corp** LINE SIZE: **8"** LOCATION: **Roosevelt Rd. (Mile 12 1/2)**

H.C.O.E.C. FINAL APPROVAL DATE: **11-13-2013** : By **Martin Ramirez, Environmental Compliance Coordinator**

☒ The applicant has submitted the required Notice of Termination (NOT) as per Part II, Section F of the TPDES General Permit for Construction Activities (TXR150000) indicating that final stabilization had been achieved at the construction site.

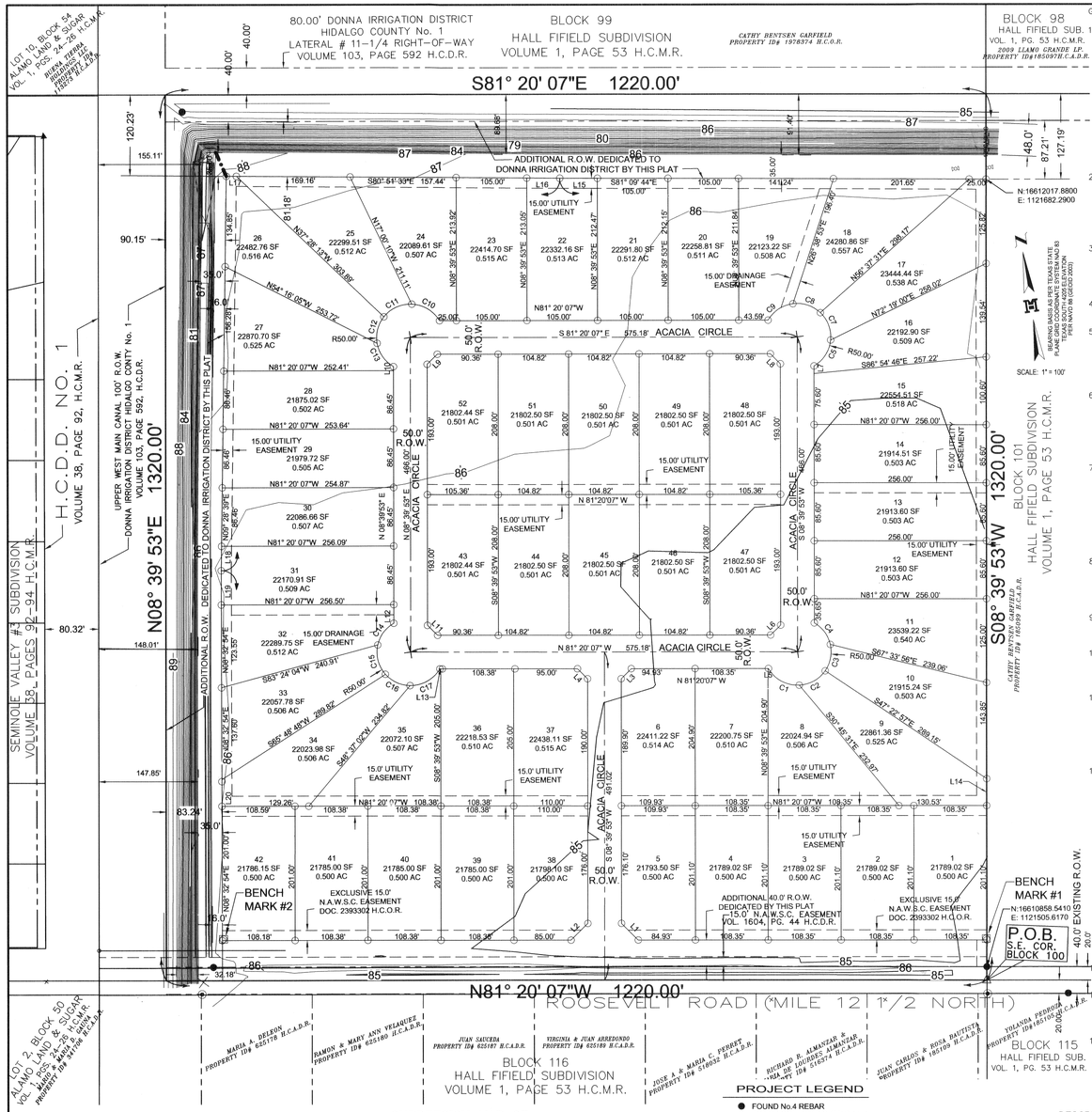
PRELIMINARY APPROVAL FROM THE HIDALGO COUNTY COMMISSIONERS COURT ON: **APRIL 16, 2013**

STAFF RECOMMENDS:

☒ **Final Approval** *subject to recommendations other departments*

☐ **Final Approval** *with financial guarantee.*

* *This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules, Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*


80.00' DONNA IRRIGATION DISTRICT
HIDALGO COUNTY No. 1
LATERAL # 11-1/4 RIGHT-OF-WAY
VOLUME 103, PAGE 592 H.C.D.R.
BLOCK 99
HALL FIFIELD SUBDIVISION
VOLUME 1, PAGE 53 H.C.M.R.
BLOCK 98
HALL FIELD SUB.
VOL. 1, PG. 53 H.C.M.R.
S81° 20' 07"E 1220.00'
ADDITIONAL R.O.W. DEDICATED TO DONNA IRRIGATION DISTRICT BY THIS PLAT
15.00' UTILITY EASEMENT
15.00' DRAINAGE EASEMENT
ACACIA CIRCLE
50.0' R.O.W.
R50.00'
S81° 20' 07"E 575.18'
N81° 20' 07"W 575.18'
N81° 20' 07"W 105.00'
N81° 20' 07"W 1220.00'
N08° 39' 53"E 1320.00'
S08° 39' 53"W 1320.00'
H.C.D.D. NO. 1
VOLUME 38, PAGE 92, H.C.M.R.
SEMINOLE VALLEY #3 SUBDIVISION
VOLUME 39, PAGES 92-94 H.C.M.R.
LOT 10, BLOCK 54, ALAMO LAND & SUGAR
VOL. 1, PGS. 24-28 H.C.M.R.
BUENA VISTA PROPERTY ID# 178913 H.C.A.D.
LOT 2, BLOCK 50, ALAMO LAND & SUGAR
VOL. 1, PGS. 24-28 H.C.M.R.
MARIA A. DELEON PROPERTY ID# 635715 H.C.A.D.R.
RAMON & MARY ANN VELAQUEZ PROPERTY ID# 635180 H.C.A.D.R.
JUAN SAUCEDA PROPERTY ID# 635187 H.C.A.D.R.
VIRGINIA & JUAN ARREDONDO PROPERTY ID# 635189 H.C.A.D.R.
JOSE A. & MARIA C. PEREZ PROPERTY ID# 519032 H.C.A.D.R.
RICHARD R. ALMANZAR & MA. DE LOURDES ALMANZAR PROPERTY ID# 515574 H.C.A.D.R.
JUAN CARLOS & ROSA BAUTISTA PROPERTY ID# 185109 H.C.A.D.R.
YOLANDA PEDRAZA PROPERTY ID# 185108 H.C.A.D.R.
CATHY BENTSEN GARFIELD PROPERTY ID# 1978374 H.C.A.D.R.
2009 LLANO GRANDE LP. PROPERTY ID# 185097 H.C.A.D.R.
BLOCK 116
HALL FIFIELD SUBDIVISION
VOLUME 1, PAGE 53 H.C.M.R.
BLOCK 101
HALL FIFIELD SUBDIVISION
VOLUME 1, PAGE 53 H.C.M.R.
BLOCK 115
HALL FIFIELD SUB.
VOL. 1, PG. 53 H.C.M.R.
ROOSEVELT ROAD (MILE 12 1/2 NORTH)
BENCH MARK #1
N:16610858.5410
E: 1121505.6170
BENCH MARK #2
EXCLUSIVE 15.0' N.A.W.S.C. EASEMENT DOC. 2393302 H.C.O.R.
ADDITIONAL 40.0' R.O.W. DEDICATED BY THIS PLAT
15.0' N.A.W.S.C. EASEMENT VOL. 1604, PG. 44 H.C.D.R.
P.O.B. S.E. COR. BLOCK 100
N:16612017.8800
E: 1121682.2900
40.0' EXISTING R.O.W.
BEARING BASIS AS PER TEXAS STATE PLANE GRID COORDINATE SYSTEM NAD 83 SOUTH ZONE (4205) PER NAVD 88 (GEOID 2003)
SCALE: 1" = 100'
ACACIA CIRCLE
491.02'
S08° 39' 53"W
N08° 39' 53"E
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
21789.02 SF 0.500 AC
22024.94 SF 0.506 AC
22861.36 SF 0.525 AC
23439.22 SF 0.540 AC
21915.24 SF 0.503 AC
21913.60 SF 0.503 AC
21914.51 SF 0.503 AC
22554.51 SF 0.518 AC
23444.44 SF 0.538 AC
24280.86 SF 0.557 AC
22123.22 SF 0.508 AC
22258.81 SF 0.511 AC
22291.90 SF 0.512 AC
22332.16 SF 0.513 AC
22414.70 SF 0.515 AC
22089.61 SF 0.507 AC
22299.51 SF 0.512 AC
22482.76 SF 0.516 AC
22870.70 SF 0.525 AC
21979.72 SF 0.505 AC
21875.02 SF 0.502 AC
22086.66 SF 0.507 AC
22170.91 SF 0.509 AC
22289.75 SF EASEMENT 0.512 AC
22057.78 SF 0.506 AC
21786.15 SF 0.500 AC
21785.00 SF 0.500 AC
21785.00 SF 0.500 AC
21785.00 SF 0.500 AC
21798.10 SF 0.500 AC
21793.50 SF 0.500 AC
21789.02 SF 0.500 AC
21789.02 SF 0.500 AC
21789.02 SF 0.500 AC
22411.22 SF 0.514 AC
22220.75 SF 0.510 AC
22218.53 SF 0.510 AC
22438.11 SF 0.515 AC
22023.98 SF 0.506 AC
22072.10 SF 0.507 AC
21802.50 SF 0.501 AC
21802.44 SF 0.501 AC
21802.50 SF 0.501 AC
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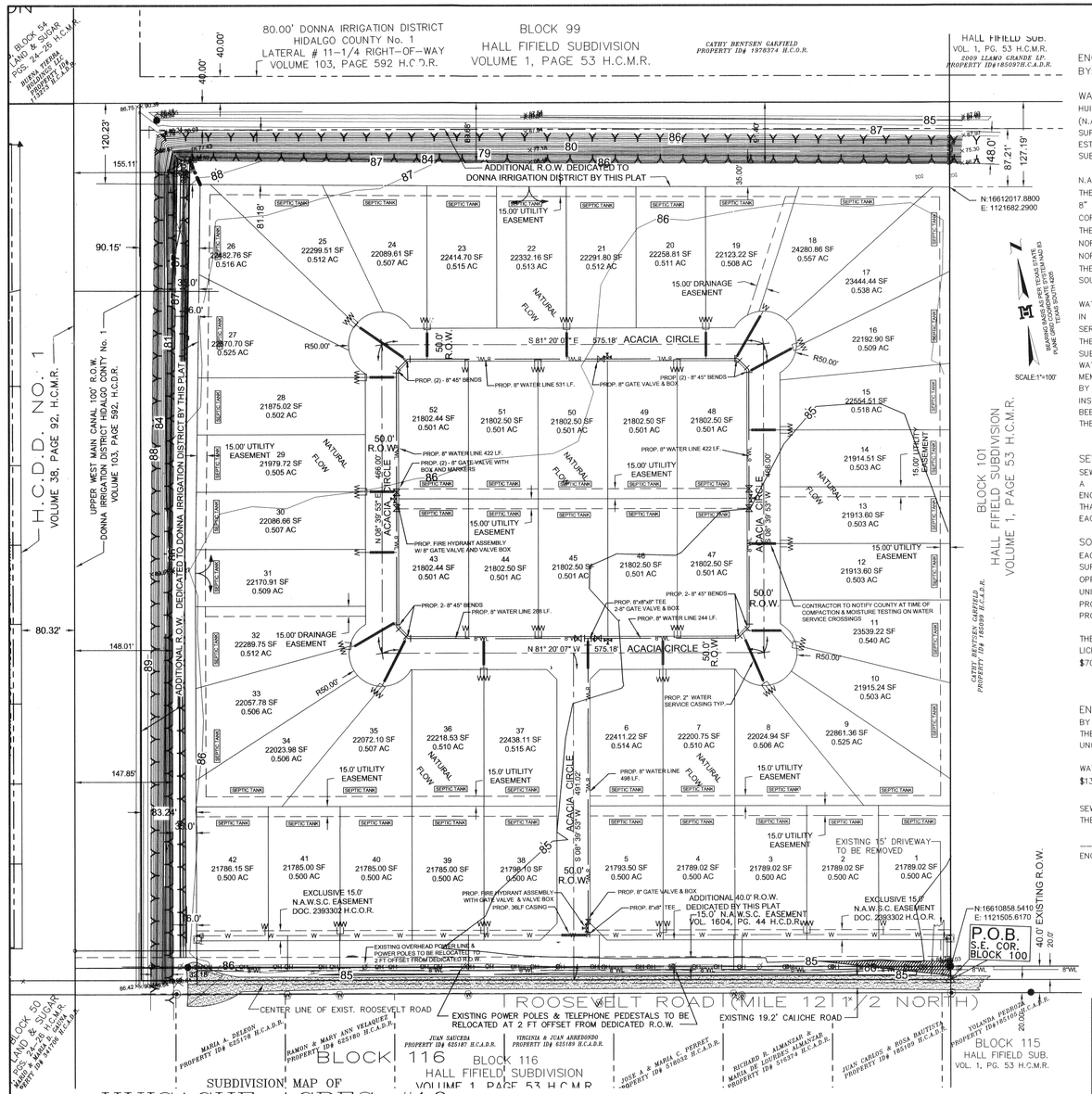
21802.44



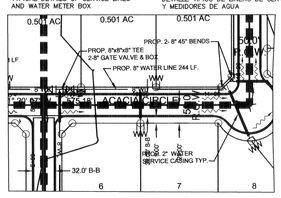

# SUBDIVISION MAP OF
# HUISACHE ACRES #10

BEING A RESUBDIVISION OF 36.970 ACRES
OUT OF BLOCK 100
HALL-FIFIELD SUBDIVISION
VOLUME 1, PAGE 53, H.C.M.R.
HIDALGO COUNTY, TEXAS.

LEGEND:
- FOUND REBAR
- FOUND COTTON PICKER SPINDLE
- FOUND PIPE
- SET REBAR
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE WATER SERVICE
- PROPOSED SEPTIC TANK

LEYENDA
- VARILLA ENCONTRADO
- EJE ENCONTRADA
- TUBO DE VARILLA ENCONTRADO
- VARILLA ASENTADA
- SERVICIO DOBLE DE AGUA PROPUESTO
- SERVICIO INDIVIDUAL DE AGUA PROPUESTO
- TANQUE SEPTICO

TYPICAL DETAILS OF SERVICE LINES AND WATER METER BOX
DETALLE TIPICO DE LINEAS DE SERVICIO Y MEDIDORES DE AGUA

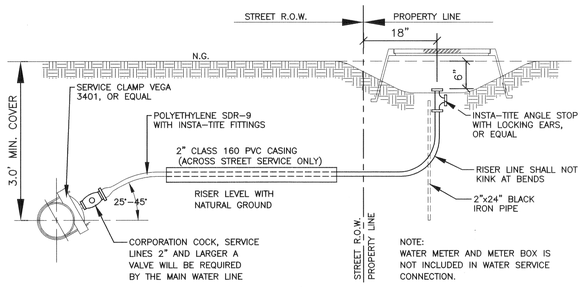



COST ESTIMATE:

| | |
|---|---|
| PAVING IMPROVEMENTS: | $ 286,138.15 |
| DRAINAGE IMPROVEMENTS: | $ 21,804.00 |
| WATER DISTRIBUTION: | $ 82,018.75 |
| SEPTIC TANK SEWER IMPROVEMETNS / OSSF: | $ 63,000.00 |

ESTIMACION DE COSTOS:

| | |
|---|---|
| PAVIMENTACION DE CALLES: | $ 286,138.15 |
| DREAJE PLUVIAL: | $ 21,804.00 |
| SERVICIO DE AGUA POTABLE: | $ 82,018.75 |
| SERVICIO DE DRENAJE SANITARIO | $ 63,000.00 |




## TYPICAL WATER SERVICE CONNECTION ELEVATION
N.T.S.

# MAP OF WATER DISTRIBUTION SYSTEM
# MAPA DE SISTEMA DE DISTRIBUCION DE AGUA

ENGINEERING REPORT FOR HUISACHE ACRES #10
BY: FRED L. KURTH

## WATER SUPPLY: DESCRIPTION, COST, AND OPERABILITY DATE:

HUISACHE ACRES #10 SUBDIVISION WILL BE PROVIDED WITH POTABLE WATER BY NORTH ALAMO WATER SUPPLY CORPORATION (N.A.W.S.C.). THE SUBDIVIDER AND N.A.W.S.C. HAVE ENTERED INTO A CONTRACT IN WHICH N.A.W.S.C. HAS PROMISED TO PROVIDE SUFFICIENT WATER TO THE SUBDIVISION FOR AT LEAST 30 YEARS AND N.A.W.S.C HAS PROVIDED DOCUMENTATION TO SUFFICIENTLY ESTABLISH THE LONG TERM QUANTITY AND QUALITY OF THE AVAILABLE WATER SUPPLIES TO SERVE THE FULL DEVELOPMENT OF THIS SUBDIVISION.

N.A.W.S.C. HAS AN EXISTING 8" DIAMETER WATER LINE RUNNING ALONG THE NORTH SIDE OF THE RIGHT-OF-WAY OF ROOSEVELT ROAD. THE WATER SYSTEM FOR HUISACHE ACRES # 10 CONSISTS OF A 8" DIAMETER WATER LINE THAT TAPS INTO THE EXISTING 8" LINE. THIS 8" LINE THEN RUNS NORTH ALONG THE EAST SIDE OF ACACIA CIRCLE RIGHT-OF-WAY ENDING WITH A 8" TEE ON THE SOUTHEAST CORNER OF LOT 45. ANOTHER 8' LINE RUNS WEST ALONG THE NORTH SIDE OF ACACIA CIRCLE RIGHT-OF-WAY TO A 8" 90° ELBOW AT THE SOUTHWEST CORNER OF LOT 43, THEN TURNS NORTH ALONG THE EAST SIDE OF ACACIA CIRCLE TO AN 8" 90° ELBOW AT THE NORTHWEST CORNER OF 52, THEN TURNS EAST ALONG THE SOUTH RIGHT-OF-WAY OF ACACIA CIRCLE TO AN 8" 90° ELBOW AT THE NORTHEAST CORNER OF LOT 48, THEN TURNS SOUTH ALONG THE WEST RIGHT-OF-WAY OF ACACIA CIRCLE TO AN 8" 90° ELBOW AT THE SOUTHEAST CORNER OF LOT 47, THEN TURNS WEST ALONG THE NORTH RIGHT-OF-WAY OF ACACIA CIRCLE TO AN 8" TEE AT THE SOUTHEAST CORNER OF LOT 45.

WATER DISTRIBUTION FOR THE HUISACHE ACRES #10 CONSISTS OF TWENTY-THREE (23) -1" DIAMETER DUAL SERVICE LINES THAT RUN IN PAIRS TO LOTS BEFORE SPLITTING INTO ¾" DIAMETER SERVICE LINES AND SIX (6)-¾" DIAMETER SINGLE SERVICE LINES. SAID SERVICES TERMINATE AT THE WATER METER BOXES FOR EACH LOT. THE 8" LINE, THE DUAL SERVICES AND ¾" SINGLE SERVICES, AND THE METER BOXES HAVE ALREADY BEEN INSTALLED, AT A TOTAL COST OF $131,953.80, OR $2,538.57 PER LOT. IN ADDITION, THE SUBDIVIDER HAS PAID N.A.W.S.C. THE SUM OF $131,953.80, WHICH COVERS THE $2,538.57 COST PER LOT AS STATED IN THE 30 YEAR WATER SERVICE AGREEMENT WHICH SUM REPRESENTS THE TOTAL COST OF WATER METER, RIGHTS ACQUISITION FEES, AND ALL MEMBERSHIP OR OTHER FEES ASSOCIATED WITH CONNECTING THE INDIVIDUAL LOTS IN THE SUBDIVISION TO N.A.W.S.C. UPON REQUEST BY THE LOT OWNER, N.A.W.S.C. WILL PROMPTLY INSTALL AT NO CHARGE THE WATER METER FOR THAT LOT. THE SUBDIVIDER HAS INSTALLED 5 FIRE HYDRANTS AT A UNIT COST OF $ 3,325.00 FOR A TOTAL COST OF $ 16,625.00. THE ENTIRE WATER FACILITIES HAVE BEEN APPROVED AND ACCEPTED BY N.A.W.S.C. AND SAID DISTRIBUTION SYSTEM IS OPERABLE AS OF THE DATE OF THE RECORDING OF THE PLAT.

## SEWAGE FACILITIES DESCRIPTION; COST AND OPERABILITY DATES

SEWAGE FROM HUISACHE ACRES #10 SUBDIVISION WILL BE TREATED BY INDIVIDUAL ON-SITE SEWAGE FACILITIES ("OSSF") CONSISTING OF A STANDARD DESIGN DUAL COMPARTMENT SEPTIC TANK AND A DRAIN FIELD ON EACH LOT. JOSE A. GONZALEZ PROFESSIONAL ENGINEER NO. 12258, HAS EVALUATED THE SUITABILITY OF THE SUBDIVISION SITE FOR OSSF AND SUBMITTED A REPORT CONCLUDING THAT THE SITE IS SUITABLE FOR OSSF. THE REPORT WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT. EACH LOT HAS ADEQUATE AREA FOR A REPLACEMENT DRAIN FIELD.

## SOIL EVALUATION REPORT:

EACH LOT IN THE PROPOSED SUBDIVISION IS AT LEAST 1/2 ACRE IN SIZE. THE NATURAL RESOURCE CONSERVATION SERVICE SOIL SURVEY BOOK INDICATED A SANDY LOAM SOIL FOR THE AREA. AT LEAST TWO SOIL EXCAVATIONS WERE PERFORMED ON THE SITE, AT OPPOSITE ENDS OF THE PROPOSED DISPOSAL AREA. (ADDITIONAL BORINGS WERE UNNECESSARY BECAUSE THE SOILS ARE VERY UNIFORM WITHIN THIS LIMIT AREA). THE SOIL IS A UNIFORM SANDY LOAM EXTENDING UP TO 36" BELOW THE BOTTOM OF ANY PROPOSED EXCAVATIONS. THERE IS NO INDICATION OF GROUND WATER OR A RESTRICTIVE LAYER WITHIN 24" OF BOTTOM OF THE PROPOSED EXCAVATIONS. THE SUBDIVISION DRAINS WELL.

THE COST TO INSTALL A SEPTIC SYSTEM ON AN INDIVIDUAL LOT IS 1,500.00, INCLUDING THE COST FOR THE REQUIRED PERMIT AND LICENSE. ALL OSSFS HAVE BEEN INSTALLED AS OF THE TIME OF APPLICATION FOR FINAL PLAT APPROVAL AT A TOTAL COST OF $70,200.00 . THE HIDALGO COUNTY HEALTH DEPARTMENT HAS INSPECTED AND APPROVED THE INSTALLATION OF ALL OSSF ON – –2013. LOT 1 THROUGH 5 & 38 THROUGH 42 SHALL HAVE OFFS INSTALLED BY LOT OWNERS AT BUILDING PERMIT STAGE.

## ENGINEER CERTIFICATION:

BY MY SIGNATURE BELOW, I CERTIFY THAT THE WATER AND SEWAGE SERVICE FACILITIES DESCRIBED ABOVE ARE IN COMPLIANCE WITH THE MODEL RULES ADOPTED UNDER SECTION 16.343, WATER CODE. I CERTIFY THAT THE COSTS TO INSTALL THE WATER AND THE UNCONSTRUCTED ON-SITE SEWAGE FACILITIES, DISCUSSED ABOVE, ARE AS FOLLOWS:

WATER FACILITIES – THESE FACILITIES FULLY CONSTRUCTED, WITH THE INSTALLATION OF WATER METERS, WILL COST A GRAND TOTAL OF $131,953.80 WHICH EQUALS TO $2,537.57 PER LOT.

SEWAGE FACILITIES – SEPTIC SYSTEM IS ESTIMATED TO COST $1,500.00 PER LOT (ALL INCLUSIVE), FOR A TOTAL OF $ 70,200,000 FOR THE ENTIRE SUBDIVISION.

_____ _____
ENGINEER'S SIGNATURE DATE

REPORTE DE INGENIERIA DE HUISACHE ACRES #10
POR: FRED L. KURTH

## PROVISIÓN DE AGUA: DESCRIPCIÓN, GASTOS Y FECHAS DE INICIO

LA SUBDIVISIÓN HUISACHE ACRES #10 RECIBIRÁ SU PROVISIÓN DE AGUA DE NORTH ALAMO WATER SUPPLY CORPORATION (LA COMPAÑÍA DE AGUA (N.A.W.S.C.). EL DUEÑO DE LA SUBDIVISIÓN Y N.A.W.S.C. HAN FIRMADO UN CONTRATO POR EL CUAL LA SUBDIVISIÓN RECIBIRÁ SU PROVISIÓN DE AGUA POR LOS PRÓXIMOS 30 AÑOS. N.A.W.S.C. HA PRESENTADO DOCUMENTACIÓN PARA DEMOSTRAR A LARGO PLAZO LA CANTIDAD Y CALIDAD DE AGUA ACCESIBLE PARA SERVIR EL FUTURO DESARROLLO DE LA SUBDIVISIÓN.

EL SISTEMA DE PROVISIÓN DE AGUA PARA LA SUBDIVISIÓN HUISACHE ACRES #10 CONSISTE DE UN CONDUCTO DE AGUA DE 8 PULGADAS DE DIÁMETRO QUE PASA POR EL LADO NORTE DEL DERECHO DE VIADE DE (RIGHT OF WAY) DE LA CARRETERA ROOSEVELT ROAD. EL SISTEMA DE PROVISIÓN DE AGUA DE LA SUBDIVISIÓN HUISACHE ACRES #10 CONSISTE DE UN CONDUCTO DE AGUA DE 8 PULGADAS DE DIÁMETRO QUE SE CONECTA CON EL CONDUCTO DE AGUA EXISTENTE DE 8 PULGADAS. ESTA LÍNEA DE 8 PULGADAS CUAL SIGUE HACIA EL NORTE POR EL LADO ESTE DEL DERECHO DE VIADE DE LA CALLE ACACIA CIRCLE, TERMINARA CON UNA TEE DE 8" PULGADAS CON DOS VÁLVULA DE PRESIÓN DE 8 PULGADAS DE DIÁMETRO LOCALIZADA AL SURESTE DE LOTE 45. OTRO CONDUCTO DE AGUA DE ↳ PULGADAS DE DIÁMETRO CONTINÚA CORRIENDO AL OESTE POR EL LADO NORTE DEL DERECHO DE VIADE DE LA CALLE ACACIA CIRCLE A UN CODO DE 90° DE 8" EN EL LADO SUROESTE DE LOTE 43, LUEGO VOLTIANDO AL NORTE EL LADO ESTE DEL DERECHO DE VIADE DE LA CALLE ACACIA CIRCLE A UN CODO DE 90° DE 8" EN EL LADO NORTEOESTE DE LOTE 52, LUEGO VOLTIANDO AL ESTE EN EL LADO SUR DEL DERECHO DE VIADE DE LA CALLE ACACIA CIRCLE A UN CODO DE 90° DE 8" EN EL LADO NORTEESTE DE LOTE 48, LUEGO VOLTIANDO AL SUR EN EL LADO OESTE DEL DERECHO DE VIADE DE LA CALLE ACACIA CIRCLE A UN CODO DE 90° DE 8" EN EL LADO SURESTE DE LOTE 47, LUEGO VOLTIANDO AL OESTE EN EL LADO NORTE DEL DERECHO DE VIADE DE LA CALLE ACACIA CIRCLE A UN TEE DE 8" EN EL LADO SUROESTE DE LOTE 45.

DEL CONDUCTO DE AGUA DE 8 PULGADAS SE PRODUCEN VENTETRES DOBLE-CONDUCTOS DE AGUA DE 1 PULGADA DE DIÁMETRO PARA CADA DOS LOTES. ESTOS CONDUCTOS SE SEPARAN PARA PRODUCIR DOS CONDUCTOS DE AGUA DE ¾ DE PULGADA DE DIÁMETRO PARA CADA LOTE Y SEIS CONDUCTOS INDIVIDUALES DE AGUA DE ¾ DE PULGADA DE DIÁMETRO PARA CADA LOTE YA SE HAN INSTALADO LOS CONDUCTOS DE AGUA DE 8 PULGADAS DE DIÁMETRO. LOS DOBLE-CONDUCTOS DE AGUA DE 1 PULGADA DE DIÁMETRO, EL CONDUCTO DE ¾ DE PULGADA DE DIÁMETRO, Y LOS MEDIDORES MECÁNICOS DE AGUA A UN COSTO TOTAL DE $131,953.80 O $ 2,537.57 POR LOTE. EL DUEÑO DE LA SUBDIVISIÓN TAMBIÉN LE HA PAGADO A LA COMPAÑÍA N.A.W.S.C. $131953.80, QUE CUBRE EL COSTO DEL MEDIDOR MECÁNICO DE AGUA PARA CADA LOTE. $2,601.37, ESTE PRECIO INCLUYE EL COSTO DE LA INSTALACIÓN DE CADA MEDIDOR Y LOS GASTOS DE CONEXIÓN. CUANDO EL DUEÑO DE CADA LOTE SOLICITE UN MEDIDOR DE AGUA, LA COMPAÑÍA N.A.W.S.C. LO INSTALARA SIN ALGÚN GASTO AL DUEÑO. EL DUEÑO DE LA SUBDIVISIÓN TAMBIÉN HA INSTALADO 5 BOCAS DE RIEGO (FIRE HYDRANT) A UN COSTO DE $ 3,325.00 POR CADA UNO CUAL GASTA UNA CANTIDAD TOTAL $ 16,625.00. EL SISTEMA DE AGUA ESTARÁ EN FUNCIONAMIENTO COMPLETO ANTES O EN LA FECHA, EN LA CUAL LA SUBDIVISIÓN SEA REGISTRADA EN EL CONDADO DE HIDALGO.

## DRENAJE: DESCRIPCIÓN, GASTOS Y FECHA DE INICIO PARA FACILITAR EL DRENAJE PARA LA SUBDIVISIÓN

SE INSTALARA UNA FOSA SÉPTICA EN CADA SOLAR. ESTA FOSA SÉPTICA CONSISTE DE UN TANQUE SÉPTICO DE MODELO DUAL Y DE UN CAMPO DE DRENAJE PARA EL SOLAR. EL INGENIERO AUTOR DE ESTE DOCUMENTO HA EVALUADO EL ÁREA DONDE SE ENCUENTRA LA SUBDIVISIÓN Y HA PREPARADO UN REPORTE QUE CONCLUYE QUE ESTE TERRENO ES ADECUADO PARA ESAS FOSAS SÉPTICAS (OSSF). EL REPORTE FUE APROBADO POR EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO (HIDALGO COUNTY HEALTH DEPARTMENT) SEGÚN EL REPORTE.

CADA LOTE EN LA SUBDIVISIÓN MIDE MEDIO ACRE. SE HICIERON DOS ES EXCAVACIONES DE EVALUACIÓN EN LUGARES OPUESTOS EN LA SUBDIVISIÓN (EXCAVACIONES ADICIONALES NO FUERON NECESARIAS PORQUE EL TERRENO EN ESTA ÁREA ES SIGNIFICANTEMENTE UNIFORME). EL TERRENO ES UNIFORME (TERRENO ARCILLOSO Y SUELO FRANCO) Y SE EXTIENDE A 36 PULGADAS BAJO TODAS LAS EXCAVACIÓNES PROPUESTAS. NO EXISTE EVIDENCIA DE AGUA 24 PULGADAS MÁS ARRIBA DE LO MAS BAJO DE LAS EXCAVACIONES PROPUESTAS. EL AGUA EN ESTA ÁREA FLUYE BIEN.

EL COSTO TOTAL PARA LA INSTALACIÓN DE UN SISTEMA INDIVIDUAL DE FOSAS SÉPTICAS POR SOLAR SON $ 1,500.00 DÓLARES, INCLUYENDO EL COSTO DEL PERMISO REQUERIDO Y LICENCIA. EN ESTOS MOMENTOS TODAS LAS FOSA SÉPTICAS HAN SIDO INSTALADAS EN EL PROCESO DE LA APROBACIÓN FINAL. A UN COSTO TOTAL DE $ $ 70,200.00. EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO HA INSPECCIONADO TODOS LAS FOSAS SÉPTICAS Y AH APROBADO LA INSTALACIÓN DE LAS FOSAS SÉPTICAS DESDE (FECHA DE INSPECCIÓN). LOTES 1 AL 5 & 38 AL 42 SE LE INSTALARA LAS FOSAS SÉPTICAS EN EL TIEMPO DEL PERMISO DE CONSTRUCCION.

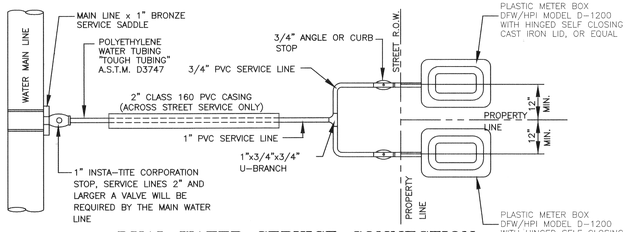
## CERTIFICACIÓN:

CON MI FIRMA, CERTIFICO QUE LOS SERVICIOS Y SISTEMAS DE AGUA Y DE DRENAJE, DESCRITOS EN ESTE DOCUMENTO CUMPLEN CON LAS MODEL SUBDIVISIÓN RULES (LAS REGLAS GOBERNANDO A LAS SUBDIVISIONES), ADOPTADAS EN LA SECCIÓN 16.343 DEL TEXAS WATER CODE (CÓDIGO DE AGUA DE TEXAS). CERTIFICO QUE LOS GASTOS PARA INSTALAR LOS SISTEMAS DE AGUA Y DE DRENAJE SON:

AGUA: EL SISTEMA/SERVICIO DE AGUA SERA INSTALADO Y COMPLETAMENTE CONSTRUIDO MENOS EL MEDIDOR MECÁNICO DE AGUA QUE COSTARA UN TOTAL DE $131,953.80 O $ 2,537.57 POR LOTE

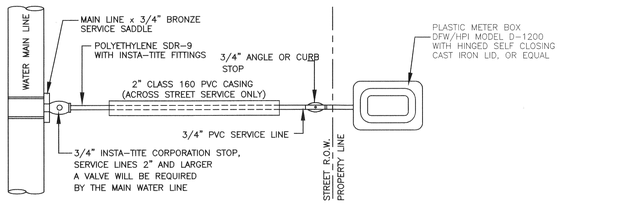
DRENAJE: SE ESTIMA QUE LA FOSA SÉPTICA COSTARA $1,500.00 A UN COSTO TOTAL DE $ 70,200.00 TODA LA SUBDIVISIÓN.

_____ _____
ENGINEER'S SIGNATURE DATE DATE




## DUAL WATER SERVICE CONNECTION
N.T.S.

NOTE: IF UTILITY EASEMENT IS DEDICATED AT THE FRONT OF THE LOT, THE LOCATION OF THE ANGLE STOP IS TO BE DETERMINED BY N.A.W.S.C. AND THE ENGINEER.




## SINGLE WATER SERVICE CONNECTION
N.T.S.

SUBDIVIDER CERTIFICATION

1. BY COMPLETING THE IMPROVEMENTS DESCRIBED ON THE PLAT, SUBDIVIDER WILL COMPLY WITH MINIMUM STATE STANDARDS AND THAT (a) WATER QUALITY AND CONNECTIONS INCLUDING WATER METERS AND OR WATER WELLS FOR EACH LOT(S) MEET SUCH STANDARDS AND (b) SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS MEET OR WILL MEET SUCH STANDARDS AND WILL BE CONSTRUCTED IN ACCORDANCE WITH STATE AND COUNTY REGULATIONS.

SUBDIVIDER STATEMENT:

1. I, RICK HARBISON, SUBDIVIDER OF HUISACHE ACRES #10, HEREBY CERTIFY SEWER PERMITS HAVE BEEN PAID AND COPIES OF RECEIPTS ARE ON FILE WITH THE HIDALGO COUNTY HEALTH DEPARTMENT THAT ANY ADEQUATE DRINKING WATER SOURCE IS IMMEDIATELY AVAILABLE TO EACH LOT OF THE TYPE, QUALITY & QUANTITY TO ENABLE EACH PERSON PURCHASING A LOT HAVE ADEQUATE WATER TO COMPLY WITH THE REGULATIONS AND THE LAWS OF THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS.

OWNER

STATE OF TEXAS
COUNTY OF HIDALGO:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED RICK HARBISON KNOWN TO ME THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO BE THAT HE EXECUTED THE SAME FOR PURPOSED AND CONSIDERATION THEREIN STATED,GEVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE

19 DAY OF July 20 13

NOTARY PUBLIC
MY COMMISSION EXPIRES 10|13|2014

JENNIFER ROBINSON NOTARY PUBLIC STATE OF TEXAS MY COMM. EXP 10/13/14


MELDEN & HUNT, INC.
TEXAS REGIST. F-1435

MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE
EDINBURG, TX. 78541
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FAX: (956) 381-1839
227 N. F.M. 3167
RIO GRANDE CITY, TX. 78582
OFF: (956) 487-8256
FAX: (956) 486-8591
E-MAIL: www.meldenandhunt.com
ESTABLISHED 1947

# MAP OF TOPOGRAPHY AND DRAINAGE:
# MAPA DE TOPOGRAFIA Y DESAGUE:

SUBDIVISION MAP OF

# HUISACHE ACRES #10

BLOCK 99

BEING A RESUBDIVISION OF 36.970 ACRES
OUT OF BLOCK 100
HALL–FIFIELD SUBDIVISION
VOLUME 1, PAGE 53, H.C.M.R.
HIDALGO COUNTY, TEXAS.

BEARINGS BASED ON TEXAS STATE PLANE COORDINATE SYSTEM NAD 83 TEXAS SOUTHERN ZONE

SCALE: 1" = 100'

O, BLOCK 54
SUGAR CO. SUBDIVISION

LOT 10, BLOCK 54
ALAMO LAND & SUGAR
VOL. 1, PGS. 2 & 76, H.C.M.R.

BURBANK TERRY
PROPERTY ID#
1175918 H.C.A.D.

. 1

DRIVE
NO. 3 SUBDIVISION
AGE 92 H.C.M.R.

H.C.D.D. NO. 1
VOLUME 38, PAGE 92, H.C.M.R.

SEMINOLE VALLEY No. 3
VOLUME 38, PAGES 92-94 H.C.M.R.

CHEROKEE DRIVE

DRIVE

LOT 2, BLOCK 50
ALAMO LAND & SUGAR
VOL. 1, PGS. 2 & 76, H.C.M.R.
MARIA E. DELEON
PROPERTY ID# 941798 H.C.A.D.

50
O. SUBDIVISION

80.00' DONNA IRRIGATION DISTRICT
HIDALGO COUNTY No. 1
LATERAL # 11–1/4 RIGHT–OF–WAY
VOLUME 103, PAGE 592 H.C.D.R.

BLOCK 99
HALL FIFIELD SUBDIVISION
VOLUME 1, PAGE 53 H.C.M.R.

CATHY BENTSEN GARFIELD
PROPERTY ID# 1978374 H.C.O.R.

BLOCK 98
HALL FIFIELD SUB.
VOL. 1, PG. 53 H.C.M.R.

ROSA LLANO GRANDE LP.
PROPERTY ID#1850938 H.C.A.D.R.

BLOCK 98

UPPER WEST MAIN CANAL 100' R.O.W.
DONNA IRRIGATION DISTRICT HIDALGO CONTY No. 1
VOLUME 103, PAGE 592, H.C.D.R.

PROP. DISCHARGE STRUCTURE # 2 FL.=79.25

PROP. DISCHARGE STRUCTURE # 1 FL.=79.50

ADDITIONAL R.O.W. DEDICATED TO DONNA IRRIGATION DISTRICT BY THIS PLAT

ADDITIONAL R.O.W. DEDICATED TO DONNA IRRIGATION DISTRICT BY THIS PLAT

ADDITIONAL R.O.W. DEDICATED TO DONNA IRRIGATION DISTRICT BY THIS PLAT

PROP. DISCHARGE STRUCTURE # 3 FL.=78.83

N:16612017.8800
E: 1121682.2900

S 81° 20' 07" E 575.18' ACACIA CIRCLE

N 81° 20' 07" W 575.18' ACACIA CIRCLE

N 08° 39' 53" E 466.00' ACACIA CIRCLE

S 08° 39' 53" W 466.00' ACACIA CIRCLE

50.0' R.O.W.

15.00' UTILITY EASEMENT

15.00' DRAINAGE EASEMENT
PROP. TYPE "A" INLET TOP=84.50 FL=79.20

PROP. 260 LF 30" RCP DRAIN LINE "B"

PROP. 72 LF 18" RCP DRAIN LINE "B"

PROP. TYPE "A" INLET TOP=84.60 FL=79.40

PROP. TYPE "A" INLET TOP=85.10 FL=79.65

PROP. 310 LF 30" RCP DRAIN LINE "A"

PROP. 35 LF 18" RCP DRAIN LINE "A"

PROP. TYPE "A" INLET TOP=85.10 FL=79.74

PROP. 6' VALLEY GUTTER

PROP. 130 LF 24" RCP DRAIN LINE "C"

PROP. 50 LF 18" CULVERT

PROP. CONC. FLUME

PROP. SAFETY END FL.=82.75

PROP. SAFETY END FL.= 82.85

PROP. 38 LF 12" RCP DRAIN LINE WITH SAFETY END

CENTER LINE OF EXIST. ROOSEVELT ROAD

CENTER LINE OF PROP. ROAD DITCH

EXISTING POWER POLES & TELEPHONE PEDESTALS TO BE RELOCATED AT 2 FT. OFFSET FROM DEDICATED R.O.W.

PROP. ROAD DITCH FL.= 83.10

PROP. ROAD DITCH FL.=83.10

PROP. REGRADE EXIST. ROAD DITCH FOR POSITIVE FLOW

EXISTING 19.2' CALICHE ROAD

PROP. ROAD DITCH FL.= 84.00

EXISTING 15' DRIVEWAY TO BE REMOVED

PROP. ROAD DITCH TO BE GRADED TO PROVIDE POSITIVE FLOW

ADDITIONAL 40.0' R.O.W. DEDICATED BY THIS PLAT
15.0' N.A.W.S.C. EASEMENT
VOL. 1604, PG. 44 H.C.D.R.

EXCLUSIVE 15.0' N.A.W.S.C. EASEMENT DOC. 2393302 H.C.O.R.

EXCLUSIVE 15.0' N.A.W.S.C. EASEMENT DOC. 2393302 H.C.O.R.

N:16610858.5410
E: 1121505.6170

P.O.B.
S.E. COR. BLOCK 100

40.0' EXISTING R.O.W.

20.0'

20.00' WIDE R.O.W. D.C.A.D.R.

YOLANDA PEDROZA
PROPERTY ID# 1857055

BLOCK 115
HALL FIFIELD SUB.
VOL. 1, PG. 53 H.C.M.R.

BLOCK 101
HALL FIFIELD SUBDIVISION
VOLUME 1, PAGE 53 H.C.M.R.

CATHY BENTSEN GARFIELD
PROPERTY ID# 1850899 H.C.O.R.

BLOCK
116
BLOCK 116
HALL FIFIELD SUBDIVISION
VOLUME 1, PAGE 53 H.C.M.R.

MARIA A. DELEON
PROPERTY ID# 625178 H.C.A.D.R.

RAMON & MARY ANN VELA
PROPERTY ID# 625180 H.C.A.D.R.

JUAN SAUCEDA
PROPERTY ID# 625187 H.C.A.D.R.

VIRGINIA & JUAN ARREDONDO
PROPERTY ID# 625189 H.C.A.D.R.

JOSE A. & MARIA C. PERREZ
PROPERTY ID# 578035 H.C.A.D.R.

RICHARD & ALMANZAR & MARIA DE LOURDES ALMANZAR
PROPERTY ID# 518374 H.C.A.D.R.

JUAN CARLOS & ROSA BAUTISTA
PROPERTY ID# 1851109 H.C.A.D.R.

+86.00 +85.00 +87.00 +88.00

## DITCH SECTION E

SCALE HOR: 1"=40'
VERT.: 1"=4'

ADDITIONAL DEDICATED R.O.W. 83.32'
EXIST. DRAIN DITCH WIDTH =45.0'
36.0'
EL=88.97
EL=88.23
EL=77.11
EXIST. SOUTH R.O.W. BOUNDARY
PROP. SOUTH R.O.W. BOUNDARY

## SECTION "A–A" – CONCRETE CURB & GUTTER

1 1/2" H.M.A.C.
1'–6"
6"
EXTENT 12" FROM B/C
8" CALICHE BASE
6" LIME TREATED SUBGRADE (if required)
12"
4" COMPACTED CALICHE

## SECTION "C–C" – CONCRETE VALLEY GUTTER

6'–0" (3'–0")
REBAR SCHEDULE FOR 6' VALLEY GUTTER:
#4 AT 18" O.C. ACROSS
#4 AT 14" O.C. LENGTH

GENERAL NOTES:

1. ALL CONCRETE WORK SHALL BE TREATED WITH MEMBRANE CURING COMPOUND TYPE 2 WHITE PIGMENTED IN ACCORDANCE w/ THD 1972 SPECIFICATIONS ITEM 531. CONSIDERED INCIDENTAL TO CONCRETE WORK.
2. 1/2" EXPANSION JOINTS REQUIRED AT 70' c.c. AND AT THE BEGINNING AND END OF ALL RADII. CONTRACTION JOINTS SHALL NOT EXCEED 10' c.c.

## TYPICAL STREET CROSS SECTION

N.T.S.

50' R.O.W. – MINOR STREET
RIGHT OF WAY LINE
10' PARKWAY
9' PARKWAY
32' BACK–TO–BACK
18"
MAX SLOPE: 1" PER FT. MIN. SLOPE: 1/4" PER FT.
s= 3/8"/1'–0"=32' STREET
1 1/2" TYPE "D" H.M.A.C. 95% COMPACTED DENSITY
4'–0"
12"
s= 6 1/2"/1'–0"
CONCRETE CURB & GUTTER
8" COMPACTED CRUSHED CALICHE TY D, GRADE 6 98% COMPACTED DENSITY
SUBGRADE – 95% COMPACTED DENSITY
SIDEWALK (IF REQUIRED)

## PIPE BEDDING DETAILS

N.T.S.

UNPAVED BACKFILL
PAVED BACKFILL
VARIES DIA. + 24"
PROPOSED H.M.A.C. ACP, TYPE D CLASS 1 (THICKNESS AS SPECIFIED)
PROP. COMPACTED CALICHE BASE COMPACTED TO 95% PROCTOR (THICKNESS AS SPECIFIED)
90% STANDARD PROCTOR EARTHEN BACKFILL
a) WHERE PLASTICITY IS LESS THAN 20 AND SANDY MATERIAL, WATER JETTING, ALLOWED
b) WHERE PLASTICITY IS GREATER THAN 20 MECHANICAL TAMP BACKFILL IN 6–8" LAYERS
12"
DIA.
PROP. LINE
GRAVEL, CRUSHED STONE (3/4" MAX. SIZE), OR SAND (IF NO WATER PRESENT) TO BELL OF PROPOSED LINE & APPURTENANCES TO INSURE PROPER PACKING BELOW HAUNCH OF PIPE.
6" MIN.

DRAINAGE STATEMENT
HUISACHE ACRES #10

**HUISACHE ACRES #10** IS A 36.970 ACRES TRACT OF LAND OUT OF BLOCK 100, HALL-FIFIELD SUBDIVISION, AS RECORDED IN VOLUME 1, PAGE 53, HIDALGO COUNTY MAP RECORDS, HIDALGO COUNTY, TEXAS. THE PROPERTY IS LOCATED ALONG THE NORTH SIDE OF ROOSEVELT ROAD (MILE 12 ½ NORTH) AND APPROXIMATELY 1,175 FEET WEST OF VAL VERDE ROAD (F.M. 1423). THE PROPERTY IS CURRENTLY OPEN AND IS LOCATED IN ZONE "C" IN FEMA'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 480334 0425 C, MAP REVISED NOVEMBER 16, 1982. ZONE "C" IS DEFINED AS "AREA OF MINIMAL FLOODING".

THE SOILS ARE HIDALGO SANDY CLAY LOAM AND RAYMONDVILLE CLAY LOAM, WHICH ARE IN HYDROLOGIC GROUP "B" & "C RESPECTIVELY. SOIL GROUP "B" & "C" IS MODERATELY PERVIOUS WITH A RELATIVELY LOW PLASTICITY INDEX. (SEE EXCERPTS FROM "SOIL SURVEY OF HIDALGO COUNTY, TEXAS"). FOR THE PURPOSE OF THIS REPORT, WE WILL USE SOIL TYPE "C", THE MOST COMMON SOIL ON THE SITE.

EXISTING RUNOFF IS BY SURFACE FLOW IN AN EASTERLY DIRECTION AND HAS A RUNOFF OF 14.76 C.F.S. DURING THE 10-YEAR STORM FREQUENCY AS PER THE ATTACHED CALCULATIONS.

THE PROPOSED DRAINAGE FOR **HUISACHE ACRES #10** SHALL CONSIST OF SURFACE RUNOFF FROM THE LOTS INTO PROPOSED STREETS FLOWING TO THE NORTHEAST AND SOUTHWEST CORNER OF THIS SUBDIVISION. RUNOFF FROM STREETS SHALL FLOW INTO THE DONNA IRRIGATION DISTRICT DITCH VIA TYPE "A" INLETS AND AN 18" TO 30" STORM DRAINAGE SYSTEM. THE EXISTING DONNA IRRIGATION DISTRICT DITCH FLOWS EAST ULTIMATELY DISCHARGING INTO THE DONNA LATERAL.

IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE POLICY, THE PEAK RATE OF RUNOFF IN THE SUBDIVISION WILL NOT BE INCREASED DURING THE 10-YEAR RAINFALL EVENT DUE TO THE IMPROVEMENTS IN THIS SUBDIVISION. THEREFORE, AS PER ATTACHED CALCULATIONS, 80,219 CUBIC FEET OF DETENTION WILL BE PROVIDED BY WIDENING THE DONNA IRRIGATION DISTRICT DITCH ALONG THE WEST SIDE OF THIS SUBDIVISION.

CERTIFICATION:

BY MY SIGNATURE BELOW, I CERTIFY THAT THE 100 YEAR FLOODPLAIN AS DESCRIBED IN COMMUNITY PANEL NUMBER 480334 0425 C, REVISED NOVEMBER 16, 1982 IS CONTAINED WITHIN THE DRAINAGE SWALES ALONG THE REAR OF ALL LOTS OF THE SUBDIVISION.

FRED L. KURTH, PE # 54151 DATE:

MELDEN & HUNT, INC.
TEXAS REGISTRATION F–1435

STATE OF TEXAS
FRED L. KURTH
54151
LICENSED
PROFESSIONAL ENGINEER

## PLAN

A
DIA. + 36"
DIA.
1.18"

## TYPE "A" INLET

## SECTION

24"
NATURAL GROUND
MIN. PROCTOR DENSITY COMPACTED TO 95%
MIN. 3" COVER REQ'D. ON ALL SIDES
VARIABLE
PROP. 6" VALLEY GUTTER
DITCH FLOWLINE
24" MAX.
36"
9"

NOTE:
1. CONC. TO HAVE 3000 P.S.I. MIN. 28 DAYS COMPRESSION STRENGTH.
2. ALL REINFORCED STEEL SHALL BE GRADE 60.
3. WIDTH OF DISCHARGE STRUCTURE SHALL BE PIPE DIA. + 36".

## H.C.D.D.#1 STORM DISCHARGE STRUCTURE

N.T.S.

6"x6" CONC. SUPPORT USED WHEN EXTENSION BOX IS CALLED FOR.
No. 4 VERTICAL REINFORCEMENT HOOK 15" OR 6" AS REQUIRED AT TOP.
4"R.
G.I. MANHOLE RING & COVER–USE ALAMO B60–22 OR EQUAL (20 3/8" – 150#)
2"R.
DEPRESS 2" BELOW NORMAL GUTTER
5" CLEAR OPENING
STORM DRAIN PIPE
3'–6" MIN.
ALL STEEL TO BE No. 4 BARS 12" SPACING IN BOTH DIRECTIONS.
SLOPE BOTTOM OF INLET EXTENSION 1/2" / 1'–0" TOWARD INLET
EXTENSION TO INLET TO BE MADE IN INCREMENTS OF 3'–0" OR 6'–0" ONLY.
TRANSITION NORMAL GUTTER TO INLET SLOPE APPROXIMATELY 3'–0".

## DITCH SECTION B

ADDITIONAL R.O.W. 83.32'
EXIST. DRAIN DITCH WIDTH = 34.4'
PROP. DRAIN DITCH WIDENING
EL=89.80
EL=83.15
EL=83.07
EL=83.0
EL=79.70
EL=78.00
EXIST. EAST R.O.W. BOUNDARY
PROP. EAST R.O.W. BOUNDARY

## DITCH SECTION F-F

ADDITIONAL R.O.W. 83.32'
EXIST. DRAIN DITCH WIDTH = 34.4'
PROP. DRAIN DITCH WIDENING
EL=89.63
EL=86.70
EL=86.61
EL=86.13
19'
3'
EL=83.00
12'
10'
EL=78.74
EXIST. EAST R.O.W. BOUNDARY
PROP. EAST R.O.W. BOUNDARY

## RURAL ARTERIAL STREET SECTION

120' R.O.W. / 56' E–E
N.T.S.

120' MINIMUM R.O.W.
30' ROAD DITCH
2'
56' PAVEMENT
2'
30' ROAD DITCH
15'
4' PAVED SHLD.
12' LANE
12' LANE
12' LANE
12' LANE
4' PAVED SHLD.
15'
1 1/2" H.M.A.C. TYPE D 95% COMPACTED DENSITY OR EQUIVALENT
s=3/8"/ft.
12" SUBGRADE AS PER HIDALGO COUNTY SPECS. (PROVIDED AND PLACED BY HIDALGO COUNTY)
10" TYPE D GRADE 6 BASE COMPACTED TO 98% STANDARD PROCTOR (PROVIDED & PLACED BY HIDALGO COUNTY)

NOTE:
1. SEE HIDALGO COUNTY SPECIFICATIONS APPENDIX 9 PLATE 9.2 AND PLATE 9.13

MELDEN & HUNT, INC.
TEXAS REGIST. F-1435

MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS

115 W. McINTYRE
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227 N. F.M. 3167
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E–MAIL: www.meldenandhunt.com
ESTABLISHED 1947

# HIDALGO COUNTY
# PLANNING DEPARTMENT

**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
**DATE: 03-04-2014**

PROPOSED **IDEA QUEST** SUBDIVISION, PRECINCT No. **4** .

ENGINEER: **MELDEN & HUNT, INC.** DEVELOPER: **IDEA PUBLIC SCHOOL (Wyatt Truschett, Chief Officer)**

☐ PRELIMINARY APPROVAL ☒ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: ____ ☐ *SINGLE FAMILY ____ ☐ *MULTI-FAMILY ____ ☐ COMMERCIAL **1** ☒ INSTITUTIONAL

LOCATION DESCRIPTION: **Southwest corner of Rooth Rd. and Russell Rd.**

SUBDIVISION LIES WITHIN THE: ☒ *ETJ of* **McAllen** *and was approved by the P & Z and City Commission of said City*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **10-22-13** PROPERTY LIES WITHIN FLOOD ZONE: **"X"** AS PER FEMA.

DRAINAGE DESIGN: **Drainage will be accomplished by onsite detention swales.**

ROAD R.O.W. DEDICATION: **No dedication was necessary. Rooth Rd & Russell Rd comply with MPO Map Right of Way section.**

H.C.R.O.W. FINAL APPROVAL DATE: **02-06-14** : By, **Joe Ochoa** PCT 4 R.O.W. AGENT

H.C.H.D FINAL APPROVAL DATE: **02-05-14** by: **Elizardo "Chardo" Ramos,** Environmental Health Division Manager

SEWER SYSTEM: ☒ SANITARY SEWER BY **CITY OF MCALLEN** **LINE SIZE: 8"** **LOCATION: 31ST STREET**

WATER SERVICE PROVIDER: **S.W.S.C.** LINE SIZE: **8"** LOCATION: **on Rooth Road**

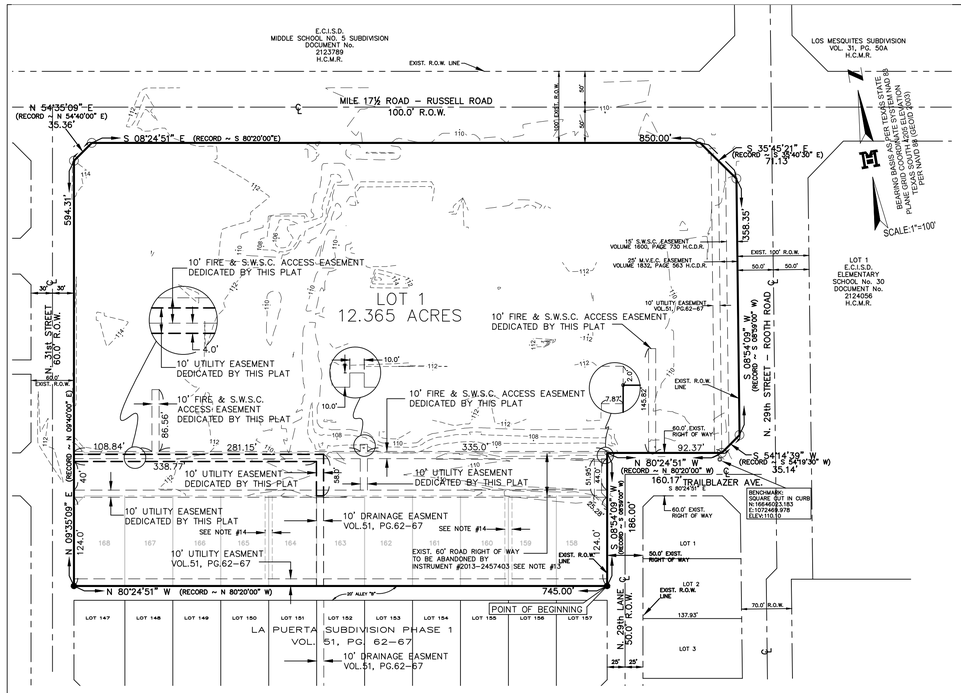
H.C.O.E.C. FINAL APPROVAL DATE: **02-07-14 .**: By **Martin Ramirez, Director of Office of Environmental Compliance**

☒ Less than 1 acre and project is not part of a larger common plan of development – Project will not need coverage under TPDES General Permit for Construction Activities (TXR150000). No further submittals are required.

PRELIMINARY APPROVAL FROM THE HIDALGO COUNTY COMMISSIONERS COURT ON: **DECEMBER 03, 2013**

STAFF RECOMMENDS: ☒ **Final Approval** *subject to recommendations other departments*

* *This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules, Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*




LEGEND

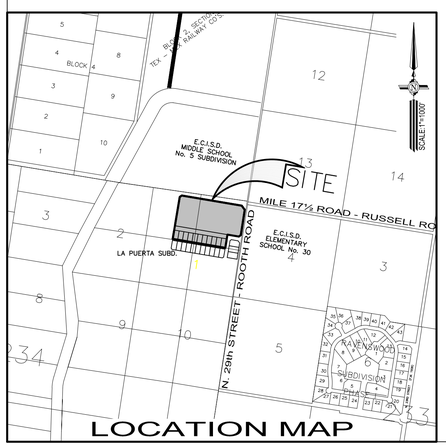
- ● FOUND No. 4 REBAR
- ○ SET No. 4 REBAR WITH PLASTIC CAP STAMPED MELDEN & HUNT
- ◘ SQUARE CUT

# IDEA QUEST SUBDIVISION

BEING A RESUBDIVISION OF 12.365 ACRES CONSISTING OF 9.181 ACRES BEING ALL OF LOT "A" 2.150 ACRES BEING ALL OF LOTS 158 THRU 168 AND 1.034 ACRES BEING THE PORTION OF TRAILBLAZER AVENUE ADJACENT SAID LOTS 158 THRU 168 LA PUERTA SUBDIVISION VOLUME 51, PAGES 62–67 H.C.M.R. HIDALGO COUNTY, TEXAS

LOCATION OF SUBDIVISION WITH RESPECT TO EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY:

IDEA QUEST SUBDIVISION IS LOCATED WITHIN HIDALGO COUNTY PRECINCT No. 4, IN THE NORTH SIDE OF HIDALGO COUNTY ON THE SOUTHWEST CORNER OF THE INTERSECTION OF RUSSEL RD. AND N. 29TH. STREET (ROOTH RD.), THE ONLY NEARBY MUNICIPALITY IS THE CITY OF MCALLEN, ACCORDING TO THE OFFICIAL MAP IN THE OFFICE OF THE SECRETARY OF THE CITY OF MCALLEN (POPULATION 133,742). IDEA QUEST SUBDIVISION LIES APPROXIMATELY 200 FEET FROM THE CITY LIMITS AND IS WITHIN THE CITY'S 5–MILE EXTRATERRITORIAL JURISDITION (ETJ) UNDER LOCAL GOVERNMENT CODE 42.021.




METES AND BOUNDS DESCRIPTION

A TRACT OF LAND CONTAINING 12.365 ACRES SITUATED IN THE COUNTY OF HIDALGO, TEXAS, CONSISTING OF:

9.181 ACRES BEING ALL OF LOT "A", LA PUERTA SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 51, PAGES 62-67, HIDALGO COUNTY MAP RECORDS;

2.150 ACRES BEING ALL OF LOTS 158 THRU 168, LA PUERTA SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 51, PAGES 62-67, HIDALGO COUNTY MAP RECORDS;

1.034 ACRES BEING THAT PORTION OF TRAILBLAZER AVENUE ADJACENT TO THE NORTH LINES OF SAID OF LOTS 158 THRU 168, LA PUERTA SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 51, PAGES 62-67, HIDALGO COUNTY MAP RECORDS;

SAID 12.365 ACRES ALSO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A NO. 4 REBAR FOUND (NORTHING: 16645874.902, EASTING: 1072285.301), AT THE SOUTHEAST CORNER OF LOT 158, LA PUERTA SUBDIVISION FOR THE WESTERNMOST SOUTHEAST CORNER OF THIS TRACT;

1. THENCE, NORTH 80 DEGREES, 24 MINUTES, 51 SECONDS WEST (NORTH 80 DEGREES, 20 MINUTES, 00 SECONDS WEST RECORDED PLAT), ALONG THE SOUTH LINES OF SAID LOTS 158 THRU 168, LA PUERTA SUBDIVISION, A DISTANCE OF 745.00 FEET TO A NO. 4 REBAR FOUND (NORTHING: 16645998.961, EASTING: 1071550.714), AT THE SOUTHWEST CORNER OF LOT 168 FOR THE SOUTHWEST CORNER OF THIS TRACT;
2. THENCE, NORTH 09 DEGREES, 35 MINUTES, 09 SECONDS EAST (NORTH 9 DEGREES, 40 MINUTES, 00 SECONDS EAST RECORDED PLAT), ALONG THE WEST LINE OF SAID LOT 168 AND THE EAST RIGHT-OF-WAY LINE OF N. 31ST STREET, AT A DISTANCE OF 111.00 FEET PASS A NO. 4 REBAR FOUND FOR THE WESTERNMOST NORTHWEST CORNER OF SAID LOT 168, CONTINUING ACROSS THE RIGHT-OF-WAY OF TRAILBLAZER AVENUE, AT A DISTANCE OF 201.00 FEET PASS THE WESTERNMOST SOUTHWEST CORNER OF LOT "A", LA PUERTA SUBDIVISION, CONTINUING ALONG THE WEST LINE OF SAID LOT "A" AND THE EAST RIGHT-OF-WAY LINE OF N. 31ST STREET, FOR A TOTAL DISTANCE OF 594.31 FEET A NO. 4 REBAR SET AT THE WESTERNMOST NORTHWEST CORNER OF SAID LOT "A", FOR THE WESTERNMOST NORTHWEST CORNER OF THIS TRACT;
3. THENCE, NORTH 54 DEGREES, 35 MINUTES, 09 SECONDS EAST (NORTH 54 DEGREES, 40 MINUTES, 00 SECONDS EAST RECORDED PLAT), ALONG THE NORTHWEST LINE OF SAID LOT "A", LA PUERTA SUBDIVISION AND A RIGHT-OF-WAY CLIP LINE, A DISTANCE OF 35.36 FEET TO A NO. 4 REBAR SET (NORTHING: 16646605.465, EASTING: 1071678.487), AT THE EASTERNMOST NORTHWEST CORNER OF SAID LOT "A", FOR THE EASTERNMOST NORTHWEST CORNER OF THIS TRACT;
4. THENCE, SOUTH 80 DEGREES, 24 MINUTES, 51 SECONDS EAST (SOUTH 80 DEGREES, 20 MINUTES, 00 SECONDS EAST RECORDED PLAT), ALONG THE NORTH LINE OF SAID LOT "A", LA PUERTA SUBDIVISION AND THE SOUTH RIGHT-OF-WAY LINE OF MILE 17 ½ - RUSSELL ROAD, A DISTANCE OF 850.00 FEET TO A NO. 4 REBAR SET (NORTHING: 16646463.920, EASTING: 1072516.619), AT THE WESTERNMOST NORTHEAST CORNER OF SAID LOT "A", FOR THE WESTERNMOST NORTHEAST CORNER OF THIS TRACT;
5. THENCE, SOUTH 35 DEGREES, 45 MINUTES, 21 SECONDS EAST (SOUTH 35 DEGREES, 40 MINUTES, 30 SECONDS EAST RECORDED PLAT), ALONG THE NORTHEAST LINE OF SAID LOT "A", LA PUERTA SUBDIVISION AND A RIGHT-OF-WAY CLIP LINE, A DISTANCE OF 71.13 FEET TO AN X MARK MADE IN CONCRETE AT THE EASTERNMOST NORTHEAST CORNER OF SAID LOT "A", FOR THE EASTERNMOST NORTHEAST CORNER OF THIS TRACT;
6. THENCE, SOUTH 08 DEGREES, 54 MINUTES, 09 SECONDS WEST (SOUTH 8 DEGREES, 59 MINUTES, 00 SECONDS WEST RECORDED PLAT), ALONG THE EAST LINE OF SAID LOT "A", LA PUERTA SUBDIVISION AND THE WEST RIGHT-OF-WAY LINE OF N. 29TH STREET - ROOTH ROAD, A DISTANCE OF 358.35 FEET A NO. 4 REBAR SET AT THE EASTERNMOST SOUTHEAST CORNER OF SAID LOT "A", FOR THE EASTERNMOST SOUTHEAST CORNER OF THIS TRACT;
7. THENCE, SOUTH 54 DEGREES, 14 MINUTES, 39 SECONDS WEST (SOUTH 54 DEGREES, 19 MINUTES, 30 SECONDS WEST RECORDED PLAT), ALONG THE SOUTHEAST LINE OF SAID LOT "A", LA PUERTA SUBDIVISION AND A RIGHT-OF-WAY CLIP LINE, A DISTANCE OF 35.14 FEET TO A NO. 4 REBAR SET AT THE WESTERNMOST SOUTHEAST CORNER OF SAID LOT "A", FOR AN OUTSIDE CORNER OF THIS TRACT;
8. THENCE, NORTH 80 DEGREES, 24 MINUTES, 51 SECONDS WEST (NORTH 80 DEGREES, 20 MINUTES, 00 SECONDS WEST RECORDED PLAT), ALONG THE SOUTH LINE OF SAID LOT "A", LA PUERTA SUBDIVISION AND THE NORTH RIGHT-OF-WAY LINE OF TRAILBLAZER AVENUE, A DISTANCE OF 160.17 FEET A NO. 4 REBAR SET FOR AN INSIDE CORNER OF THIS TRACT;
9. THENCE, SOUTH 09 DEGREES, 35 MINUTES, 09 SECONDS WEST (SOUTH 9 DEGREES, 40 MINUTES 00 SECONDS WEST RECORDED PLAT), ACROSS THE RIGHT-OF-WAY OF TRAILBLAZER AVENUE, AT A DISTANCE OF 75.00 FEET PASS A NO. 4 REBAR FOUND FOR THE EASTERNMOST NORTHEAST CORNER OF LOT 158, LA PUERTA SUBDIVISION, CONTINUING ALONG THE EAST LINE OF SAID LOT 158 AND THE WEST RIGHT-OF-WAY LINE OF N. 29TH LANE, FOR A TOTAL DISTANCE OF 186.00 FEET TO THE POINT OF BEGINNING, AND CONTAINING 12.365 ACRES OF LAND, MORE OR LESS.

GENERAL PLAT NOTES & RESTRICTIONS:

1. SETBACKS:
   FRONT (N. 29TH ST.): 50 FEET OR EASEMENT, WHICHEVER IS GREATER
   (N. 31ST ST.): 30 FEET OR EASEMENT, WHICHEVER IS GREATER
   CORNER (RUSSEL RD.): 50 FEET OR EASEMENT, WHICHEVER IS GREATER
   (TRAILBLAZER AVE.): 30 FEET OR EASEMENT, WHICHEVER IS GREATER
   (N. 29TH LANE.): 25 FEET OR EASEMENT, WHICHEVER IS GREATER
2. FLOOD ZONE STATEMENT:
   IN ZONE "X" (UNSHADED)
   ZONE "X" IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOOD PLAIN.
   COMMUNITY–PANEL NUMBER: 480334 0325 D
   MAP REVISED: JUNE 6, 2000
   REVISED TO REFLECT LOMR: MAY 17, 2001
3. DRAINAGE:
   IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 REQUIREMENTS, THIS DEVELOPER WILL BE REQUIRED TO DETAIN A TOTAL OF 51,662 CUBIC FEET (1.186 ACRE–FEET) OF STORM WATER RUNOFF.
4. MINIMUM FINISH FLOOR NOTE:
   MINIMUM FINISH FLOOR ELEVATION SHALL BE 18" ABOVE TOP OF CURB MEASURED AT THE FRONT CENTER OF EACH LOT.
5. 4 FEET WIDE SIDEWALKS REQUIRED ON N. 29TH STREET, RUSSELL ROAD, N. 31ST STREET, TRAILBLAZER AVE., AND N. 29TH LANE.
6. 6 FEET OPAQUE BUFFER REQUIRED FROM ADJACENT/BETWEEN MULTI–FAMILY RESIDENTIAL AND COMMERCIAL, OR INDUSTRIAL ZONES/USES.
7. ALL LOT CORNERS SET HALF INCH (½) IRON RODS OR AS NOTED.
8. AN ENGINEERED DETENTION PLAN APPROVED BY ENGINEERING DEPT. IS REQUIRED PRIOR TO ISSUANCE OF BUILDING PERMITS.
9. BENCHMARK NOTE:
   THE FOLLOWING BENCHMARK IS IDENTIFIED ON THE FACE OF THE PLAT AND ON THE ATTACHED ENGINEERING PLANS.
   SQUARE CUT ON CURB AT THE NORTHWEST CORNER OF TRAILBLAZER AVE. & N. 29TH ST. (ROOTH RD.)
   ELEV. 110.10 N= 16646023.183 E= 1072469.978 NAD 83 TEXAS SOUTH 4205.
10. NO STRUCTURE SHALL BE PERMITTED OVER ANY EASEMENT. EASEMENTS SHALL BE KEPT CLEAR OF FENCES,BUILDINGS, SHEDS, SHRUBS, TREES AND OTHER PLANTINGS (EXCEPT LOW, LESS THAN 18 INCHES MATURE HEIGHT, GROUND COVER, GRASS, OR FLOWERS) AND OTHER OBSTRUCTIONS TO THE OPERATIONS AND MAINTENANCE OF THE EASEMENT.
11. ALL NEW CONSTRUCTION SHALL COMPLY WITH COUNTY OF HIDALGO STORM WATER POLLUTION PREVENTION PLAN (SW3P) REQUIREMENTS.
12. 8 FEET MASONRY WALL REQUIRED BETWEEN SINGLE FAMILY RESIDENTIAL AND COMMERCIAL, INDUSTRIAL, OR MULTI–FAMILY RESIDENTIAL ZONES/USES.
13. TRAILBLAZER AVENUE EXISTING RIGHT OF WAY PORTION ABANDONED BY RECORDED DOCUMENT #2013–2457403
14. EXISTING 10' ELECTRICAL EASEMENTS LOCATED BETWEEN FORMER LOTS 159 & 160, AND 164 & 165 ABANDONED BY RECORDED DOCUMENT #_____
15. LOT 1 SHALL BE FOR SCHOOL/EDUCATIONAL INSTITUTION USE ONLY.
16. SANITARY SEWER WILL BE PROVIDED BY CITY OF MCALLEN IN ACCORDANCE WITH TCEQ GUIDELINES.

**HIDALGO COUNTY**
**CERTIFICATE OF PLAT APPROVAL**
**UNDER LOCAL GOVERNMENT CODE § 232.028 (A)**

WE THE UNDER SIGNED CERTIFY THAT THIS PLAT OF IDEA QUEST SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY COMMISSIONERS COURT ON _____DAY OF_____ 20____.

_____
HIDALGO COUNTY JUDGE

ATTEST: _____
HIDALGO COUNTY CLERK

I THE UNDERSIGNED, CHAIRPERSON OF THE PLANNING AND ZONING COMMISSION OF THE CITY OF McALLEN HEREBY CERTIFY THAT THIS SUBDIVISION PLAT CONFORMS TO ALL REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF THIS CITY WHEREIN MY APPROVAL IS REQUIRED.

_____
CHAIRPERSON, PLANNING COMMISSION DATE

I THE UNDERSIGNED, MAYOR OF THE CITY OF McALLEN, HEREBY CERTIFY THAT THIS SUBDIVISION PLAT CONFORMS TO ALL REQUIREMENTS OF THE SUBDIVISION REGULATIONS OF THIS CITY WHEREIN MY APPROVAL IS REQUIRED.

_____
MAYOR, CITY OF McALLEN DATE

HIDALGO COUNTY
CERTIFICATION OF PLAT APPROVAL
UNDER LOCAL GOVERNMENT CODE 232.0281 (a)

WE THE UNDERSIGNED CERTIFY THAT THIS PLAT OF IDEA QUEST SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY COMMISSIONERS COURT ON THE_____DAY OF _____ 20____.

_____
HIDALGO COUNTY JUDGE DATE

_____
HIDALGO COUNTY CLERK DATE

STATE OF TEXAS
COUNTY OF HIDALGO:

OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION

I, WYATT TRUSCHEIT AS CHIEF FINANCIAL OFFICER OF THE 12.365–ACRE TRACT OF LAND ENCOMPASSED WITHIN THE PROPOSED IDEA QUEST, HEREBY SUBDIVIDE THE LAND AS DEPICTED IN THIS SUBDIVISION PLAT AND DEDICATE TO THE PUBLIC USE THE STREET(S), PARK AND EASEMENTS SHOWN HEREIN. I CERTIFY THAT I HAVE COMPLIED WITH THE REQUIREMENTS OF TEXAS LOCAL GOVERNMENT CODE § 232.032 AND THAT

(A) THE WATER QUALITY AND CONNECTIONS TO THE LOT(S) MEET OR WILL MEET THE MINIMUM STATE STANDARDS.
(B) SANITARY SEWER CONNECTIONS TO THE LOT(S) OR SEPTIC TANKS MEET OR WILL MEET THE MINIMUM STATE STANDARDS.
(C) ELECTRICAL CONNECTIONS PROVIDED TO THE LOT(S) MEET OR WILL MEET THE MINIMUM STATE STANDARDS.
(D) GAS CONNECTIONS, IF AVAILABLE, PROVIDED TO THE LOT(S) MEET OR WILL MEET THE MINIMUM STATE STANDARDS.

I ATTEST THAT THE MATTERS ASSERTED IN THIS PLAT ARE TRUE AND COMPLETE.

_____
WYATT TRUSCHEIT DATE
CHIEF FINANCIAL OFFICER
IDEA PUBLIC SCHOOLS
505 ANGELITA DR., SUITE 9
WESLACO, TX 78596

STATE OF TEXAS
COUNTY OF HIDALGO

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED _____ KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSED AND CONSIDERATIONS THEREIN GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE _____ DAY OF _____, 20_____.

_____
NOTARY PUBLIC, HIDALGO COUNTY, TEXAS
MY COMMISSION EXPIRES:

HIDALGO COUNTY DRAINAGE DISTRICT NO.1 HEREBY CERTIFIES THAT THE DRAINAGE PLANS FOR THIS SUBDIVISION COMPLY WITH THE MINIMUM STANDARDS OF THE DISTRICT ADOPTED UNDER TEX. WATER CODE 49.211 (c). THE DISTRICT HAS NOT REVIEWED AND DOES NOT CERTIFY THAT THE DRAINAGE STRUCTURES DESCRIBED ARE APPROPRIATE FOR THE SPECIFIC SUBDIVISION, BASED ON GENERALLY ACCEPTED ENGINEERING CRITERIA. IT IS THE RESPONSIBILITY OF THE DEVELOPER OF THE SUBDIVISION AND ITS ENGINEER TO MAKE THESE DETERMINATIONS.

HIDALGO COUNTY DRAINAGE DISTRICT NO.1

BY: _____

**HIDALGO COUNTY**
**CERTIFICATE OF PLAT APPROVAL**
**HIDALGO COUNTY HEALTH DEPARTMENT**

I, THE UNDERSIGNED CERTIFY THAT THIS PLAT OF IDEA QUEST SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT

ON THIS THE _____DAY OF_____ 20 _____.

_____ _____
ENVIRONMENTAL HEALTH DIVISION MANAGER DATE

STATE OF TEXAS:
COUNTY OF HIDALGO:

I, THE UNDERSIGNED, HOLDER (OR DULY AUTHORIZED OFFICER OF THE HOLDER) OF A SECURITY INTEREST IN THE ABOVE DESCRIBED PROPERTY, BEING THE LAND SHOWN ON THIS PLAT AND DESIGNATED HEREIN AS "IDEA QUEST SUBDIVISION" OF THE CITY OF McALLEN, TEXAS, DO HEREBY CONSENT TO THE SUBDIVISION OF THE PROPERTY AS PROVIDED FOR UNDER THE PLAT, AND DO HEREBY PROVIDE THAT ANY FORECLOSURE RELATING TO THE SECURITY INTEREST ON THE ABOVE DESCRIBED PROPERTY SHALL BE SUBJECT TO THE PLATTING OF THE PROPERTY AS PROVIDED FOR HEREIN.

_____
WELLS FARGO BANK

STATE OF TEXAS:
COUNTY OF HIDALGO:

BEFORE ME THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED JASON LEAL, KNOWN TO BE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN GIVEN UNDER MY HAND AND SEAL OF OFFICE,
THIS THE __ DAY OF _____ 20___.

_____
NOTARY PUBLIC FOR THE STATE OF TEXAS
MY COMMISSION EXPIRES:

STATE OF TEXAS
COUNTY OF HIDALGO:

I, THE UNDERSIGNED, KELLEY A. HELLER–VELA, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN TO THIS PLAT.

_____
KELLEY A. HELLER–VELA, P.E. # 97421
DATE PREPARED: 05–21–2012
ENGINEERING JOB No. 11044.00

STATE OF TEXAS
KELLEY A. HELLER–VELA
97421
LICENSED PROFESSIONAL ENGINEER

STATE OF TEXAS
COUNTY OF HIDALGO:

I, THE UNDERSIGNED, FRED L. KURTH, A REGISTERED PROFESSIONAL LAND SURVEYOR, IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE HEREIN PRESENTED PLAT AND DESCRIPTION OF IDEA QUEST , WERE PREPARED FROM A SURVEY OF THE PROPERTY MADE ON THE GROUND BY ME OR UNDER MY SUPERVISION ON MAY 25, 2012 AND THAT IT IS A TRUE AND ACCURATE REPRESENTATION OF THE SUBDIVISION OF THE LANDS HEREON DESCRIBED.

_____
FRED L. KURTH, R.P.L.S. # 4750
DATE SURVEYED: 05–25–2012
T–934, PAGES 6–34, 37, 42–49
SURVEY JOB No. 11044.08

STATE OF TEXAS
FRED L. KURTH
4750
PROFESSIONAL LAND SURVEYOR

THE COUNTY OF HIDALGO TEXAS

FILED FOR RECORD IN
HIDALGO COUNTY
**ARTURO GUAJARDO, JR.**
**HIDALGO COUNTY CLERK**

ON: _____ AT _____ AM/PM

DOCUMENT NUMBER _____

OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS

BY: _____ DEPUTY


MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
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EDINBURG, TX 78541
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FAX: (956) 488–8591
www.meldenandhunt.com
FIRM #1435


| | | | |
|---|---|---|---|
| DRAWN BY: MC | DATE: | | |
| IRRIGATION, CHECKED | DATE: | | |
| SURVEYED, CHECKED | DATE: | | |
| FINAL CHECK | DATE: | | |

PRINCIPAL CONTACTS:

| NAME | ADDRESS | CITY & ZIP | PHONE | FAX |
|---|---|---|---|---|
| OWNER: WYATT TRUSHEIT, C.F.O. | 505 ANGELITA DR., SUITE 9 | WESLACO, TX 78596 | 956–377–8000 | 956–447–3796 |
| ENGINEER: KELLEY HELLER–VELA | 115 WEST McINTYRE | EDINBURG, TX 78541 | 956–381–0981 | 956–381–1839 |
| SURVEYOR: FRED L. HURTH | 115 WEST McINTYRE | EDINBURG, TX 78541 | 956–381–0981 | 956–381–1839 |

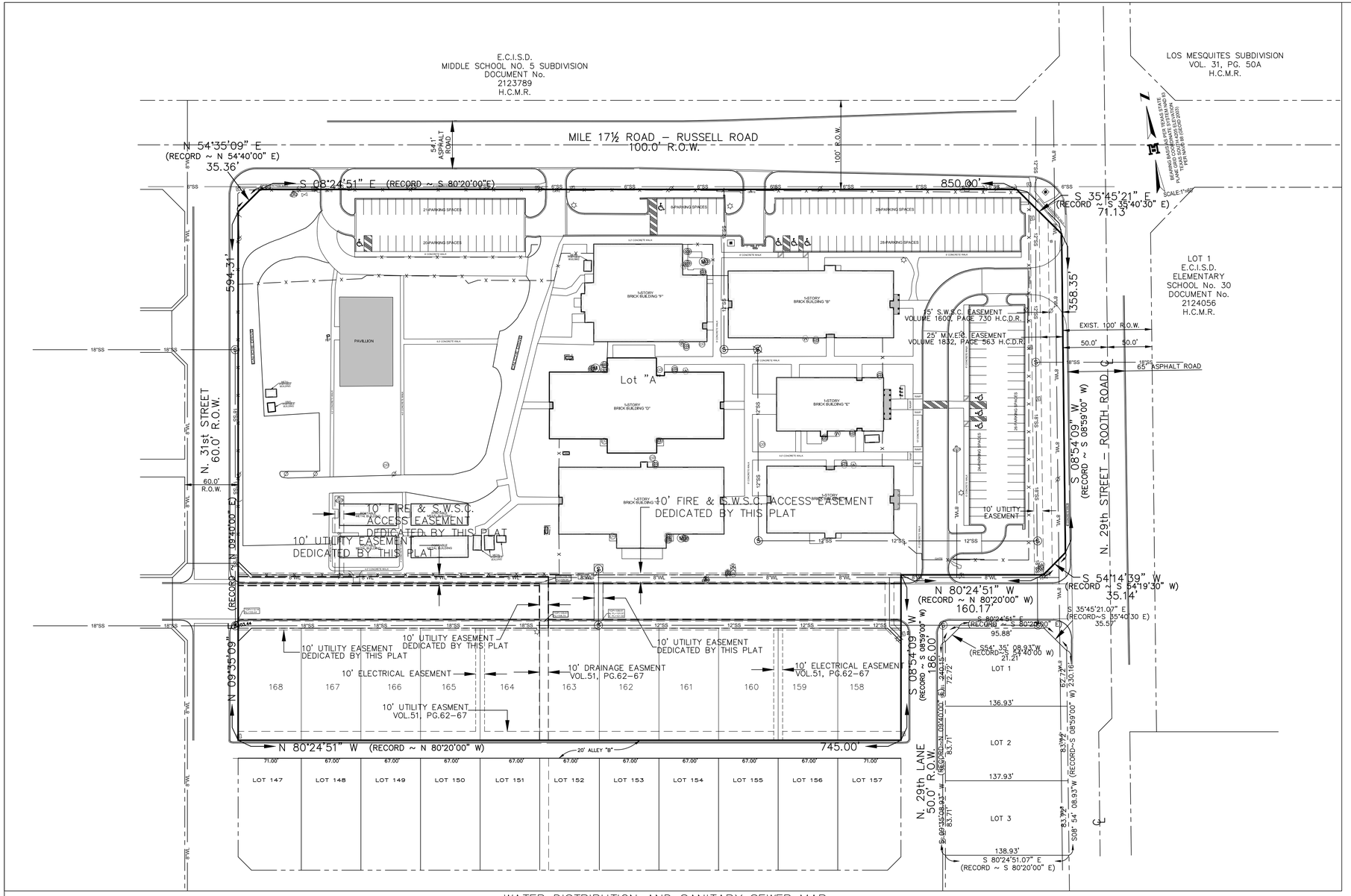
SHEET 1

SHEET INDEX:


SHEET 1: HEADING, INDEX, VICINITY MAP AND ETJ, PRINCIPAL CONTACTS, LEGAL DESCRIPTION (METES & BOUNDS), SUREYOR'S AND ENGINEER'S CERTIFICATION, PLAT NOTES AND RESTRICTIONS, OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION, CITY APPROVAL CERTIFICATE, COUNTY CLERK'S RECORDING CERTIFICATE, DESCRIPTION OF LOCATION OF SUBDIVISION WITH RESPECT TO THE ETJ OF A MUNICIPALITY AND DESIGNATE THE PRECINCT THE PROJECT IS SITUATED, IRRIGATION DISTRICT CERTIFICATE OF APPROVAL, PROPERTY CONDITIONS PRIOR TO PLAT SUBDIVISION DEPICTING LOTS, STREET RIGHT OF WAY TO BE ABANDONED, PROPERTY CONDITIONS AFTER PLAT SUBDIVISION WITH STREETS, AND EASEMENTS DESIGNATIONS.

SHEET 2: WATER DISTRIBUTION AND SANITARY SEWER MAP, BUILDING SITE PLAN

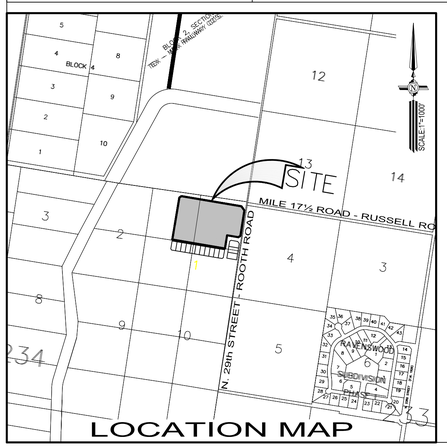
SHEET 3: MAP OF TOPOGRAPHY AND DRAINAGE, BUILDING SITE PLAN




WATER DISTRIBUTION AND SANITARY SEWER MAP

## LEGEND

- FIRE HYDRANT
- WATER METER
- FIRE DEPARTMENT CONNECTION
- WATER VALVE MARKER
- FLUSH VALVE
- WATER VALVE
- SANITARY SEWER MANHOLE
- WOOD FENCE
- 24"SD — 24" STORM SEWER LINE
- 12"SS — 12" SANITARY SEWER LINE
- 18"SS — 18" SANITARY SEWER LINE

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THE COUNTY OF HIDALGO TEXAS

FILED FOR RECORD IN
HIDALGO COUNTY
**ARTURO GUAJARDO, JR.**
**HIDALGO COUNTY CLERK**

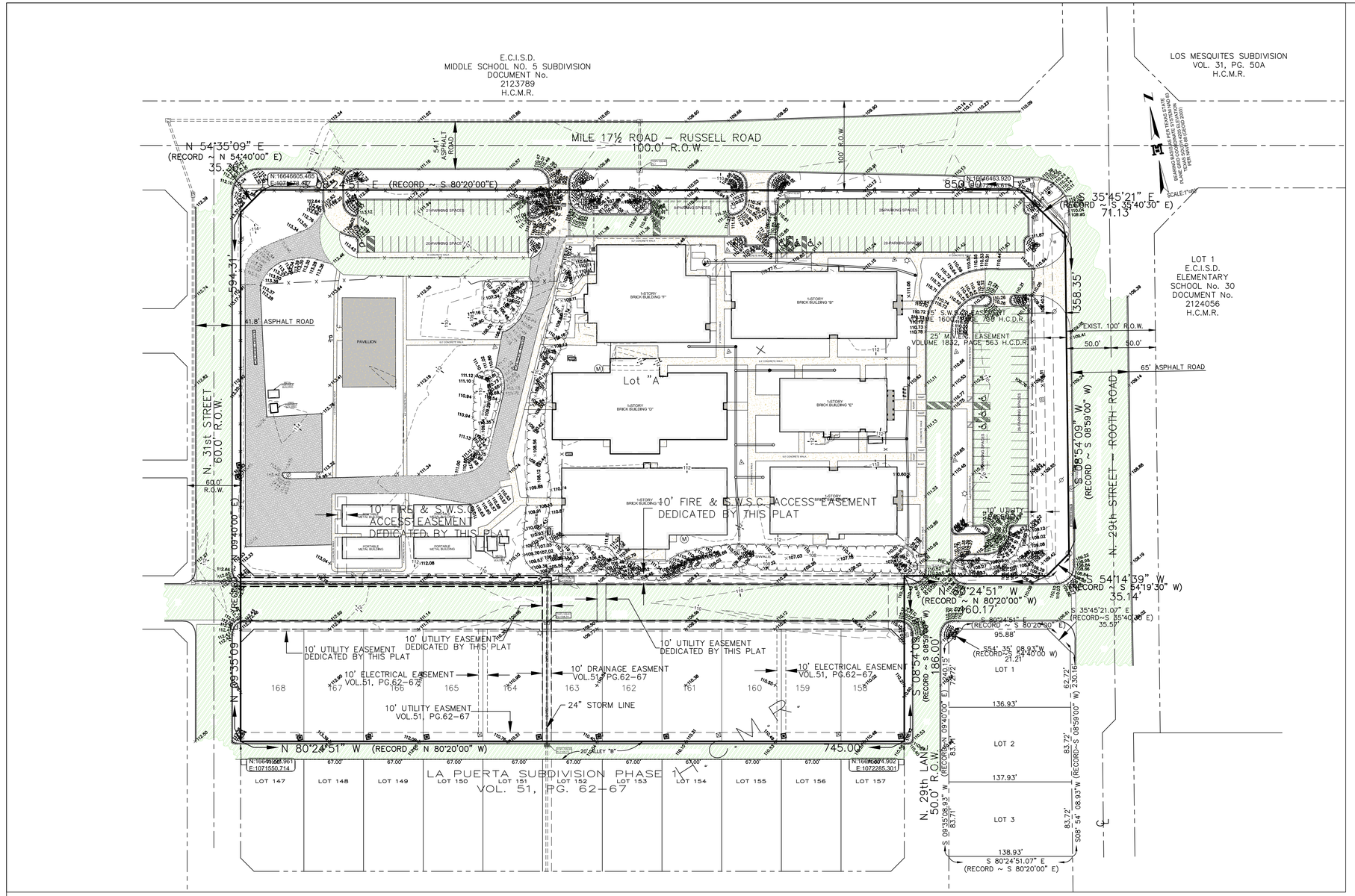
ON: _____ AT _____ AM/PM

DOCUMENT NUMBER _____

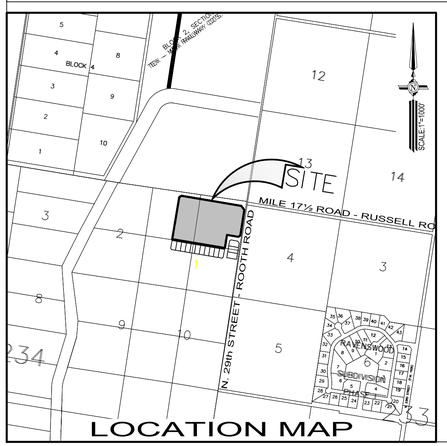
OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS

BY: _____ DEPUTY

| SHEET 2 |
|---|
| SHEET INDEX: |
| SHEET 1: HEADING, INDEX, VICINITY MAP AND ETJ, PRINCIPAL CONTACTS, LEGAL DESCRIPTION (METES & BOUNDS), SURVEYOR'S AND ENGINEER'S CERTIFICATION, PLAT NOTES AND RESTRICTIONS, OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION, CITY APPROVAL CERTIFICATE, COUNTY CLERK'S RECORDING CERTIFICATE, HIDALGO COUNTY CERTIFICATE OF PLAT APPROVAL, DESCRIPTION OF LOCATION OF SUBDIVISION WITH RESPECT TO THE ETJ OF A MUNICIPALITY AND DESIGNATE THE PRECINCT THE PROJECT IS SITUATED, H.C.D.D. NO. 1 CERTIFICATION, IRRIGATION DISTRICT CERTIFICATE OF APPROVAL, PROPERTY CONDITIONS PRIOR TO PLAT SUBDIVISION DEPICTING LOTS, STREET RIGHT OF WAY TO BE ABANDONED, PROPERTY CONDITIONS AFTER PLAT SUBDIVISION WITH STREETS, AND EASEMENTS DESIGNATIONS. |
| SHEET 2: WATER DISTRIBUTION AND SANITARY SEWER MAP |
| SHEET 3: MAP OF TOPOGRAPHY AND DRAINAGE |




TOPOGRAPHY AND DRAINAGE PLAN




MELDEN & HUNT INC.
CONSULTANTS ENGINEERS SURVEYORS
115 W. McINTYRE
EDINBURG, TX 78541
PH: (956) 381-0981
FAX: (956) 381-1839
ESTABLISHED 1947
227 N. F.M. 3167
RIO GRANDE CITY, TX 78582
PH: (956) 487-8256
FAX: (956) 488-8591
www.meldenandhunt.com
FIRM #1435

LEGEND

- STORM SEWER MANHOLE
- TYPE "A" INLET
- TYPE "C" INLET
- 2'x2' GRATE INLET
- BEE HIVE INLET

**DRAINAGE STATEMENT**
**IDEA QUEST SUBDIVISION**
October 14, 2013

IDEA QUEST SUBDIVISION is a 12.365 Acres tract of land out of Lot "A", Lots 158 thru 168, and a portion of Trailblazer Avenue adjacent to Lots 158 thru 168, La Puerta Subdivision, Hidalgo County Texas as recorded in Volume 51, Pages 62-67, Hidalgo County Map Records. The property is located at the southwest corner of Mile 17 ½ Road (Russell Road) and N. 29th Street (Rooth Road). The property is currently a Charter School and vacant land and is located in Zone "X" unshaded in FEMA's Flood Insurance Rate Map, Community Panel No. 480334 0325 D, Map Revised June 6, 2000 and Revised to reflect LOMR dated May 17, 2001. Zone "X" unshaded is "areas determined to be outside 500-year flood plain".

The soils are fine sandy loam and sandy clay loam, which is moderately pervious with a relatively low plasticity index.

Existing runoff is by surface flow from the parking and green areas into the existing swales on the school's property.

The drainage for **IDEA QUEST SUBDIVISION** shall remain as it currently is. Runoff from the parking and green areas will flow into the existing onsite swales. The existing swales connect to the drainage pipe system installed in La Puerta Subdivision, which outfalls into the ditches constructed with La Puerta Subdivision and ultimately outfalls into the North Main Drain. As per the drainage plan for La Puerta Subdivision, no onsite detention is required of this site. This was accommodated within the ditches constructed with La Puerta Subdivision (see copy of previous drainage report attached).

KELLEY A. HELLER–VELA, P.E. # 97421

STATE OF TEXAS
KELLEY A. HELLER–VELA
97421
LICENSED
PROFESSIONAL ENGINEER

THE COUNTY OF HIDALGO TEXAS

FILED FOR RECORD IN
HIDALGO COUNTY
**ARTURO GUAJARDO, JR.**
**HIDALGO COUNTY CLERK**

ON: _____ AT _____ AM/PM
DOCUMENT NUMBER _____
OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS
BY: _____ DEPUTY

| |
|---|
| SHEET 3 |
| SHEET INDEX: |
| SHEET 1: HEADING, INDEX, VICINITY MAP AND ETJ, PRINCIPAL CONTACTS, LEGAL DESCRIPTION (METES & BOUNDS), SUREYOR'S AND ENGINEER'S CERTIFICATION, PLAT NOTES AND RESTRICTIONS, OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION, CITY APPROVAL CERTIFICATE, COUNTY CLERK'S RECORDING CERTIFICATE, HIDALGO COUNTY CERTIFICATE OF PLAT APPROVAL, DESCRIPTION OF LOCATION OF SUBDIVISION WITH RESPECT TO THE ETJ OF A MUNICIPALITY AND DESIGNATE THE PRECINCT THE PROJECT IS SITUATED, H.C.D.D. NO. 1 CERTIFICATION, IRRIGATION DISTRICT CERTIFICATE OF APPROVAL, PROPERTY CONDITIONS PRIOR TO PLAT SUBDIVISION DEPICTING LOTS, STREET RIGHT OF WAY TO BE ABANDONED, PROPERTY CONDITIONS AFTER PLAT SUBDIVISION WITH STREETS, AND EASEMENTS DESIGNATIONS. |
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# HIDALGO COUNTY
# PLANNING DEPARTMENT

**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
**DATE: 03-04-2014**

PROPOSED **RSBR DG (FM 2812)** SUBDIVISION, PRECINCT No. **4**.

ENGINEER: **MELDEN & HUNT, INC.** DEVELOPER: **ESDGAR T. CANTU**

☐ PRELIMINARY APPROVAL ☒ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: ☐ *SINGLE FAMILY ☐ *MULTI-FAMILY **1** ☒ COMMERCIAL ☐ INSTITUTIONAL

LOCATION DESCRIPTION: **On the Northwest corner of Chukar Street and FM 2812**

SUBDIVISION LIES WITHIN THE: ☒ *ETJ of* **Edinburg** *and was approved administratively by said City.*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **11-19-13** PROPERTY LIES WITHIN FLOOD ZONE: **"B"** AS PER FEMA.

DRAINAGE DESIGN: **Drainage will be accomplished by detention pond and a proposed 8" PVC bleeder line connecting to the bar ditch on FM 2812.**

ROAD R.O.W. DEDICATION: **No dedication is required; FM 2812 complies with Hidalgo Thoroughfare Plan**

H.C.R.O.W. FINAL APPROVAL DATE: **01-06-14** By, **Jesse Ozuna** PCT. 4 R.O.W. AGENT

H.C.H.D. FINAL APPROVAL DATE: **11-25-13** By, **Elizardo "Chardo" Ramos,** Environmental Health Division Manager

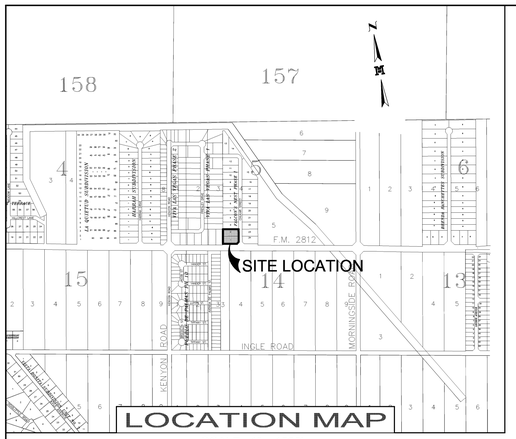
SEWER SYSTEM: ☒ SANITARY SEWER BY: **Edinburg** LINE SIZE: **6"** LOCATION: **FM 2812.**

WATER SERVICE PROVIDER: **North Alamo Water Supply Corp** LINE SIZE: **8"** LOCATION: **Chukar Street**

H.C.O.E.C. FINAL APPROVAL DATE: **01-09-14** : By **Martin Ramirez,** Environmental Compliance Coordinator

☒ Less than 1 acre and project is not part of a larger common plan of development – Project will not need coverage under TPDES General Permit for Construction Activities (TXR150000). No further submittals are required.

STAFF RECOMMENDS: ☒ **Final Approval** *subject to recommendations by other departments.*




SCALE: 1" = 1000'

LOCATION OF SUBDIVISION WITH RESPECT TO THE EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY:

RSBR DG (FM 2812) SUBDIVISION IS LOCATED IN THE NORTH CENTRAL PART OF HIDALGO COUNTY AND ON THE NORTH SIDE OF FM 2812 , AT THE NORTH WEST CORNER OF THE INTERSECTION WITH CHUKAR ST. . THE ONLY NEARBY MUNICIPALITY IS THE CITY OF EDINBURG. RSBR DG (FM 2812) SUBDIVISION FALLS IN THE RURAL AREA OF HIDALGO COUNTY. THIS SUBDIVISION FALLS WITHIN PRECINCT 4. EDINBURG POPULATION IS 77,100 ACCORDING TO THE 2010 US CENSUS.

# SUBDIVISION MAP OF
# RSBR DG (FM 2812) SUBDIVISION

BEING A RE-SUBDIVISION OF
1.021 ACRES (44,464.24 S.F.)
BEING ALL OF LOT1 AND LOT 2,
FALCON'S NEST SUBDIVISION PHASE 1
AS RECORDED IN
VOLUME 51, PAGE 174-176, H.C.M.R.
HIDALGO COUNTY, TEXAS

## METES AND BOUNDS DESCRIPTION:

A TRACT OF LAND CONTAINING 1.021 ACRES (44,464.240 SQUARE FEET) SITUATED IN HIDALGO COUNTY, TEXAS, BEING ALL OF LOT 1 AND LOT 2, FALCON'S NEST SUBDIVISION PHASE I, ACCORDING TO PLAT THEREOF RECORDED IN VOLUME 51, PAGES 174-176, HIDALGO COUNTY MAP RECORDS, WHICH SAID LOT 1 AND LOT 2 WERE CONVEYED TO ESDGAR T. CANTU BY VIRTUE OF WARRANTY DEEDS RECORDED UNDER DOCUMENTS NUMBERS 2122752 AND 2318848, HIDALGO COUNTY OFFICIAL RECORDS; SAID 1.021 ACRES (44,464.240 SQUARE FEET) ALSO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT AN "X" MARK ON CONCRETE FOUND AT THE NORTHEAST CORNER OF SAID LOT 1, AND BEING ON THE WEST RIGHT-OF-WAY LINE OF CHUKAR STREET, FOR THE NORTHEAST CORNER OF THIS HEREIN DESCRIBED TRACT;

1. THENCE, S 08°38'35" W (S 08°23'W MAP CALL) ALONG THE EAST LINE OF SAID LOT 2, AT A DISTANCE OF 99.46 FEET PASS A NO. 4 REBAR FOUND AT THE SOUTHEAST CORNER OF SAID LOT 2 AND THE NORTHEAST CORNER OF SAID LOT 1, CONTINUING A TOTAL DISTANCE OF 179.46 FEET TO A NO. 4 REBAR FOUND AT THE NORTHERNMOST SOUTHEAST CORNER OF LOT 1, FOR THE NORTHERNMOST SOUTHEAST CORNER OF THIS TRACT;

2. THENCE, S 53°38'35" W (S 53°23' W MAP CALL) ALONG THE CORNER CLIP OF SAID LOT 1, A DISTANCE OF 35.36 FEET TO A NO. 4 REBAR FOUND FOR THE SOUTHERNMOST SOUTHEAST CORNER OF THIS TRACT;

3. THENCE, N 81°21'25" W (N 81°37' W MAP CALL) ALONG THE SOUTH LINE OF SAID LOT 1 AND THE EXISTING NORTH RIGHT-OF-WAY LINE OF F.M. 2812, A DISTANCE OF 194.00 FEET TO A NO. 4 REBAR FOUND (NORTHING: 16663731.3131, EASTING: 1113772.6681) AT THE SOUTHWEST CORNER OF SAID LOT 1 AND THE SOUTHEAST CORNER OF LOT 51, VIVA LAS VEGAS SUBDIVISION PHASE I, RECORDED IN INSTRUMENT NUMBER 1968528, HIDALGO COUNTY MAP RECORDS, FOR THE SOUTHWEST CORNER OF THIS TRACT;

4. THENCE, N 08°38'35" E (N 08°23'E MAP CALL) ALONG THE WEST LINES OF SAID LOT 1 AND LOT 2 AND THE EAST LINES OF SAID LOT 51 AND LOT 44 OF SAID VIVA LAS VEGAS SUBDIVISION PHASE I, AT A DISTANCE OF 105.00 FEET PASS A NO. 4 REBAR FOUND AT THE NORTHWEST CORNER OF SAID LOT 1 AND THE SOUTHWEST CORNER OF SAID LOT 2, CONTINUING A TOTAL DISTANCE OF 204.46 FEET TO A NO. 4 REBAR FOUND (NORTHING: 16663933.4512, EASTING: 1113803.3940) AT THE NORTHWEST CORNER OF SAID LOT 2, FOR THE NORTHWEST CORNER OF THIS TRACT;

5. THENCE, S 81°21'25" E (S 81°37'E MAP CALL) ALONG THE NORTH LINE OF SAID LOT 2 AND THE SOUTH LINE OF LOT 3 OF SAID FALCON'S NEST SUBDIVISION PHASE I, A DISTANCE OF 219.00 FEET TO THE POINT OF BEGINNING AND CONTAINING 1.021 ACRES (44,464.240 SQUARE FEET) OF LAND, MORE OR LESS.

## HIDALGO COUNTY
## CERTIFICATE OF PLAT APPROVAL
## HIDALGO COUNTY DRAINAGE DISTRICT NO. 1

HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 HEREBY CERTIFIES THAT THE DRAINAGE PLANS FOR THIS SUBDIVISION COMPLY WITH THE MINIMUM STANDARDS OF THE DISTRICT ADOPTED UNDER TEX. WATER CODE 49.211 (c). THE DISTRICT HAS NOT REVIEWED AND DOES NOT CERTIFY THAT THE DRAINAGE STRUCTURES DESCRIBED ARE APPROPRIATE FOR THE SPECIFIC SUBDIVISION, BASED ON GENERALLY ACCEPTED ENGINEERING CRITERIA. IT IS THE RESPONSIBILITY OF THE DEVELOPER OF THE SUBDIVISION AND ITS ENGINEER TO MAKE THESE DETERMINATIONS.

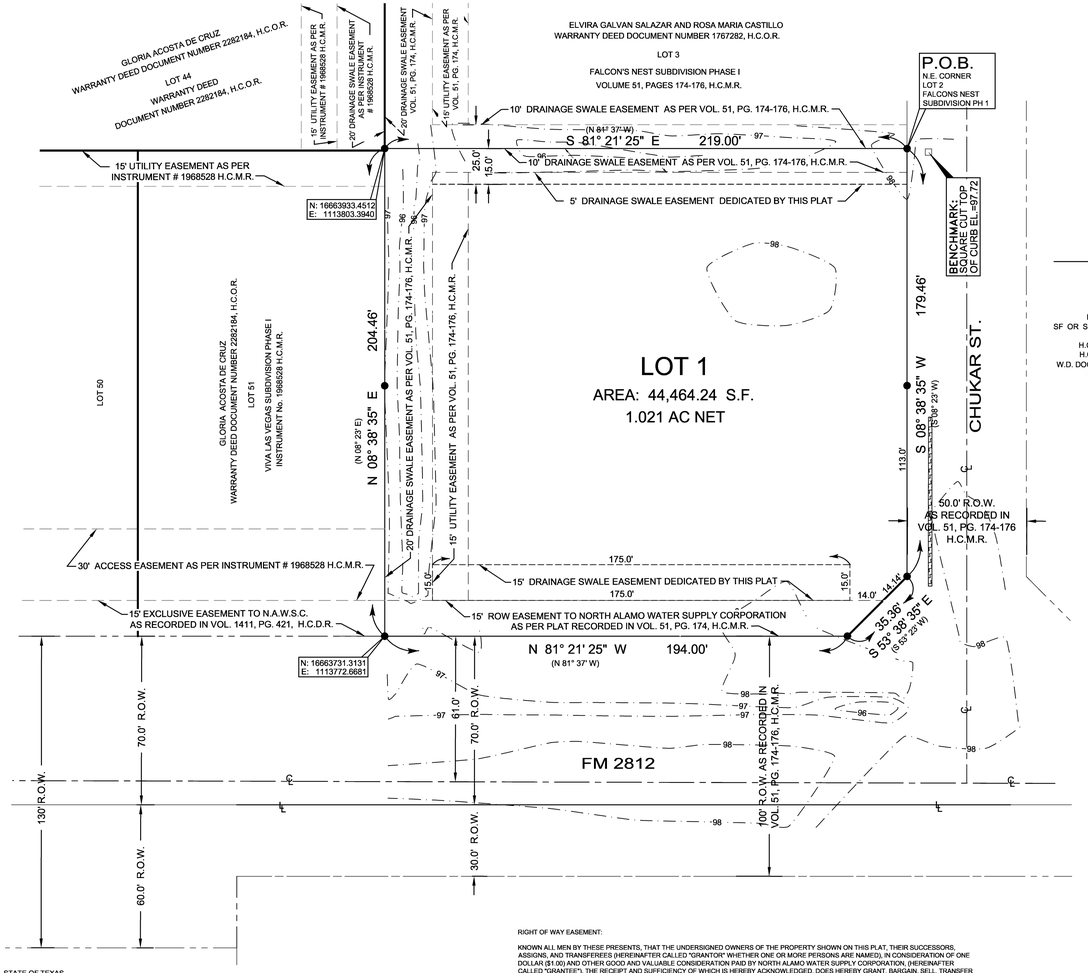
HIDALGO COUNTY DRAINAGE DISTRICT NO. 1

BY: _____

_____

PRINCIPAL CONTACTS

| | NAME | ADDRESS | CITY & ZIP | PHONE | FAX |
|---|---|---|---|---|---|
| OWNER: | ESDGAR T. CANTU | 23475 N. FM 493 | EDCOUCH, TX. 78538 | (956) _____ | (956) _____ |
| ENGINEER: | KELLEY A. HELLER-VELA | 115 W. McINTYRE | EDINBURG, TX. 78541 | (956) 381-0981 | (956) 381-1839 |
| SURVEYOR: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX. 78541 | (956) 381-0981 | (956) 381-1839 |




1 INCH = 30 FT.

BEARING BASIS AS PER TEXAS STATE PLANE COORDINATE SYSTEM, NAD 83 (93) TEXAS SOUTH 4205 ELEVATION REFERENCED TO (GEOID 2003)

## LEGEND

- FOUND No.4 REBAR
- SET CPS IN POWER POLE
- SET No.4 REBAR WITH PLASTIC CAP STAMPED MELDEN & HUNT

R.O.W.- RIGHT-OF-WAY
SF OR SQ. FT.- SQUARE FEET
AC- ACRE(S)
H.C.M.R.- HIDALGO COUNTY MAP RECORDS
H.C.O.R.- HIDALGO COUNTY OFFICIAL RECORDS
W.D. DOC. NO.- WARRANTY DEED DOCUMENT NO.
P.O.B.- POINT OF BEGINNING
OSSF- ON SITE SANITARY SEWER FACILITIES
℄- CENTERLINE OF RIGHT-OF-WAY
[ ]- RECORDED MAP CALLS
℄- CENTERLINE OF RIGHT-OF-WAY

STATE OF TEXAS
COUNTY OF HIDALGO:

OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION

I, ESDGAR T. CANTU AS OWNER OF THE 1.021 ACRE TRACT OF LAND ENCOMPASSED WITHIN THE PROPOSED RSBR DG (FM 2812) SUBDIVISION, HEREBY SUBDIVIDE THE LAND AS DEPICTED IN THIS SUBDIVISION PLAT AND DEDICATE TO THE PUBLIC USE THE STREET(S), PARK AND EASEMENTS SHOWN HEREIN.

I CERTIFY THAT I HAVE COMPLIED WITH THE REQUIREMENTS OF TEXAS LOCAL GOVERNMENT CODE § 232.032 AND THAT

(A) THE WATER QUALITY AND CONNECTIONS TO THE LOT(S) MEET OR WILL MEET THE MINIMUM STATE STANDARDS.
(B) SANITARY SEWER CONNECTIONS TO THE LOT(S) OR SEPTIC TANKS MEET OR WILL MEET THE MINIMUM STATE STANDARDS.
(C) ELECTRICAL CONNECTIONS PROVIDED TO THE LOT(S) MEET OR WILL MEET THE MINIMUM STATE STANDARDS.
(D) GAS CONNECTIONS, IF AVAILABLE, PROVIDED TO THE LOT(S) MEET OR WILL MEET THE MINIMUM STATE STANDARDS.

I ATTEST THAT THE MATTERS ASSERTED IN THIS PLAT ARE TRUE AND COMPLETE.

_____ _____
ESDGAR T. CANTU DATE
23475 N. FM 493
EDCOUCH, TX 78538

STATE OF TEXAS
COUNTY OF HIDALGO:

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, ON THIS DAY PERSONALLY APPEARED ESDGAR T. CANTU , AND KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, WHO, BEING BY ME, FIRST DULLY SWORN AND DECLARED THAT THE STATEMENTS THEREIN ARE TRUE AND CORRECT AND ACKNOWLEDGED THAT HE/SHE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREBY EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____, 20____.

_____
NOTARY PUBLIC IN THE STATE OF TEXAS
MY COMMISSION EXPIRES:

## SANTA CRUZ IRRIGATION NO. 15
## CERTIFICATE OF PLAT APPROVAL

THIS PLAT WAS APPROVED BY SANTA CRUZ IRRIGATION DISTICT NO. 15 ON THIS ____ DAY OF _____, 20_____.

1) NO BUILDINGS ARE ALLOWED ON TOP OF AN IRRIGATION LINE.
2) FIFTEEN FOOT (15') EASEMENT ON EACH SIDE OF IRRIGATION LINE OR CANAL.
3) ALL LOTS SUBJECT TO RULES, REGULATIONS, RIGHTS-OF-WAY, AND EASEMENTS OF DISTRICT.
4) IF SUBDIVISION IS NOT EXCLUDED FROM THIS DISTRICT AND IRRIGATION TO INDIVIDUAL LOTS IS DESIRED, EASEMENTS FOR NECESSARY IRRIGATION FACILITIES TO SUCH LOTS FROM THE CLOSEST DISTRICT DELIVERY POINT SHALL BE PROVIDED, WITH THE LOT OWNER BEING RESPONSIBLE TO INSTALL SUCH NECESSARY FACILITIES.

_____ _____
PRESIDENT DATE

_____ _____
SECRETARY DATE

TBPE FIRM # F-1435

MELDEN & HUNT INC.
CONSULTANTS · ENGINEERS · SURVEYORS
115 W. McINTYRE EDINBURG, TX 78541 PH: (956) 381-0981 FAX: (956) 381-1839
227 N. F.M. 3167 RIO GRANDE CITY, TX 78582 PH: (956) 487-8256 FAX: (956) 488-8591
ESTABLISHED 1947
www.meldenandhunt.com

| | |
|---|---|
| DRAWN BY: CLEMENTE MENA | DATE: 11-15-13 |
| SURVEYED, CHECKED | DATE: _____ |
| FINAL CHECK | DATE: _____ |

RIGHT OF WAY EASEMENT:

KNOWN ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED OWNERS OF THE PROPERTY SHOWN ON THIS PLAT, THEIR SUCCESSORS, ASSIGNS, AND TRANSFEREES (HEREINAFTER CALLED "GRANTOR" WHETHER ONE OR MORE PERSONS ARE NAMED), IN CONSIDERATION OF ONE DOLLAR ($1.00) AND OTHER GOOD AND VALUABLE CONSIDERATION PAID BY NORTH ALAMO WATER SUPPLY CORPORATION, (HEREINAFTER CALLED "GRANTEE"), THE RECEIPT AND SUFFICIENCY OF WHICH IS HEREBY ACKNOWLEDGED, DOES HEREBY GRANT, BARGAIN, SELL, TRANSFER AND CONVEY TO SAID GRANTEE, ITS SUCCESSORS AND ASSIGNS, A PERPETUAL EASEMENT WITH THE RIGHT TO ERECT, CONSTRUCT, INSTALL AND LAY AND THEREAFTER USE, OPERATE, INSPECT, REPAIR, MAINTAIN, REPLACE AND REMOVE WATER DISTRIBUTION LINES AND APPURTENANCES OVER AND ACROSS LANDS SHOWN ON THIS PLAT, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT LANDS FOR THE PURPOSE FOR WHICH THE ABOVE-MENTIONED RIGHTS ARE GRANTED. THE EASEMENT HEREBY GRANTED SHALL NOT EXCEED 15' IN WIDTH, AND GRANTEE IS HEREBY AUTHORIZED TO DESIGNATE THE COURSE OF THE EASEMENT HEREIN CONVEYED EXCEPT THAT WHEN THE PIPELINE(S) IS INSTALLED, THE EASEMENT HEREIN GRANTED SHALL BE LIMITED TO A STRIP OF LAND 15' IN WIDTH THE CENTER LINE THEREOF BEING THE PIPELINE INSTALLED.

IN THE EVENT THE EASEMENT HEREBY GRANTED ABUTS ON A PUBLIC ROAD AND THE COUNTY OR STATE HEREAFTER WIDENS OR RELOCATES THE PUBLIC ROAD SO AS TO REQUIRE THE RELOCATION OF THIS WATER LINE AS INSTALLED, GRANTOR FURTHER GRANTS TO GRANTEE AN ADDITIONAL EASEMENT OVER AND ACROSS THE LAND DESCRIBED ABOVE FOR THE PURPOSE OF LATERALLY RELOCATING SAID WATER LINE AS MAY BE NECESSARY TO CLEAR THE ROAD IMPROVEMENTS, WHICH EASEMENT HEREBY GRANTED SHALL BE LIMITED TO A STRIP OF LAND 15' IN WIDTH THE CENTER LINE THEREOF BEING THE PIPELINE AS RELOCATED.

THE CONSIDERATION RECITED HEREIN SHALL CONSTITUTE PAYMENT IN FULL FOR ALL DAMAGES SUSTAINED BY GRANTOR BY REASON OF THE INSTALLATION, MAINTENANCE, REPAIR, REPLACEMENT AND RELOCATION OF THE STRUCTURES REFERRED TO HEREIN. THIS AGREEMENT TOGETHER WITH OTHER PROVISIONS OF THIS GRANT SHALL CONSTITUTE A COVENANT RUNNING WITH THE LAND FOR THE BENEFIT OF THE GRANTEE, ITS SUCCESSORS, AND ASSIGNS. THE GRANTOR COVENANTS THAT SHE IS THE OWNER OF THE ABOVE-DESCRIBED LANDS AND THAT SAID LANDS ARE FREE AND CLEAR OF ALL ENCUMBRANCES AND LIENS, EXCEPT THE FOLLOWING:

THE EASEMENT CONVEYED HEREIN WAS OBTAINED OR IMPROVED THROUGH FEDERAL FINANCIAL ASSISTANCE. THIS EASEMENT IS SUBJECT TO THE PROVISIONS OF THE TITLE VI OF THE CIVIL RIGHTS ACT OF 1964 AND THE REGULATIONS ISSUED PURSUANT THERETO FOR SO LONG AS THE EASEMENT CONTINUES TO BE USED FOR THE SAME OR SIMILAR PURPOSE FOR WHICH FINANCIAL ASSISTANCE WAS EXTENDED OR FOR SO LONG AS THE GRANTEE OWNS IT, WHICHEVER IS LONGER.

IN WITNESS WHEREOF, THE SAID GRANTOR HAS EXECUTED THIS INSTRUMENT THE _____ DAY OF _____, 20 _____.

_____
(GRANTOR'S SIGNATURE)

ACKNOWLEDGMENT

THE STATE OF TEXAS §
COUNTY OF HIDALGO §

BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS DAY PERSONALLY APPEARED _____, KNOWN TO ME TO BE THE PERSON(S) WHOSE NAME(S) IS (ARE) SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE (SHE) (THEY) EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE _____ DAY OF _____, 20 _____.

_____
NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES:

## HIDALGO COUNTY
## CERTIFICATE OF PLAT APPROVAL
## HIDALGO COUNTY HEALTH DEPARTMENT

I, THE UNDERSIGNED CERTIFY THAT THIS PLAT OF RSBR DG (FM 2812) SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT

ON THIS THE ___DAY OF_____ 20 ___.

_____ _____.
ENVIRONMENTAL HEALTH DIVISION MANAGER DATE

GENERAL PLAT NOTES & RESTRICTIONS:

1. FLOOD ZONE STATEMENT: ZONE "X" (UNSHADED) IS DEFINED AS: "AREAS DETERMINED TO BE OUTSIDE 500–YEAR FLOODPLAIN".

   COMMUNITY-PANEL NUMBER: 480334 0325 D
   MAP REVISED: JUNE 6, 2000; FURTHER REVISED TO REFLECT LOMR DATED MAY 17, 2001 .

2. SETBACKS:
   FRONT: CHUKAR ST. 25.00 FEET OR EASEMENT, WHICHEVER IS GREATER
   REAR: 20% OF LOT DEPTH, TO TO EXCEED 40' OR EASEMENT, WHICHEVER IS GREATER
   SIDE: 6.00 FEET OR EASEMENT, WHICHEVER IS GREATER
   SIDE: FM 2812 50.00 FEET OR EASEMENT, WHICHEVER IS GREATER
   CORNER: 20.00 FEET OR EASEMENT, WHICHEVER IS GREATER

3. LOT 1 IS FOR COMMERCIAL USE ONLY. THERE SHALL BE NO OTHER USE OTHER THAN COMMERCIAL. LOT 1 IS OR NONRESIDENTIAL USE. THIS MUST BE STIPULATED ON ALL DEEDS AND CONTRACTS FOR DEEDS. APPLICATIONS FOR CONSTRUCTION ARE REQUIRED PRIOR TO OCCUPYING THE LOT.

4. MINIMUM FINISHED FLOOR ELEVATION SHALL BE 18" ABOVE THE CENTER LINE OF STREET OR 18" ABOVE NATURAL GROUND, WHICHEVER IS GREATER. ELEVATION CERTIFICATE MAY BE REQUIRED FOR LOTS LOCATED OUTSIDE A DESIGNATED FLOOD ZONE AT THE TIME OF APPLICATION FOR CONSTRUCTION TO VERIFY PRE AND POST CONSTRUCTION FINISHED FLOOR ELEVATIONS. AN ELEVATION CERTIFICATE SHALL BE REQUIRED FOR ALL LOTS WITHIN A DESIGNATED FLOOD ZONE AT THE TIME FOR A DEVELOPMENT PERMIT APPLICATION.

5. THE FOLLOWING BENCHMARKS ARE IDENTIFIED ON THE FACE OF THE PLAT AND ON THE ATTACHED ENGINEERING PLANS, AS PER NAVD 88 (GEOID 2003).

   B.M. NO.1 – SQUARE CUT ON CONCRETE; N:16632632.033, E: 1126271.131, ELEV.= 97.72

6. IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 AND HIDALGO COUNTY REQUIREMENTS, THIS DEVELOPMENT WILL BE REQUIRED TO DETAIN A TOTAL OF 3747 CUBIC–FEET ( 0.086 ACRE–FEET) OF STORM WATER RUNOFF. DRAINAGE RETENTION IN ACCORDANCE WITH THE LOCAL REQUIREMENTS WILL BE ACCOMPLISHED AS FOLLOWS: (SEE SHEET No. 2 FOR STORM SEWER IMPROVEMENTS.) THE DEVELOPER SHALL BE RESPONSIBLE TO DETAIN AND ACCOMMODATE MORE THAN THE DETAINED VOLUME SHOWN ABOVE IF IT DETERMINES AT THE DEVELOPMENT PERMIT STAGE THAT THE DETENTION REQUIREMENTS ARE GREATER THAT STATED ABOVE DUE TO THE IMPERVIOUS AREA BEING GREATER THAT ENGINEER CONSIDERED FOR HIS CALCULATIONS OF THIS SUBDIVISION.

7. NO FILL OR PERMANENT STRUCTURES SHALL BE ALLOWED WITHIN ANY DRAINAGE SWALE EASEMENT. EACH DRAINAGE SWALE EASEMENT SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, PLANTINGS, AND OTHER OBSTRUCTIONS THAT WOULD INTERFERE WITH THE OPERATION OF THE DRAINAGE SWALE. THE LOT OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE SWALE.

8. NO STRUCTURE SHALL BE PERMITTED OVER ANY EASEMENT. EASEMENTS SHALL BE KEPT CLEAR OF BUILDINGS, SHEDS, SHRUBS TREES, AND OTHER PLANTINGS (EXCEPT LOW, LESS THAN 18 INCHES MATURE HEIGHT, GROUND COVER, GRASS, OR FLOWERS) AND OTHER OBSTRUCTIONS THAT WOULD INTERFERE WITH THE OPERATIONS AND MAINTENANCE OF THE EASEMENT.

9. ALL PUBLIC UTILITIES EASEMENTS DEDICATED BY THIS PLAT SHALL BE A MINIMUM WIDTH OF 15.00 FEET AS PER THE HIDALGO COUNTY MODEL SUBDIVISION RULES. BY SIGNING THIS PLAT, DEVELOPER AND ENGINEER CERTIFY THAT ALL OTHER EASEMENTS SHOWN COMPLY WITH THE SIZE REQUIRED BY EACH UTILITY PROVIDER OCCUPYING AN EASEMENT.

10. AN OFF–STREET PARKING LOT SITE PLAN & DRAINAGE PLAN APPROVED BY THE HIDALGO COUNTY PLANNING DEPARTMENT AND THE OFFICE OF ENVIRONMENTAL COMPLIANCE SHALL BE REQUIRED FOR COMMERCIAL USE AT THE TIME OF APPLICATION FOR CONSTRUCTION PRIOR TO THE ISSUANCE OF A BUILDING AND/OR DEVELOPMENT PERMIT. NO WATER OR LIGHT CLEARANCES SHALL BE ISSUED UNTIL THE SITE PLAN, DRAINAGE PLAN AND OSSF PLAN ARE APPROVED AND PROPOSED IMPROVEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH COUNTY AND STATE STANDARDS.

11. THERE ARE NO VISIBLE WATER WELLS WITHIN 150 FEET FROM THE BOUNDARIES ON THIS SUBDIVISION.

12. NO ACCESS SHALL BE ALLOWED FROM FM 2812 ON TO LOT 1. A TXDOT DRIVEWAY/ENTRANCE PERMIT IS REQUIRED FOR LOT 1 PRIOR TO THE CONSTRUCTION OF A DRIVEWAY/ENTRANCE ON TO FM 2812. TXDOT ACCESS PERMIT IS REQUIRED PRIOR TO THE COUNTY ISSUING A DEVELOPMENT APPLICATION PERMIT. ACCESS TO LOT 1 WILL BE FROM CHUKAR STREET, ON THE EAST SIDE OF RSBR DG (FM 2812) SUBDIVISION.

13. DRAINAGE DETENTION POND SHALL/TO BE CONSTRUCTED IN DESIGNATED EASEMENT AREAS AS DESIGNED BY PROJECT PLAT ENGINEER AT DEVELOPMENT APPLICATION PERMIT STAGE PRIOR TO THE COUNTY ISSUING A FINAL LIGHT AND WATER CLEARANCE. NO FINAL LIGHT OR WATER CLEARANCE SHALL BE ISSUED UNTIL THE DRAINAGE DETENTION POND IS CONSTRUCTED BY OWNER AND INSPECTED BY COUNTY.

14. LOT 1 IN RSBR DG (FM 2812) SUBDIVISION ARE HEREBY GRANTED A "DRAINAGE SWALE EASEMENT" WITH RESPECT TO SURFACE WATER RUN–OFF FROM ALL LOTS IN RSBR DG (FM 2812) SUBDIVISION TO THE AREA DEPICTED ON THE SUBDIVISION PLAT AS THE "DRAINAGE SWALE" AREAS. LOT OWNERS OF RSBR DG (FM 2812) SUBDIVISION THEIR ASSIGNS AND ANY SUBSEQUENT OWNER OF THE REAL PROPERTY DESIGNATED ON THE SUBDIVISION PLAT ARE RESPONSIBLE FOR THE MAINTENANCE OF THE DRAINAGE SWALES. THE COUNTY OF HIDALGO, TEXAS ("COUNTY"), AND THE HIDALGO COUNTY DRAINAGE DISTRICT NUMBER 1 ("DRAINAGE DISTRICT") MAY ENFORCE THIS PLAT NOTE BY INJUNCTION OR ANOTHER REMEDY PROVIDED BY LAW, AND THE COUNTY AND/OR THE DRAINAGE DISTRICT ARE ALSO ENTITLED TO RECOVER ALL ENFORCEMENT COSTS AND/OR MAINTENANCE COSTS FORM THE LOT OWNER IN VIOLATION IN THE EVENT THE DRAINAGE SWALES DEPICTED ON THE SUBDIVISION PLAT ARE NO LONGER NECESSARY FOR DRAINAGE OF THE LOTS COMPRISING RSBR DG (FM 2812) SUBDIVISION , BECAUSE AN ALTERNATE DRAINAGE SYSTEM, CONSTRUCTED AND MAINTAINED BY A POLITICAL SUBDIVISION IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS, IS FULLY OPERATIONAL AND ACTUALLY SERVING ALL THE LOTS IN RSBR DG (FM 2812) SUBDIVISION THE COUNTY AND THE DRAINAGE DISTRICT ARE HEREBY GRANTED THE RIGHT AND THE AUTHORITY (AND EACH LOT OWNER, BY THE ACCEPTANCE OF A DEED TO LOT IN RSBR DG (FM 2812) SUBDIVISION ACKNOWLEDGES AND EGRESS THAT THE COUNTY AND THE DRAINAGE DISTRICT HAS THE RIGHT AND AUTHORITY), TO RELEASE THE DRAINAGE EASEMENT BURDENING THE DRAINAGE SWALES PURSUANT TO THIS PLAT NOTE, BY AN INSTRUMENT IN WRITING RECORDED IN THE OFFICIAL RECORDS, HIDALGO COUNTY, TEXAS.

STATE OF TEXAS
COUNTY OF HIDALGO

I, THE UNDERSIGNED, KELLEY A. HELLER-VELA, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN TO THIS PLAT.

DATED THIS THE____DAY OF_____20____.

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

_____
KELLEY A. HELLER-VELA, PROFESSIONAL ENGINEER No.97421
STATE OF TEXAS

DATE PREPARED: 11-21-13
ENGINEERING JOB # 13120.00

STATE OF TEXAS
COUNTY OF HIDALGO

I, FRED L. KURTH, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE FROM AN ACTUAL SURVEY MADE ON THE GROUND OF THE PROPERTY LEGALLY DESCRIBED HEREON, AND THAT THERE ARE NO APPARENT DISCREPANCIES, CONFLICTS, OVERLAPPING OF IMPROVEMENTS, VISIBLE UTILITY LINES OR ROADS IN PLACE, EXCEPT AS SHOWN ON THE ACCOMPANYING PLAT, AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY SUPERVISION IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS OF THE COUNTY OF HIDALGO, TEXAS.

DATED THIS THE____DAY OF_____20____.

_____
FRED L. KURTH, PROFESSIONAL LAND SURVEYOR No.4750
STATE OF TEXAS

DATE SURVEYED: 10-24-2013
T-961, PG. 4-5 & 29
SURVEY JOB # 13120.08

## HIDALGO COUNTY
## CERTIFICATE OF PLAT APPROVAL
## UNDER LOCAL GOVERNMENT CODE § 232.028 (A)

I, THE UNDERSIGNED CERTIFY THAT THIS PLAT OF RSBR DG (FM 2812) SUBDIVISION WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY COMMISSIONERS COURT

ON THIS THE ___ DAY OF_____ 20 ___.

_____ _____.
HIDALGO COUNTY JUDGE DATE

ATTEST: _____ _____.
HIDALGO COUNTY CLERK DATE

INDEX TO SHEET OF RSBR DG (FM 2812) SUBDIVISION

SHEET 1: HEADING; INDEX; LOCATION MAP AND ETJ; PRINCIPAL CONTACTS; MAP: LOT, STREETS, AND EASEMENT LAYOUT; DESCRIPTION (METES AND BOUNDS); SURVEYOR'S CERTIFICATION; PLAT NOTES AND RESTRICTIONS; OWNER'S DEDICATION, CERTIFICATION, ATTESTATION; ENGINEERING CERTIFICATION; APPROVAL CERTIFICATE; COUNTY CLERK'S RECORDING CERTIFICATE; REVISION NOTES, IRRIGATION DISTRICT, H.C.D.D. No. 1;. HIDALGO COUNTY HEALTH DEPARTMENT CERTIFICATE; N.A.W.S.C. CERTIFICATION.

SHEET 2: ENGINEERING REPORT, INCLUDING LAYOUT OF WATER AND WASTE WATER AND ENGINEERS CERTIFICATION. MAP OF TOPOGRAPHY AND DRAINAGE PRIOR TO DEVELOPMENT. PROPOSED SITE PLAN.

FILE FOR RECORD IN
HIDALGO COUNTY
ARTURO GUAJARDO JR.
HIDALGO COUNTY CLERK

ON: _____ AT _____ AM/PM

DOCUMENT NUMBER_____

OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS
BY: _____ DEPUTY

X:\Land Development\Commercial\Hidalgo County\1320 - RSBR DG FM 2812\Autocad files\DWG\1320 C PLAT.dwg, 11/25/2013 4:48:09 PM, AP 7900.pc3

# SUBDIVISION MAP OF
# RSBR DG (FM 2812) SUBDIVISION

BEING A RE-SUBDIVISION OF
1.021 ACRES (44,464.24 S.F.)
BEING ALL OF
LOT 1 AND LOT 2
FALCON'S NEST SUBDIVISION PHASE 1
AS RECORDED IN
VOLUME 51, PAGES 174-176, H.C.M.R.
HIDALGO COUNTY, TEXAS

COST ESTIMATES:

| | | |
|---|---|---|
| DRAINAGE IMPROVEMENTS : | $ | 500.00 |
| WATER DISTRIBUTION : | $ | 4,000.00 |
| SANITARY SEWER : | $ | 2,000.00 |
| PAVING IMPROVEMENTS : | $ | 0.00 |
| TOTAL : | $ | 6,500.00 |

RSBR DG SAN CARLOS SUBDIVISION
DRAINAGE STATEMENT
JOB NO. 13095.00 DATE: SEPTEMBER 11, 2013

**RSBR DG (FM 2812) SUBDIVISION** IS A SUBDIVISION OF 1.021 ACRES (44,464.24 SQ FT.) OUT OF LOT 1 AND 2, FALCON'S NEST SUBDIVISION PHASE 1, AS RECORDED IN VOLUME 51 PAGES 174-176, HIDALGO COUNTY MAP RECORDS, HIDALGO COUNTY TEXAS. THIS IS EXISTING OPEN LAND AND IS PROPOSED AS A 1-LOT COMMERCIAL SUBDIVISION. THIS PROPERTY IS LOCATED IN ZONE "X" (UN-SHADED) AND IS DEFINED AS "AREAS DETERMINED TO BE OUTSIDE OF 500-YEAR FLOODPLAIN", AS PER COMMUNITY-PANEL NUMBER 480334 0325D REVISED ON JUNE 6, 2000, FURTHER REVISED BY LOMR DATED MAY 17, 2001.

THE SOILS TYPE IS HARGILL FINE SANDY LOAM. HARGILL FINE SANDY LOAM RANGES FROM A MODERATELY FINE TO MODERATELY COARSE TEXTURE. THIS SOIL IS IN HYDROLOGIC GROUP "B". (SEE EXCERPTS FROM "SOIL SURVEY OF HIDALGO COUNTY, TEXAS"). FOR PURPOSES OF THIS REPORT, WE WILL USE GROUP "B", THE PREDOMINANT TYPE WITHIN THIS SITE.

THE EXISTING DRAINAGE FOR **RSBR DG (FM 2812) SUBDIVISION** CONSISTS OF SURFACE RUNOFF FROM NATURAL GROUND INTO THE EXISTING DRAINAGE SYSTEM FOR FALCON'S NEST SUBDIVISION PHASE 1, WHICH HAS AN OUTFALL WITH AN 8" BLEEDER LINE INTO THE BAR DITCH ALONG THE NORTH SIDE OF FM 2812. THE PROPOSED RUNOFF FROM THIS SITE WILL FLOW FROM THE BUILDING AND PARKING AREAS ONTO THE GREEN AREAS AND INTO THE DETENTION SWALES. THE SWALE, LOCATED ALONG THE EAST SIDE OF THE SITE, WILL CONNECT TO THE EXISTING DRAINAGE SWALES OF THE FALCON'S NEST SUBDIVISION PHASE 1. THE EXISTING DRAINAGE SWALE ALONG THE WEST SIDE OF LOTS 1 AND 2 WILL BE RESHAPED TO PROVIDE ADDITIONAL DETENTION. ALL ADDITIONAL DETENTION WILL OUTFALL INTO THE BAR DITCH ALONG FM 2812 THROUGH THE EXISTING 8" BLEEDER OUTFALL.

IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE POLICY, THE PEAK RATE OF RUNOFF IN THE SUBDIVISION WILL NOT BE INCREASED DURING THE 10-YEAR RAINFALL EVENT DUE TO THE IMPROVEMENTS IN THIS SUBDIVISION. THEREFORE, AS PER ATTACHED CALCULATIONS, 3,747 CUBIC FEET OF DETENTION IS REQUIRED AND WILL BE PROVIDED WITHIN THE DRAINAGE SWALES OF THIS SUBDIVISION.

STATE OF TEXAS
COUNTY OF HIDALGO

I, THE UNDERSIGNED, KELLEY A. HELLER-VELA, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN TO THIS PLAT.

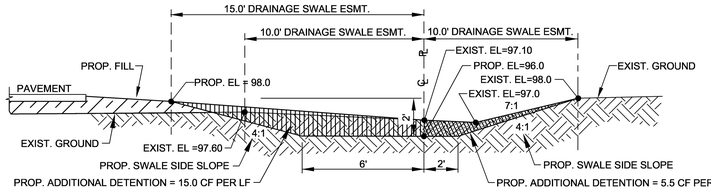
DATED THIS THE____DAY OF_____20____.

KELLEY A. HELLER-VELA, PROFESSIONAL ENGINEER No.97421
STATE OF TEXAS

DATE PREPARED: 11-15-13
ENGINEERING JOB # 13120.00

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

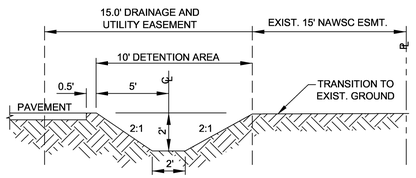
STATE OF TEXAS · KELLEY A. HELLER-VELA · 97421 · LICENSED PROFESSIONAL ENGINEER




NOTE: TOTAL ADDITIONAL CUBIC FOOT OF DETENTION PER LINEAR FOOT IS 20.5 CF.

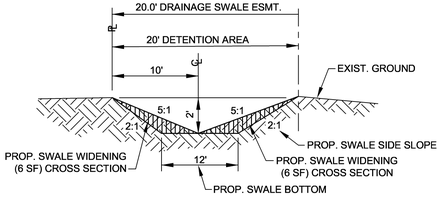
## DETENTION AREA CROSS-SECTION C-C
## NORTH SIDE (3,690 C.F. CAPACITY)

N.T.S.




## DETENTION AREA CROSS-SECTION A-A
## EAST SIDE ( 2,040 C.F. CAPACITY)

N.T.S.



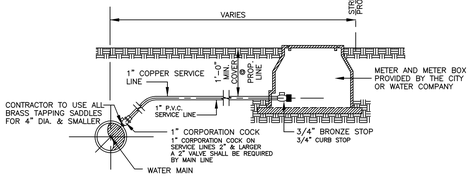

NOTE: TOTAL ADDITIONAL CUBIC FOOT OF DETENTION PER LINEAR FOOT IS 12 CF.

## DETENTION AREA CROSS-SECTION B-B
## WEST SIDE ( 2,160 C.F. CAPACITY)

N.T.S.

TOTAL DETENTION PROVIDED

| | | |
|---|---|---|
| SWALE "A" | -> | 2,160 CF |
| SWALE "B" | -> | 2,040 CF |
| SWALE "C" | -> | 3,690 CF |
| TOTAL = | | 7,890 CF |



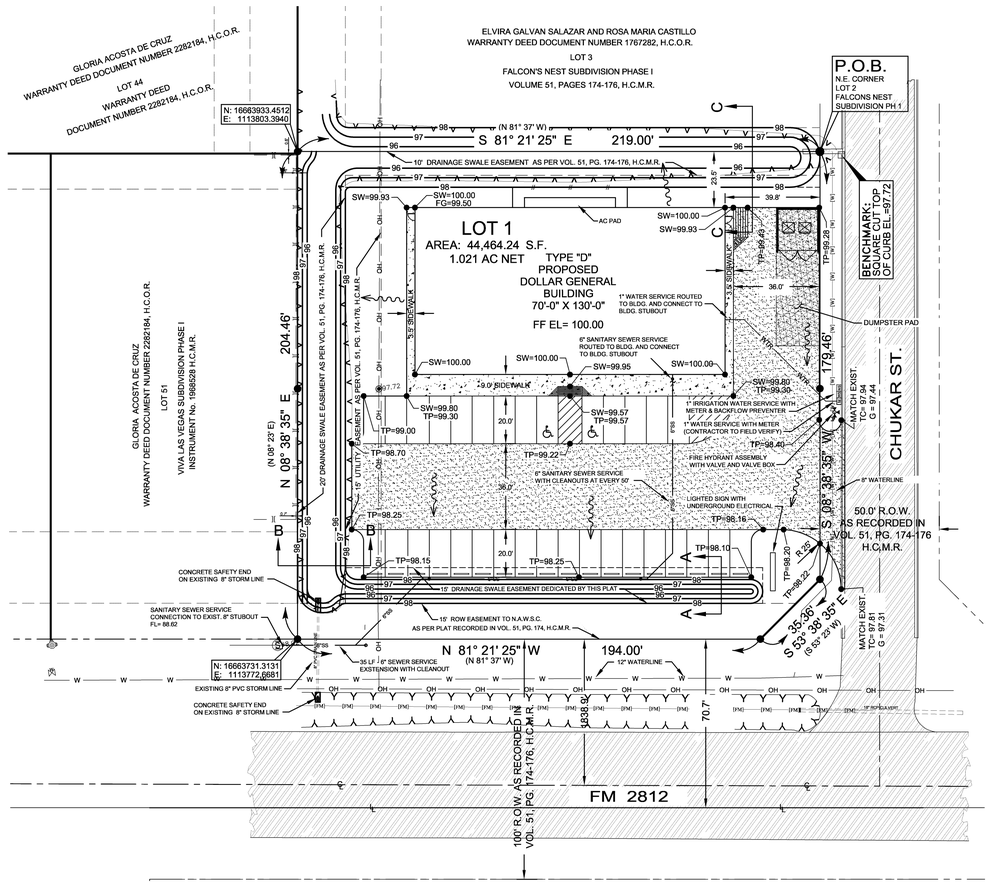

## TYPICAL SERVICE CONNECTION

GENERAL NOTES :

1. DRAWINGS INDICATE COPPER SERVICE LINES.
2. FOR P.V.C. SERVICE LINES REFER TO SMALLER TYPE NOTES.
3. ALL COMPRESSION OR PACK TYPE FITTINGS & JOINTS REQUIRE STAINLESS STEEL INSERTS OF REQUIRED SIZE.
4. WATER SERVICE CONNECTIONS CROSSING A STREET SHALL BE ENCASED IN A 2" P.V.C. SHC40 CASING. LENGTH OF CASING SHALL BE WIDTH OF STREET PLUS 10.0 FEET.

## TYPICAL WATER SERVICE CONNECTIONS

N.T.S.




## PROPOSED SITE & TOPOGRAPHICAL LAYOUT

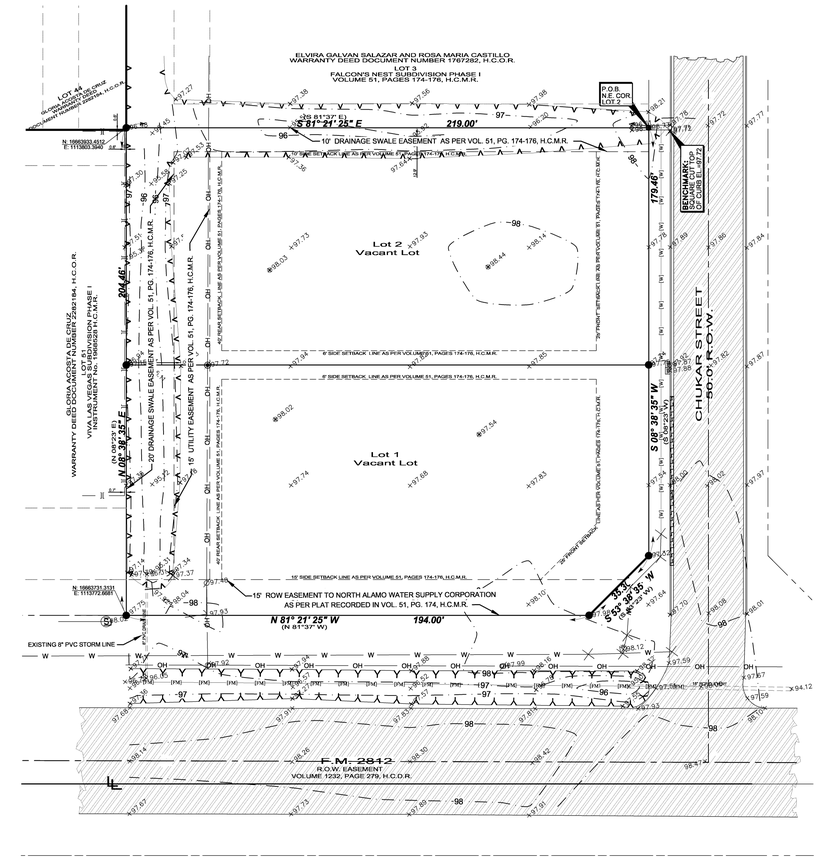
1 INCH = 30 FT.

## L E G E N D

- ● FOUND No.4 REBAR
- □ SET SQUARE CUT (BENCHMARK)
- H.C.O.R. - HIDALGO COUNTY OFFICIAL RECORDS
- H.C.M.R. - HIDALGO COUNTY MAP RECORDS
- P.O.B - POINT OF BEGINNING
- SF or SQ. FT. - SQUARE FEET
- R.O.W. - RIGHT OF WAY
- AC - ACRES
- W.D. DOC. NO - - WARRANTY DEED DOCUMENT NO.
- ( ) - RECORDED MAP CALLS
- — WTR — PROPOSED WATERLINE OR WATER SERVICE
- — OH — EXISTING OVERHEAD POWER LINES
- — R.D. — EXISTING BAR DITCH CENTERLINE
- —[W]— OR — W — EXISTING WATERLINE (LOCATION TO BE FIELD VERIFIED)
- — SS — EXISTING SANITARY SEWER LINE (LOCATION TO BE FIELD VERIFIED)
- —[FM]— EXISTING SANITARY SEWER FORCE MAIN
- ℄ - LOT LINE
- ℄ - CENTER LINE
- FL=74.65 PROPOSED FLOW LINE ELEVATION
- SW=74.65 PROPOSED TOP OF SIDEWALK ELEVATION
- TP=74.65 PROPOSED TOP OF PAVEMENT ELEVATION
- FG=74.65 PROPOSED FINISH GRADE ELEVATION
- NG=74.65 EXISTING NATURAL GROUND ELEVATION
- G=74.65 GUTTER ELEVATION
- DIRECTIONAL FLOW ARROW
- AC UNIT CONCRETE PAD




1 INCH = 30 FT.




## EXISTING SITE & TOPOGRAPHICAL LAYOUT


TBPE FIRM # F-1435
MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE
EDINBURG, TX 78541
PH: (956) 381-0981
FAX: (956) 381-1839
227 N. F.M. 3167
RIO GRANDE CITY, TX 78582
PH: (956) 487-8256
FAX: (956) 488-8591
ESTABLISHED 1947
www.meldenandhunt.com



X:\Land Development\Commercial\Hidalgo County\13120 - RSBR DG FM 2812\Autocad files\DWG\13120 - C- PLAT LOT.dwg 11/20/2013 4:56:52 PM, HP 7960.pc3

# HIDALGO COUNTY
# PLANNING DEPARTMENT

**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
## DATE: 03-04-2014

PROPOSED **AURORA VALLEY PHASE 3** SUBDIVISION, PRECINCT No. **1**

ENGINEER: **Melden & Hunt, Inc.** DEVELOPER: **Mike Rhodes**

☐ PRELIMINARY APPROVAL ☒ FINAL APPROVAL ☐ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: **72** ☒*SINGLE FAMILY ____ ☐*MULTI-FAMILY ____ ☐COMMERCIAL ____ ☐INSTITUTION

LOCATION DESCRIPTION: **North & South of Canton Rd approx. ½ mile East of Dillon Rd**

SUBDIVISION LIES WITHIN THE: ☒ **The rural area of the County**

DRAINAGE REPORT WAS APPROVED BY HCDD#1: **08-28-2013** PROPERTY LIES WITHIN FLOOD ZONE: **"C"** AS PER FEMA.

DRAINAGE DESIGN: **Drainage will be accomplished by storm drainage pipe system and by widening of the Drain Ditch along the North side of the subdivision development.**

ROAD R.O.W. DEDICATION: **20 feet on the North and South side of Canton Rd.**

H.C.R.O.W. FINAL APPROVED DATE: **02-14-2014** By **Roy Gonzalez** PCT. 1 R.O.W. AGENT

H.C.H.D. FINAL APPROVAL DATE: **02-04-14** By, **Elizardo "Chardo" Ramos** Environmental Health Division Manager

SEWER SYSTEM: ☒OSSF & SOIL ANALYSIS WERE CONDUCTED BY: **Jose A. Gonzalez**
☒OSSF HAVE BEEN INSTALLED AND INSPECTED BY HCHD ON: **02-04-14**

WATER SERVICE PROVIDER: **N.A.W.S.C.** LINE SIZE: **8"** LOCATION: **on the south side of Canton Rd**

H.C.O.E.C. FINAL APPROVED DATE: **02-14-2014**: By **Martin Ramirez, Environmental Compliance Coordinator**
☒**LARGE CONSTRUCTION**
*The applicant has submitted the required NOI as per Part II, Section E of the TPDES General Permit for Construction Activities (TXR150000) along with a copy of the Erosion Control Plan for the proposed project.*

PRELIMINARY APPROVAL FROM THE HIDALGO COUNTY COMMISSIONERS COURT ON: ***OCTOBER 02, 2013***

STAFF RECOMMENDS: ☒ **Final Approval** *subject to recommendations other departments*

* *This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules, Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*

# Map of
# AURORA VALLEY PHASE 3

BEING A RESUBDIVISION OF 50.427 ACRES,
CONSISTING OF
16.651 ACRES OUT OF LOT 36, 25.472 OUT OF LOT 37,
4.734 ACRES OUT OF LOT 38,
AND 3.570 ACRES OUT OF LOT 39
HILL-HALBERT SUBDIVISION,
REC. IN VOL. 1, PAGE 35, H.C.M.R.,
HIDALGO COUNTY, TEXAS.

METES AND BOUNDS DESCRIPTION

A TRACT OF LAND CONTAINING 50.427 ACRES SITUATED IN THE COUNTY OF HIDALGO, TEXAS, CONSISTING OF 16.651 ACRES OUT OF LOT 36, 25.472 ACRES OUT OF LOT 37, 4.734 ACRES OUT OF LOT 38, AND 3.570 ACRES OUT OF LOT 39, HILL-HALBERT SUBDIVISION, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 1, PAGE 35, HIDALGO COUNTY MAP RECORDS, SAID 49.51 ACRES ALSO BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF LOT 37, HILL-HALBERT SUBDIVISION FOR THE NORTHEAST CORNER OF THIS TRACT;

1. THENCE, SOUTH 08 DEGREES, 39 MINUTES, 27 SECONDS WEST, ALONG THE EAST LINES OF SAID LOTS 37 AND 38, AT A DISTANCE OF 1337.22 PASS THE SOUTHEAST CORNER OF LOT 37, THE NORTHEAST CORNER OF LOT 38 AND THE CENTERLINE OF CANTON ROAD (PROPOSED), CONTINUING A TOTAL DISTANCE OF 1664.67 FEET TO THE SOUTHEAST CORNER OF THIS TRACT;
2. THENCE, NORTH 81 DEGREES, 20 MINUTES, 33 SECONDS WEST, AT A DISTANCE OF 75.00 FEET PASS A No. 4 REBAR SET FOR THE WEST LINE OF HIDALGO COUNTY DRAINAGE DISTRICT No. 1 RIGHT-OF-WAY, CONTINUING A TOTAL DISTANCE OF 250.85 FEET TO AN INTERIOR CORNER OF THIS TRACT;
3. THENCE, SOUTH 89 DEGREES, 26 MINUTES, 38 SECONDS WEST, AT A DISTANCE OF 433.48 PASS THE WEST LINE OF SAID LOT 38 AND THE EAST LINE OF SAID LOT 39, CONTINUING A TOTAL DISTANCE OF 982.98 FEET TO A No. 4 REBAR FOUND FOR THE SOUTHWEST CORNER OF THIS TRACT ;
4. THENCE, NORTH 00 DEGREES, 33 MINUTES, 22 SECONDS WEST, ACROSS SAID LOTS 36 AND 39, ALONG THE EASTERN BOUNDARY LINE OF AURORA VALLEY PHASE 2 ACCORDING TO THE PLAT THEREOF RECORDED UNDER DOCUMENT 2404614, AT A DISTANCE OF 243.03 FEET PASS A No. 4 REBAR FOUND FOR THE PROPOSED SOUTH RIGHT-OF-WAY LINE OF CANTON ROAD/MILE 14 1/2, AT A DISTANCE OF 323.03 FEET PASS THE PROPOSED NORTH RIGHT-OF-WAY LINE, AT A DISTANCE OF 1528.03 PASS A No. 4 REBAR FOUND FOR THE SOUTH LINE OF A DONNA IRRIGATION DISTRICT RIGHT-OF-WAY, CONTINUING A TOTAL DISTANCE OF 1603.03 TO THE NORTHWEST CORNER OF THIS TRACT;
5. THENCE, NORTH 89 DEGREES, 26 MINUTES, 38 SECONDS EAST, ALONG THE NORTH LINE OF SAID LOTS 36 AND 37, AT A DISTANCE OF 549.50 FEET PASS THE NORTHEAST CORNER OF LOT 36 AND THE NORTHWEST CORNER OF LOT 37, CONTINUING A TOTAL DISTANCE OF 1497.13 FEET TO THE POINT OF BEGINNING, AND CONTAINING 50.427 ACRES OF LAND, MORE OR LESS.

SCALE: 1" = 100'

SCALE NOTE:
IF THIS BAR DOES NOT MEASURE 1", THE DRAWING IS NOT TO SCALE

BEARING BASIS: AS PER HIDALGO COUNTY COORDINATE SYSTEM NAD 83 (2011) EPOCH 2010 ELEVATION PER NAVD 88 (GEOID 2003)

## LEGEND

- SET REBAR WITH CAP STAMPED MELDEN AND HUNT INC.
- SET COTTON PICKER SPINDLE
- FOUND REBAR
- BENCH MARK-SQUARE CUT IN CONCRETE

THERE ARE 72 LOTS IN THIS SUBDIVISION.

| Curve Table | | | | | | |
|---|---|---|---|---|---|---|
| Curve # | Length | Radius | Delta | Chord Direction | Chord Length | Tangent |
| C1 | 143.09 | 4600.00 | 001° 46' 56" | N0° 20' 06"E | 143.09 | 71.55 |
| C2 | 177.64 | 400.00 | 025° 26' 44" | N77° 50' 00"W | 176.19 | 90.31 |
| C3 | 177.65 | 400.00 | 025° 26' 45" | S77° 50' 00"E | 176.19 | 90.31 |
| C4 | 75.77 | 50.00 | 086° 49' 53" | S17° 08' 25"E | 68.73 | 47.31 |
| C5 | 28.95 | 50.00 | 033° 10' 07" | S42° 51' 35"W | 28.54 | 14.89 |
| C6 | 28.95 | 50.00 | 033° 10' 07" | N43° 58' 19"W | 28.54 | 14.89 |
| C7 | 75.77 | 50.00 | 086° 49' 53" | N16° 01' 41"E | 68.73 | 47.31 |
| C8 | 61.09 | 50.00 | 070° 00' 00" | S25° 33' 22"E | 57.36 | 35.01 |
| C9 | 61.09 | 50.00 | 070° 00' 00" | S44° 26' 38"W | 57.36 | 35.01 |
| C10 | 61.09 | 50.00 | 070° 00' 00" | N65° 33' 22"W | 57.36 | 35.01 |
| C11 | 98.49 | 425.00 | 013° 16' 41" | N83° 55' 02"W | 98.27 | 49.47 |
| C12 | 90.25 | 425.00 | 012° 10' 03" | N71° 11' 39"W | 90.09 | 45.30 |
| C13 | 31.92 | 375.00 | 004° 52' 36" | S67° 32' 56"E | 31.91 | 15.97 |
| C14 | 88.50 | 375.00 | 013° 31' 17" | S76° 44' 52"E | 88.29 | 44.45 |
| C15 | 46.13 | 375.00 | 007° 02' 51" | S87° 01' 56"E | 46.10 | 23.09 |
| C16 | 55.51 | 375.00 | 008° 28' 55" | N86° 18' 55"W | 55.46 | 27.81 |
| C17 | 111.03 | 375.00 | 016° 57' 49" | N73° 35' 33"W | 110.62 | 55.92 |
| C18 | 29.75 | 425.00 | 004° 00' 40" | S67° 06' 58"E | 29.75 | 14.88 |
| C19 | 158.99 | 425.00 | 021° 26' 04" | S79° 50' 20"E | 158.07 | 80.44 |
| C20 | 46.31 | 50.00 | 053° 04' 16" | S55° 58' 46"W | 44.68 | 24.97 |
| C21 | 46.31 | 50.00 | 053° 04' 16" | N70° 56' 58"W | 44.68 | 24.97 |
| C22 | 46.31 | 50.00 | 053° 04' 17" | N17° 52' 42"W | 44.68 | 24.97 |
| C23 | 61.43 | 50.00 | 070° 23' 36" | N43° 51' 14"E | 57.64 | 35.27 |
| C24 | 61.43 | 50.00 | 070° 23' 36" | S65° 45' 10"E | 57.64 | 35.27 |
| C25 | 143.09 | 4575.00 | 001° 47' 31" | N0° 20' 24"E | 143.09 | 71.55 |
| C26 | 143.09 | 4625.00 | 001° 46' 22" | N0° 19' 49"E | 143.09 | 71.55 |
| C27 | 64.35 | 50.00 | 073° 44' 23" | S89° 26' 38"W | 60.00 | 37.50 |
| C28 | 64.35 | 50.00 | 073° 44' 23" | N89° 26' 38"E | 60.00 | 37.50 |

## INDEX TO SHEET OF AURORA VALLEY PHASE 3


SHEET 1: HEADING; INDEX; LOCATION MAP; MAP: LOT, STREETS AND EASEMENT LAYOUT, DESCRIPTION (METES AND BOUNDS); ENGINEER'S AND SURVEYOR'S CERTIFICATION; PRINCIPAL CONTACTS; REVISION NOTES.

SHEET 2: ETJ, PLAT NOTES AND RESTRICTIONS; OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION; IRRIGATION DISTRICT, H.C.D.D. No. 1, HIDALGO COUNTY R.O.W. DEPT., H.C. JUDGE AND H.C.H.D. CERTIFICATIONS; CLERK'S RECORDING CERTIFICATE; REVISION NOTES.

SHEET 3: ENGINEERING REPORT, INCLUDING DESCRIPTION OF WATER AND OSSF; ENGINEER'S CERTIFICATION (ENGLISH AND SPANISH); WATER DETAILS; REVISION NOTES.

SHEET 4: WATER AND OSSF LAYOUT; REVISION NOTES.

SHEET 5: MAP OF TOPOGRAPHY, STREET AND STORM DRAINAGE PLAN; STREET CONSTRUCTION DETAILS; REVISION NOTES.

SHEET 6: DRAINAGE REPORT INCLUDING DESCRIPTION OF DRAINAGE; STORM DRAINAGE CONSTRUCTION DETAILS; REVISION NOTES.


STATE OF TEXAS
COUNTY OF HIDALGO:

I, THE UNDERSIGNED, FRED L. KURTH, A REGISTERED PROFESSIONAL ENGINEER AND REGISTERED PROFESSIONAL LAND SURVEYOR, IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN GIVEN TO THIS PLAT, AND IS A TRUE AND ACCURATE REPRESENTATION OF THE SUBDIVISION OF THE LANDS HEREON DESCRIBED.

FRED L. KURTH, L.P.E. # 54151, R.P.L.S. # 4750
DATE SURVEYED: 07-09-12
DATE PREPARED: 06-10-2013
T-937, PG. 28 AND 32
REF. T-508, PG. 1-8
ENGINEERING JOB No. 13080.00
SURVEYING JOB No. 13080.08

STATE OF TEXAS — FRED L. KURTH — 54151 — LICENSED PROFESSIONAL ENGINEER

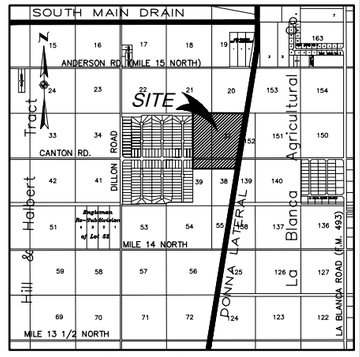
STATE OF TEXAS — REGISTERED — FRED L. KURTH — 4750 — PROFESSIONAL LAND SURVEYOR

LOCATION OF SUBDIVISION WITH RESPECT TO THE EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY:

AURORA VALLEY PHASE 3 IS LOCATED IN THE SOUTHEAST PART OF HIDALGO COUNTY, APPROXIMATELY 2100 FEET EAST OF DILLON ROAD , AND ON THE NORTH AND SOUTH SIDES OF CANTON ROAD (MILE 14 1/2 N. ROAD). THIS SUBDIVISION IS NOT WITHIN THE 3 OR THE 5-MILE E.T.J. OF ANY CITY UNDER LOCAL GOVERNMENT CODE § 212.001 AND FALLS WITHIN THE RURAL AREA OF THE COUNTY.

THIS SUBDIVISION FALLS WITHIN PRECINCT 1.

NOTE: THERE ARE 72 LOTS WITHIN THIS SUBDIVISION.




## LOCATION MAP

SCALE: 1" = 2000'

REVISION NOTES

SHEET 1 OF 6

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| 1 | 1-6 | COUNTY COMMENTS | 08/21/13 | |
| | | | | |
| | | | | |
| | | | | |

DRAWN BY: G.A.T. DATE: 06-10-2013
SURVEY, CHECKED BY: _____ DATE:
FINAL CHECK: _____ DATE:


TBPE FIRM # F-1435
MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE
EDINBURG, TX 78541
PH: (956) 381-0981
FAX: (956) 381-1839
ESTABLISHED 1947
227 N. F.M. 3167
RIO GRANDE CITY, TX 78582
PH: (956) 487-8256
FAX: (956) 488-8591
www.meldenandhunt.com


PRINCIPAL CONTACTS

| | NAME | ADDRESS | CITY & ZIP | PHONE | FAX |
|---|---|---|---|---|---|
| OWNER: | M.L. RHODES ENTERPRISES, LTD | 2500 S. BENTSEN PALM DRIVE, STE. 267-B | MISSION, TX. 78572 | (956) 287-2800 | (956) 287-2804 |
| ENGINEER: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX 78539 | (956) 381-0981 | (956) 381-1839 |
| SURVEYOR: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX 78539 | (956) 381-0981 | (956) 381-1839 |

GENERAL PLAT NOTES & RESTRICTIONS:

1. FLOOD ZONE STATEMENT:
FLOOD ZONE DESIGNATION: ZONE "C" (NO SHADING). ZONE "C" IS DEFINED AS AREA OF MINIMAL FLOODING. PANEL NO. 480334 0425 C. MAP REVISED: NOVEMBER 16, 1982. THE AREAS WITHIN THE PROPOSED STREET RIGHT-OF-WAY ARE WITHIN THE 100-YEAR FLOOD PLAIN. THE LOCAL FLOOD PLAIN ADMINISTRATOR IDENTIFIES NO OTHER AREA WITHIN THE PROPOSED SUBDIVISION TO BE WITHIN THE 100-YEAR FLOOD PLAIN. CONSTRUCTION OF RESIDENTIAL HOUSING WITHIN ANY AREA OF THIS SUBDIVISION THAT IS IN THE 100-YEAR FLOOD PLAIN IS PROHIBITED UNLESS THE HOUSING QUALIFIES FOR INSURANCE UNDER THE NATIONAL FLOOD INSURANCE ACT OF 1968 (42 U.S.C. SECTIONS 4001 THROUGH 4127).

2. SETBACKS:

| | |
|---|---|
| FRONT: | 40.00 FEET ALONG CANTON ROAD( MILE 14 1/2 N. RD.). |
| FRONT: | 25.00 FEET (INTERNAL LOTS) |
| REAR: | 15.00 FEET, OR GREATER FOR EASEMENT. |
| SIDE: | 6.00 FEET, OR GREATER FOR EASEMENT. |
| CUL-DE-SAC: | 15.00 FEET, OR GREATER FOR EASEMENT. |
| CORNER SIDE: | 20.00 FEET, OR GREATER FOR EASEMENT. |

GARAGE FRONT SETBACK: 18 FEET, OR GREATER IF EASEMENT.

3. MINIMUM FINISH FLOOR NOTE:
MINIMUM FINISH FLOOR ELEVATION SHALL BE 18" ABOVE CENTER OF STREET MEASURED AT THE CENTER OF EACH LOT, OR 18" ABOVE NATURAL GROUND, WHICHEVER IS GREATER. ELEVATION CERTIFICATE MAY BE REQUIRED FOR LOTS LOCATED OUTSIDE A DESIGNATED FLOOD ZONE AT THE TIME FOR APPLICATION FOR CONSTRUCTION TO VERIFY PRE AND POST CONSTRUCTION FINISH FLOOR ELEVATIONS. AN ELEVATION CERTIFICATE SHALL BE REQUIRED FOR ALL LOTS WITHIN A DESIGNATED FLOOD ZONE AT THE TIME FOR A DEVELOPMENT PERMIT APPLICATION.

4. BENCHMARK NOTE:
BM # 1: SQUARE CUT ON SET TOP OF CONCRETE HEADWALL LOCATED 9.5 FEET SOUTH FROM THE SOUTHWEST CORNER OF THIS SUBDIVISION AND ON THE EAST SIDE OF DILLON ROAD. GEODETIC G.P.S. TEXAS STATE PLANE GRID COORDINATE SYSTEM NAD 83 TEXAS SOUTH 4205 ELEVATION PER NAVD 88 (GEOID 2003) N= 16620089.5400 E= 1129280.3450 ELEV.=79.70

BM # 2: SET 2" DIA. ALUM. DISK AT BASE OF GUY WIRE LOCATED 1388 FEER EAST FROM DILLON ROAD AND ALONG CANTON ROAD (MILE 14 1/2). GEODETIC G.P.S. TEXAS STATE PLANE GRID COORDINATE SYSTEM NAD 83 TEXAS SOUTH 4205 ELEVATION PER NAVD 88 (GEOID 2003) N= 16621476.2700 E= 1130685.2860 ELEV.=74.04

BM # 3: SET COTTON PICKER SPINDLE WITHIN ASPHALT OF CANTON ROAD LOCATED APPROXIMATELY 31.5 FEET SOUTH AND 8.9 FEET WEST OF THE SOUTHWEST CORNER OF LOT 209, AURORA VALLEY PHASE 3. GEODETIC G.P.S. TEXAS STATE PLANE GRID COORDINATE SYSTEM NAD 83 TEXAS SOUTH 4205 ELEVATION PER NAVD 88 (GEOID 2003)
N= 16621452.911 E= 1131330.003 ELEV.=74.23

5. DRAINAGE:
IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 AND HIDALGO COUNTY REQUIREMENTS, THIS DEVELOPMENT WILL BE REQUIRED TO DETAIN A TOTAL OF 103.007 CUBIC FEET (2.365 ACRE-FEET) OF STORM WATER RUNOFF. DRAINAGE DETENTION IN ACCORDANCE WITH THE LOCAL REQUIREMENTS WILL BE ACCOMPLISHED AS INDICATED IN THE DRAINAGE REPORT.

6. GENERAL NOTE FOR SINGLE FAMILY RESIDENCES:
NO MORE THAN ONE-SINGLE FAMILY DETACHED DWELLING SHALL BE LOCATED ON EACH LOT OF THIS SUBDIVISION (ANY OTHER USE SHALL REQUIRE PLANNING DEPARTMENT, HEALTH DEPARTMENT, OFFICE OF ENVIRONMENTAL AND COMPLIANCE, AND FIRE MARSHALL APPROVAL). APPLICATIONS FOR CONSTRUCTION ARE REQUIRED PRIOR TO OCCUPYING THE LOT. NO COMMERCIAL USE WILL BE ALLOWED FOR LOTS 212 THROUGH 243 AND LOTS 244 THROUGH 259.

7. NO STRUCTURE SHALL BE PERMITTED OVER ANY EASEMENT. EASEMENTS SHALL BE KEPT CLEAR OF FENCES BUILDINGS, SHEDS, SHRUBS, TREES AND OTHER PLANTINGS (EXCEPT LOW, LESS THAN 18 INCHES MATURE HEIGHT, GROUND COVER, GRASS, OR FLOWERS) AND OTHER OBSTRUCTIONS TO THE OPERATIONS AND MAINTENANCE OF THE EASEMENT.

8. EACH PURCHASE CONTRACT MADE BETWEEN A SUBDIVIDER AND PURCHASER OF A LOT IN THIS SUBDIVISION SHALL CONTAIN A STATEMENT DESCRIBING HOW AND WHEN WATER, SEWER, ELECTRICITY, AND GAS SERVICES WILL BE MADE AVAILABLE TO THE SUBDIVISION.

9. CULVERT PIPES REQUIRED FOR EACH DRIVEWAY ON LOTS 209 THROUGH 211, AND 260 THROUGH 280, AS REQUIRED BY HIDALGO COUNTY. THE PURCHASER OF EACH LOT SHALL BE RESPONSIBLE TO INSTALL DRIVEWAY CULVERTS OF REINFORCED CONCRETE OF NO LESS THAN 15 INCHES IN DIAMETER AND 24 FEET IN LENGTH.

10. RHODES ENTERPRISES, LTD, OWNER AND SUBDIVIDER OF AURORA VALLEY PHASE 3, RETAINS AN EASEMENT UPON EACH LOT FOR THE PURPOSE OF INSTALLING AN APPROVED OSSF ON THE LOTS AS INDICATED ON SHEET No. 4 OF THIS PLAT.

11. ON-SITE SEWAGE FACILITIES (OSSF) NOTE: THIS SUBDIVISION SHALL USE ON-SITE SEWAGE FACILITIES IN ACCORDANCE WITH T.C.E.Q. AND HIDALGO COUNTY REGULATIONS FOR SEWAGE DISPOSAL. THE SUBDIVIDER IS RESPONSIBLE FOR PROVIDING AN OSSF ON ALL LOTS.

12. THERE ARE NO WATER WELLS WITHIN 150 FEET FROM THE BOUNDARIES OF THIS SUBDIVISION.

13. ALL PUBLIC UTILITY EASEMENTS DEDICATED BY THIS PLAT SHALL HAVE A MINIMUM WIDTH OF 15.00 FEET, AS PER THE HIDALGO COUNTY MODEL SUBDIVISION RULES.

14. AN OFF-STREET PARKING LOT SITE PLAN AND DRAINAGE PLAN APPROVED BY THE HIDALGO COUNTY PLANNING DEPARTMENT AND THE OFFICE OF ENVIRONMENTAL COMPLIANCE SHALL BE REQUIRED FOR SCHOOLS, COMMERCIAL INDUSTRIAL USE AT THE TIME OF APPLICATION FOR CONSTRUCTION PRIOR TO ISSUANCE OF BUILDING AND/OR DEVELOPMENT PERMIT. NO WATER OR LIGHT CLEARANCES SHALL BE ISSUED UNTIL THE SITE PLAN, DRAINAGE PLAN AND OSSF PLAN ARE APPROVED AND PROPOSED IMPROVEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH COUNTY AND STATE STANDARDS.

RIGHT OF WAY EASEMENT

KNOWN ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED OWNERS OF THE PROPERTY SHOWN ON THIS PLAT, THEIR SUCCESSORS, ASSIGNS, AND TRANSFEREES (HEREINAFTER CALLED "GRANTOR" WHETHER ONE OR MORE PERSONS ARE NAMED), IN CONSIDERATION OF ONE DOLLAR ($1.00) AND OTHER GOOD AND VALUABLE CONSIDERATION PAID BY NORTH ALAMO WATER SUPPLY CORPORATION, (HEREINAFTER CALLED "GRANTEE"), THE RECEIPT AND SUFFICIENCY OF WHICH IS HEREBY ACKNOWLEDGED, DOES HEREBY GRANT, BARGAIN, SELL, TRANSFER AND CONVEY TO SAID GRANTEE, ITS SUCCESSORS AND ASSIGNS, A PERPETUAL EASEMENT WITH THE RIGHT TO ERECT, CONSTRUCT, INSTALL AND LAY AND THEREAFTER USE, OPERATE, INSPECT, REPAIR, MAINTAIN, REPLACE AND REMOVE WATER DISTRIBUTION LINES AND APPURTENANCES OVER AND ACROSS LANDS SHOWN ON THIS PLAT, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT LANDS FOR THE PURPOSE FOR WHICH THE ABOVE-MENTIONED RIGHTS ARE GRANTED. THE EASEMENT HEREBY GRANTED SHALL NOT EXCEED 15' IN WIDTH, AND GRANTEE IS HEREBY AUTHORIZED TO DESIGNATE THE COURSE OF THE EASEMENT HEREIN CONVEYED EXCEPT THAT WHERE PIPELINE(S) IS INSTALLED, THE EASEMENT HEREIN GRANTED SHALL BE LIMITED TO A STRIP OF LAND 15' IN WIDTH THE CENTER LINE THEREOF BEING THE PIPELINE INSTALLED.

IN THE EVENT THE EASEMENT HEREBY GRANTED ABUTS ON A PUBLIC ROAD AND THE COUNTY OR STATE HEREAFTER WIDENS OR RELOCATES THE PUBLIC ROAD SO AS TO REQUIRE THE RELOCATION OF THIS WATER LINE AS INSTALLED, GRANTOR FURTHER GRANTS TO GRANTEE AN ADDITIONAL EASEMENT OVER AND ACROSS THE LAND DESCRIBED ABOVE FOR THE PURPOSE OF LATERALLY RELOCATING SAID WATER LINE AS MAY BE NECESSARY TO CLEAR THE ROAD IMPROVEMENTS, WHICH EASEMENT HEREBY GRANTED SHALL BE LIMITED TO A STRIP OF LAND 15' IN WIDTH THE CENTER LINE THEREOF BEING THE PIPELINE AS RELOCATED.

THE CONSIDERATION RECITED HEREIN SHALL CONSTITUTE PAYMENT IN FULL FOR ALL DAMAGES SUSTAINED BY GRANTOR BY REASON OF THE INSTALLATION, MAINTENANCE, REPAIR, REPLACEMENT AND RELOCATION OF THE STRUCTURES REFERRED TO HEREIN. THIS AGREEMENT TOGETHER WITH OTHER PROVISIONS OF THIS GRANT SHALL CONSTITUTE A COVENANT RUNNING WITH THE LAND FOR THE BENEFIT OF THE GRANTEE, ITS SUCCESSORS, AND ASSIGNS. THE GRANTOR COVENANTS THAT HE/SHE IS THE OWNER OF THE ABOVE-DESCRIBED LANDS AND THAT SAID LANDS ARE FREE AND CLEAR OF ALL ENCUMBRANCES AND LIENS, EXCEPT THE FOLLOWING:

THE EASEMENT CONVEYED HEREIN WAS OBTAINED OR IMPROVED THROUGH FEDERAL FINANCIAL ASSISTANCE. THIS EASEMENT IS SUBJECT TO THE PROVISIONS OF THE TITLE VI OF THE CIVIL RIGHTS ACT OF 1964 AND THE REGULATIONS ISSUED PURSUANT THERETO FOR SO LONG AS THE EASEMENT CONTINUES TO BE USED FOR THE SAME OR SIMILAR PURPOSE FOR WHICH FINANCIAL ASSISTANCE WAS EXTENDED OR FOR SO LONG AS THE GRANTEE OWNS IT, WHICHEVER IS LONGER.

IN WITNESS WHEREOF, THE SAID GRANTOR HAS EXECUTED THIS INSTRUMENT THE _____ DAY OF

_____, 20 _____.

_____
(GRANTOR'S SIGNATURE)

ACKNOWLEDGMENT

THE STATE OF TEXAS §

COUNTY OF HIDALGO §

BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS DAY PERSONALLY APPEARED _____ KNOWN TO ME TO BE THE PERSON(S) WHOSE NAME(S) IS (ARE) SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE (SHE) (THEY) EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE _____ DAY OF _____, 20 _____.

_____
NOTARY PUBLIC, STATE OF TEXAS

MY COMMISSION EXPIRES:

# Map of
# AURORA VALLEY PHASE 3

BEING A RESUBDIVISION OF 50.427 ACRES,
CONSISTING OF
16.651 ACRES OUT OF LOT 36, 25.472 OUT OF LOT 37,
4.734 ACRES OUT OF LOT 38,
AND 3.570 ACRES OUT OF LOT 39
HILL-HALBERT SUBDIVISION,
REC. IN VOL. 1, PAGE 35, H.C.M.R.,
HIDALGO COUNTY, TEXAS.

STATE OF TEXAS
COUNTY OF HIDALGO:

OWNER'S DEDICATION, CERTIFICATION AND ATTESTATION

I, M.L. RHODES OWNER OF THE 49.51-ACRE TRACT OF LAND ENCOMPASSED WITHIN THE PROPOSED "AURORA VALLEY PHASE 3", HEREBY SUBDIVIDE THE LAND AS DEPICTED IN THIS SUBDIVISION PLAT AND DEDICATE TO THE PUBLIC USE THE STREE(S), PARK, AND EASEMENTS SHOWN HEREIN.
I CERTIFY THAT I HAVE COMPLIED WITH THE REQUIREMENTS OF TEXAS LOCAL GOVERNMENT CODE § 232.032 AND THAT

(A) THE WATER QUALITY AND CONNECTIONS TO THE LOTS MEET, OR WILL MEET THE MINIMUM STATE STANDARDS;
(B) SANITARY SEWER CONNECTIONS TO THE LOTS MEET, OR WILL MEET THE MINIMUM REQUIREMENTS OF THE STATE STANDARDS;
(C) ELECTRICAL CONNECTIONS PROVIDED TO THE LOTS MEET, OR WILL MEET THE MINIMUM STATE STANDARDS; AND
(D) GAS CONNECTIONS, IF AVAILABLE, PROVIDED TO THE LOTS MEET, OR WILL MEET THE MINIMUM STATE STANDARDS.

I ATTEST THAT THE MATTERS ASSERTED IN THIS PLAT ARE TRUE AN COMPLETE.

_____ _____
MIKE RHODES, PRESIDENT DATE:
RHODES ENTERPRISES, INC.
2500 S. BENTSEN PALM DRIVE, STE. 267B
MISSION, TEXAS, 78575

STATE OF TEXAS
COUNTY OF HIDALGO:

BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, ON THIS DAY PERSONALLY APPEARED "M.L. RHODES" PROVED TO ME THROUGH HIS TEXAS DEPARTMENT OF PUBLIC SAFETY DRIVERS LICENSE TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, WHO, BEING BY ME, FIRST DULY SWORN AND DECLARED THAT THE STATEMENTS THEREIN ARE TRUE AND CORRECT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREBY EXPRESSED.
GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS THE

_____, DAY OF_____, 20 _____ .

_____.
NOTARY PUBLIC, HIDALGO COUNTY, TEXAS
MY COMMISSION EXPIRES:

HIDALGO COUNTY
CERTIFICATE OF PLAT APPROVAL

I, THE UNDERSIGNED, CERTIFY THAT THIS PLAT OF AURORA VALLEY PHASE 3 WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT ON:

_____, 20 _____

_____ _____
ENVIRONMENTAL HEALTH DIVISION MANAGER DATE

HIDALGO COUNTY DRAINAGE DISTRICT NO.1 HEREBY CERTIFIES THAT THE DRAINAGE PLANS FOR THIS SUBDIVISION COMPLY WITH THE MINIMUM STANDARDS OF THE DISTRICT ADOPTED UNDER TEX. WATER CODE 49.211 (c). THE DISTRICT HAS NOT REVIEWED AND DOES NOT CERTIFY THAT THE DRAINAGE STRUCTURES DESCRIBED ARE APPROPRIATE FOR THE SPECIFIC SUBDIVISION, BASED ON GENERALLY ACCEPTED ENGINEERING CRITERIA. IT IS THE RESPONSIBILITY OF THE DEVELOPER OF THE SUBDIVISION AND ITS ENGINEER TO MAKE THESE DETERMINATIONS.

HIDALGO COUNTY DRAINAGE DISTRICT No. 1

BY: _____
_____

THIS PLAT APPROVED BY THE DONNA IRRIGATION DISTRICT No. 1

ON THIS THE _____ DAY OF _____ ,20 _____

ATTEST:

_____
PRESIDENT

_____
SECRETARY

NOTE: DONNA IRRIGATION DISTRICT No. 1 WILL NOT BE RESPONSIBLE FOR DRAINAGE OR DELIVERY OF WATER TO ANY LOT IN THIS SUBDIVISION.

HIDALGO COUNTY
CERTIFICATE OF PLAT APPROVAL
UNDER LOCAL GOVERNMENT CODE § 232.028(A)

WE, THE UNDERSIGNED, CERTIFY THAT THIS PLAT OF AURORA VALLEY PHASE 3 WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY COMMISSIONERS COURT ON: _____ ,20 _____

_____ _____
HIDALGO COUNTY JUDGE DATE

ATTEST:

_____ _____
HIDALGO COUNTY CLERK DATE

HIDALGO COUNTY
CERTIFICATE OF PLAT APPROVAL

I, THE UNDERSIGNED, CERTIFY THAT THIS PLAT OF AURORA VALLEY PHASE 3 WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY RIGHT-OF-WAY DEPARTMENT ON: _____ , 20 _____

_____ _____
HIDALGO COUNTY RIGHT-OF-WAY DIRECTOR DATE

TBPE FIRM # F-1435
MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE
EDINBURG, TX 78541
PH: (956) 381-0981
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FAX: (956) 488-8591
www.meldenandhunt.com

FILE FOR RECORD IN
HIDALGO COUNTY
ARTURO GUAJARDO JR.
HIDALGO COUNTY CLERK

ON: _____ AT _____ AM/PM

DOCUMENT NUMBER _____

OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS

BY: _____ DEPUTY

REVISION NOTES



| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| 1 | 1-6 | COUNTY COMMENTS | 08/21/13 | |
| | | | | |
| | | | | |
| | | | | |

DRAWN BY: G.A.T. DATE: 06-10-2013

SURVEY, CHECKED BY: _____ DATE:

FINAL CHECK: _____ DATE:

# AURORA VALLEY PHASE 3

BEING A RESUBDIVISION OF 50.427 ACRES,
CONSISTING OF
16.651 ACRES OUT OF LOT 36, 25.472 OUT OF LOT 37,
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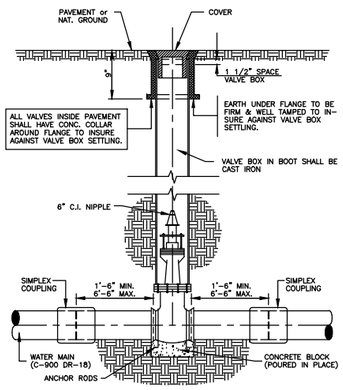
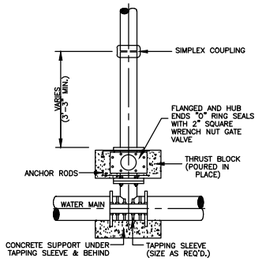



TYPICAL VALVE and VALVE BOX INSTALLATION

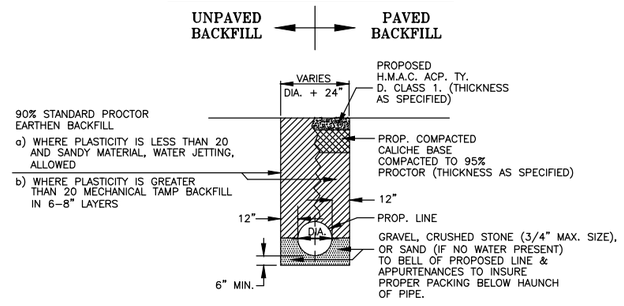
N.T.S.




TAPPING SLEEVE and VALVE INSTALLATION

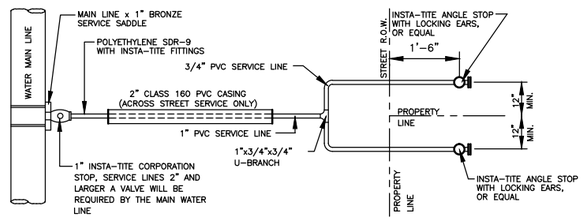
N.T.S.

## WATER DETAILS

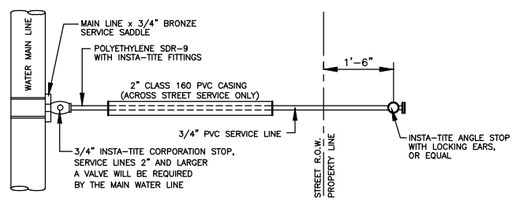



## PIPE BEDDING DETAILS

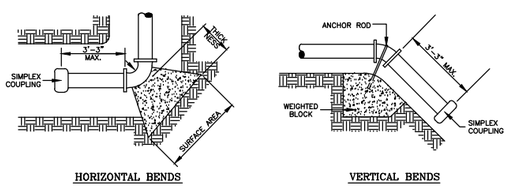
N.T.S.




## DUAL WATER SERVICE CONNECTION




## SINGLE WATER SERVICE CONNECTION




HORIZONTAL BENDS | VERTICAL BENDS | HYDRANT BURYS | TEES & DEAD ENDS

THRUST BLOCK DETAILS

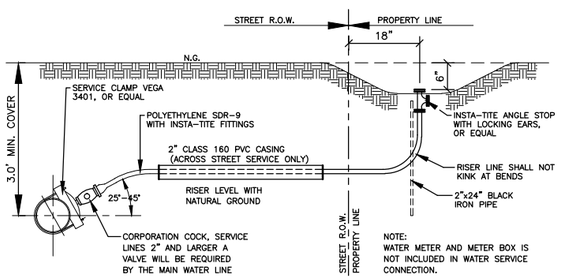
N.T.S.

**THRUST BLOCK SIZE**

| DIAMETER OF PIPE INCHES | HORIZONTAL BEND SURFACE AREA SQ. FT. | HORIZONTAL BEND THICKNESS INCHES | WEIGHT AT VERTICAL BENDS – lbs. |
|---|---|---|---|
| 22 1/2 BENDS | | | |
| 6 OR LESS | 2 | 8 | 1,700 |
| 8 | 3 | 12 | 3,000 |
| 10 | 3.5 | 12 | 4,500 |
| 12 | 4 | 14 | 6,800 |
| 14 | 5 | 18 | 9,000 |
| 16 | 6 | 18 | 11,800 |
| 45° BENDS | | | |
| 6 OR LESS | 4 | 12 | 3,200 |
| 8 | 5 | 14 | 5,800 |
| 10 | 6 | 18 | 9,000 |
| 12 | 7 | 18 | 13,000 |
| 14 | 8 | 24 | 17,000 |
| 16 | 11.5 | 24 | 23,200 |
| 90° BENDS | | | |
| 6 OR LESS | 6 | 12 | 8,000 |
| 8 | 8 | 18 | 10,700 |
| 10 | 10 | 18 | 15,700 |
| 12 | 12 | 18 | 24,000 |
| 14 | 18 | 24 | 32,600 |
| 16 | 21 | 24 | 42,700 |
| TEES & DEAD ENDS | | | |
| 6 OR LESS | 3 | 12 | ----- |
| 8 | 4 | 15 | ----- |
| 10 | 6 | 18 | ----- |
| 12 | 8.5 | 18 | ----- |
| 14 | 11.5 | 24 | ----- |
| 16 | 15 | 24 | ----- |

GENERAL NOTES :

1. ALL VALVES SHOWN ARE MINIMUM FOR A HYDROSTATIC PRESSURE OF 150 P.S.I. AND A SOIL RESISTANCE OF 2,000 LBS./SQ.FT WITH PIPELINE HAVING A MINIMUM OF 30" OF COVER.
2. THE CONTRACTOR SHALL CONSIDER REDUCTIONS OF THRUST BLOCK SURFACE AREA UPON SUBMITTAL OF APPROVED SOIL RESISTANT TEST RESULTS GREATER THAN 2000 LBS./SQ.FT.
3. THE LOCATION OF THRUST BLOCKS DEPENDS UPON THE DIRECTION OF THRUST AND TYPE OF FITTINGS.




## TYPICAL WATER SERVICE CONNECTION ELEVATION

GENERAL NOTES :

1. DRAWINGS INDICATE COPPER SERVICE LINES.
2. FOR P.V.C. SERVICE LINES REFER TO SMALLER TYPE NOTES.
3. ALL COMPRESSION OR PACK TYPE FITTINGS & JOINTS REQUIRE STAINLESS STEEL INSERTS OF REQUIRED SIZE.
4. WATER SERVICE CONNECTIONS CROSSING A STREET SHALL BE ENCASED IN A 2" P.V.C. SHC40 CASING. LENGTH OF CASING SHALL BE WIDTH OF STREET PLUS 10.0 FEET.

TYPICAL WATER SERVICE CONNECTIONS

N.T.S.

FINAL WATER AND SEWER ENGINEERING REPORT FOR AURORA VALLEY PHASE 3
BY: FRED L. KURTH, P.E. #54151
WATER SUPPLY: DESCRIPTION, COST, AND OPERABILITY DATE:

AURORA VALLEY PHASE 3 WILL BE PROVIDED WITH POTABLE WATER BY NORTH ALAMO WATER SUPPLY CORPORATION (N.A.W.S.C.). THE SUBDIVIDER AND N.A.W.S.C. HAVE ENTERED INTO A CONTRACT IN WHICH N.A.W.S.C. HAS PROMISED TO PROVIDE SUFFICIENT WATER TO THE SUBDIVISION FOR AT LEAST 30 YEARS AND N.A.W.S.C HAS PROVIDED DOCUMENTATION TO SUFFICIENTLY ESTABLISH THE LONG TERM QUANTITY AND QUALITY OF THE AVAILABLE WATER SUPPLIES TO SERVE THE FULL DEVELOPMENT OF THIS SUBDIVISION.

N.A.W.S.C. HAS AN EXISTING 8" DIAMETER WATER LINE RUNNING ALONG THE SOUTH SIDE OF CANTON ROAD. THE WATER SYSTEM FOR AURORA VALLEY PHASE 3 CONSISTS OF A 8" DIAMETER WATER LINE THAT TAPS INTO THE EXISTING 8" LINE. THIS 8" LINE THEN RUNS NORTH AND SOUTH ALONG THE WEST SIDE OF HARMONIA DRIVE RIGHT-OF-WAY. ANOTHER 8" LINE RUNS NORTH AND SOUTH ALONG THE WEST SIDE OF LA CLARIDAD DRIVE RIGHT-OF-WAY TAPPING INTO THE EXISTING 8" LINE ON THE SOUTH SIDE OF CANTON ROAD. THIS SYSTEM IS LOOPED BY AN 8" LINE THAT RUNS EAST AND WEST ALONG THE NORTH SIDE OF ESPACIO SANTO DRIVE TIE-ING INTO THE LINES ALONG HARMONIA DRIVE AND LA CLARIDAD DRIVE.

WATER DISTRIBUTION FOR THE AURORA VALLEY PHASE 3 CONSISTS OF TWENTY-EIGHT -1" DIAMETER DUAL SERVICE LINES RUN TO PAIRS OF LOTS BEFORE SPLITTING INTO ¾" DIAMETER SERVICE LINES AND SIXTEEN -¾" DIAMETER SINGLE SERVICE LINES. SAID SERVICES TERMINATE AT THE WATER METER BOXES FOR EACH LOT. THE 8" LINE, THE DUAL SERVICES AND ¾" SINGLE SERVICES, AND THE METER BOXES HAVE ALREADY BEEN INSTALLED, AT A TOTAL COST OF $176,480.00, OR $2,451.11 PER LOT. IN ADDITION, THE SUBDIVIDER HAS PAID N.A.W.S.C. THE SUM OF $27,000.00, WHICH COVERS THE $375.00 COST PER LOT AS STATED IN THE 30 YEAR WATER SERVICE AGREEMENT WHICH SUM REPRESENTS THE TOTAL COST OF WATER METER, RIGHTS ACQUISITION FEES, AND ALL MEMBERSHIP OR OTHER FEES ASSOCIATED WITH CONNECTING THE INDIVIDUAL LOTS IN THE SUBDIVISION TO N.A.W.S.C. UPON REQUEST BY THE LOT OWNER, N.A.W.S.C. WILL PROMPTLY INSTALL AT NO CHARGE THE WATER METER FOR THAT LOT. THE SUBDIVIDER HAS INSTALLED 6 FIRE HYDRANTS AT A UNIT COST OF $2,500.00 FOR A TOTAL COST OF $15,000.00. THE ENTIRE WATER FACILITIES HAVE BEEN APPROVED AND ACCEPTED BY N.A.W.S.C. AND SAID DISTRIBUTION SYSTEM IS OPERABLE AS OF THE DATE OF THE RECORDING OF THE PLAT

SEWAGE FACILITIES DESCRIPTION; COST AND OPERABILITY DATES
SEWAGE FROM AURORA VALLEY PHASE 3 SUBDIVISION WILL BE TREATED BY INDIVIDUAL ON-SITE SEWAGE FACILITIES ("OSSF") CONSISTING OF A STANDARD DESIGN DUAL COMPARTMENT SEPTIC TANK AND A DRAIN FIELD ON EACH LOT. THE UNDERSIGNED PROFESSIONAL ENGINEER HAS EVALUATED THE SUITABILITY OF THE SUBDIVISION SITE FOR OSSF AND SUBMITTED A REPORT CONCLUDING THAT THE SITE IS SUITABLE FOR OSSF. THE REPORT WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT. EACH LOT HAS ADEQUATE AREA FOR A REPLACEMENT DRAIN FIELD.

SOIL EVALUATION REPORT:
EACH LOT IN THE PROPOSED SUBDIVISION IS AT LEAST 1/2 ACRE IN SIZE. THE NATURAL RESOURCE CONSERVATION SERVICE SOIL SURVEY BOOK INDICATED A SANDY LOAM SOIL FOR THE AREA. AT LEAST TWO SOIL EXCAVATIONS WERE PERFORMED ON THE SITE, AT OPPOSITE ENDS OF THE PROPOSED DISPOSAL AREA. (ADDITIONAL BORINGS WERE UNNECESSARY BECAUSE THE SOILS ARE VERY UNIFORM WITHIN THIS LIMIT AREA). THE SOIL IS A UNIFORM SANDY LOAM EXTENDING UP TO 36" BELOW THE BOTTOM OF ANY PROPOSED EXCAVATIONS. THERE IS NO INDICATION OF GROUND WATER OR A RESTRICTIVE LAYER WITHIN 24" OF BOTTOM OF THE PROPOSED EXCAVATIONS. THE SUBDIVISION DRAINS WELL.

THE COST TO INSTALL A SEPTIC SYSTEM ON AN INDIVIDUAL LOT IS 1,145.00, INCLUDING THE COST FOR THE REQUIRED PERMIT AND LICENSE. ALL OSSFS HAVE BEEN INSTALLED AS OF THE TIME OF APPLICATION FOR FINAL PLAT APPROVAL AT A TOTAL COST OF $82,4400.00. THE HIDALGO COUNTY HEALTH DEPARTMENT HAS INSPECTED AND APPROVED THE INSTALLATION OF ALL OSSF ON DATE GO HERE.

ENGINEER CERTIFICATION:
BY MY SIGNATURE BELOW, I CERTIFY THAT THE WATER AND SEWAGE SERVICE FACILITIES DESCRIBED ABOVE ARE IN COMPLIANCE WITH THE MODEL RULES ADOPTED UNDER SECTION 16.343, WATER CODE. I CERTIFY THAT THE COSTS TO INSTALL THE WATER AND THE CONSTRUCTED ON-SITE SEWAGE FACILITIES, DISCUSSED ABOVE, ARE AS FOLLOWS:

WATER FACILITIES – THESE FACILITIES FULLY CONSTRUCTED, WITH THE INSTALLATION OF WATER METERS, WILL COST A GRAND TOTAL OF $218,480.00 WHICH EQUALS TO $3,034.44 PER LOT.

SEWAGE FACILITIES – SEPTIC SYSTEM IS ESTIMATED TO COST $1,145.00 PER LOT (ALL INCLUSIVE), FOR A TOTAL OF $82,440.00 FOR THE ENTIRE SUBDIVISION.

_____ _____
ENGINEER'S SIGNATURE DATE

STATE OF TEXAS
FRED L. KURTH
54151
LICENSED PROFESSIONAL ENGINEER

COST ESTIMATES:

| | | |
|---|---|---|
| PAVING IMPROVEMENTS : | $ | 402,087.55 |
| DRAINAGE IMPROVEMENTS : | $ | 114,478.42 |
| WATER DISTRIBUTION : | $ | 191,480.00 |
| O.S.S.F : | $ | 82,440.00 |
| TOTAL : | $ | 780,485.97 |

FINAL WATER AND SEWER ENGINEERING REPORT IN SPANISH
PROVISIÓN DE AGUA: DESCRIPCIÓN, GASTOS Y FECHAS DE INICIO

LA SUBDIVISIÓN AURORA VALLEY PHASE 3 RECIBIRÁ SU PROVISIÓN DE AGUA DE NORTH ALAMO WATER SUPPLY CORPORATION (LA COMPAÑÍA DE AGUA (N.A.W.S.C.). EL DUEÑO DE LA SUBDIVISIÓN Y N.A.W.S.C. HAN FIRMADO UN CONTRATO POR EL CUAL LA SUBDIVISIÓN RECIBIRÁ SU PROVISIÓN DE AGUA POR LOS PRÓXIMOS 30 AÑOS. N.A.W.S.C. HA PRESENTADO DOCUMENTACIÓN PARA DEMOSTRAR A LARGO PLAZO LA CANTIDAD Y CALIDAD DE AGUA ACCESIBLE PARA SERVIR EL FUTURO DESARROLLO DE LA SUBDIVISIÓN.

NAWSC TIENE UNA LINEA DE AGUA EXISTENTE CON UN DIAMETRO DE 8 PULGADAS Y QUE PASA POR EL LADO SUR DE CANTON ROAD. EL SYSTEMA DE AGUA PARA AURORA VALLEY PHASE 3 CONSISTE DE UNA LINEA DE AGUA CON UN DIAMETRO DE 8 PULGADAS QUE CONECTA A LA LINEA DE 8 PULGADAS QUE YA EXISTE POR EL LADO SUR DE CANTON ROAD Y DESPUÉS CORRE DE NORTE A SUR SOBRE EL LADO OESTE DEL DERECHO DE VIA (RIGHT-OF-WAY) DE HARMONIA DRIVE. HAY OTRA LINEA DE AGUA TAMBIEN CON UN DIAMETRO DE 8 PULGADAS QUE CORRE DE NORTE A SUR SOBRE EL LADO OESTE DEL DERECHO DE VIA (RIGHT-OF-WAY) DE LA CLARIDAD DRIVE Y TAMBIEN CONECTARA A LA LINEA DE 8 PULGADAS QUE YA EXISTE POR EL LADO SUR DE CANTON ROAD. LA LINEA DE 8 PULGADAS QUE CORRE DE ESTE A OESTE SOBRE LA PARTE NORTE DE ESPACIO SANTO DRIVE SERVIRA COMO UN LAZO PARA EL SYSTEMA DE AGUA Y SE AMARARA A LAS LINEAS DE AGUA QUE EXISTIRAN SOBRE HARMONIA DRIVE Y LA CLARIDAD DRIVE.

LA DISTRIBUCION PARA AURORA VALLEY PHASE II CONSISTE DE VIENTY-OCHO (28) SERVICIOS DE 1" PULGADA DE DIAMETRO DE SERVICIOS DUALES LOS CUALES CORREN A PARES DE LOTES ANTES DE DIVIDIRSE EN LINEAS DE SERVICIO DE ¾ DE PULGADA EN DIAMETRO Y DIEZ Y SEIS (16) LINEAS DE SERVICIO SINGULARES CON UN DIAMETRO DE ¾ DE PULGADA Y QUE TERMINAN EN LOS MEDIDORES DE AGUA PARA CADA LOTE. LA LINEA DE 8 PULGADAS, LOS SERVICIOS DUALES, LOS SERVICIOS SINGULARES DE ¾ DE PULGADA DE DIAMETRO, Y LOS MEDIDORES DE AGUA YA ESTAN INSTALADOS. EL COSTO TOTAL DE ESTA INSTALACION ES DE $176,480.00 O $2,451.11 POR LOTE. ADICIONALMENTE, EL DUEÑO A PAGADO A NAWSC LA CANTIDAD DE $27,000.00 ($375.00 POR LOTE) QUE CUBREN LOS MEDIDORES, CAJAS, CUOTA DE ABASTECIMIENTO DEL AGUA Y OTRAS CUOTAS ASOCIADAS DE ACUERDO A LO ESTABLECIDO EN EL CONTRATO DE SERVICIO A TREINTA AÑOS. DE ACUERDO AL PEDIDO DE MEDIDORES POR PARTE DE LOS DUEÑOS DE CADA UNO DE LOS LOTES, NAWSC INSTALARA TAN PRONTO POSIBLE Y SIN CARGO ALGUNO EL MEDIDOR RESPECTIVO. EL DUEÑO HA INSTALADO SEIS (6) HYDRANTES DE AGUA ($2,500.00 CADA UNO) SUMANDOSE A UN COSTO TOTAL DE $15,000.00. TODO EL SYSTEMA DE DISTRIBUTION DEL AGUA HA SIDO APROBADO Y ACEPTADO POR NAWSC Y ESTARA OPERABLE AL TIEMPO DE LA FECHA EN LA CUAL TODOS LOS PLANOS DE ESTA SUBDIVISION SEAN ARCHIVADOS EN LAS OFICINAS DE HIDALGO COUNTY CLERK.

DRENAJE: DESCRIPCIÓN, GASTOS Y FECHA DE INICIO PARA FACILITAR EL DRENAJE PARA LA SUBDIVISIÓN
SE INSTALARA UNA FOSA SÉPTICA EN CADA SOLAR. ESTA FOSA SETICA CONSISTE DE UN TANQUE SÉPTICO DE MODELO DUAL Y DE UN CAMPO DE DRENAJE PARA EL SOLAR. EL INGENIERO AUTOR DE ESTE DOCUMENTO HA EVALUADO EL ÁREA DONDE SE ENCUENTRA LA SUBDIVISIÓN Y HA PREPARADO UN REPORTE QUE CONCLUYE QUE ESTE TERRENO ES ADECUADO PARA ESAS FOSAS SÉPTICAS (OSSF). EL REPORTE FUE APROBADO POR EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO (HIDALGO COUNTY HEALTH DEPARTMENT) SEGÚN EL REPORTE.

CADA LOTE EN LA SUBDIVISIÓN MIDE MEDIO ACRE. SE HICIERON POR LOS MENOS DOS ES EXCAVACIONES DE EVALUACIÓN EN LA SUBDIVISIÓN (EXCAVACIONES ADICIONALES NO FUERON NECESARIAS PORQUE EL TERRENO EN ESTA ÁREA ES SIGNIFICANTEMENTE UNIFORME). EL TERRENO ES UNIFORME (TERRENO ARCILLOSO Y SUELO FRANCO) Y SE EXTIENDE A 36 PULGADAS BAJO TODAS LAS EXCAVACIONES PROPUESTAS. NO EXISTE EVIDENCIA DE AGUA 24 PULGADAS MAS ARRIBA DE LO MAS BAJO DE LAS EXCAVACIONES PROPUESTAS. EL AGUA EN ESTA ÁREA FLUYE BIEN.

EL COSTO TOTAL PARA LA INSTALACIÓN DE UN SISTEMA INDIVIDUAL DE FOSAS SÉPTICAS POR SOLAR ES 1,145.00 DÓLARES, INCLUYENDO EL COSTO DEL PERMISO REQUERIDO Y LICENCIA. EN ESTOS MOMENTOS TODAS LAS FOSAS SÉPTICAS HAN SIDO INSTALADAS EN EL PROCESO DE LA APROBACIÓN FINAL. A UN COSTO TOTAL DE $ $82,440.00. EL DEPARTAMENTO DE SALUBRIDAD DEL CONDADO DE HIDALGO HA INSPECCIONADO TODOS LAS FOSAS SÉPTICAS Y HA APROBADO LA INSTALACIÓN DE LAS FOSAS SÉPTICAS DESDE (FECHA DE INSPECCIÓN).

CERTIFICACIÓN:
CON MI FIRMA, CERTIFICO QUE LOS SERVICIOS Y SISTEMAS DE AGUA Y DE DRENAJE, DESCRITOS EN ESTE DOCUMENTO CUMPLEN CON LAS REGLAS GOBERNANDO A LAS SUBDIVISIONES, ADOPTADAS EN LA SECCIÓN 16.343 DEL CÓDIGO DE AGUA DE TEXAS. CERTIFICO QUE LOS GASTOS PARA INSTALAR LOS SISTEMAS DE AGUA Y DE DRENAJE SON:

AGUA: ESTAS SERVICIOS DE AGUA COMPLETAMENTE CONSTRUIDO INCLUYENDO LA INSTALACION DE EL MEDIDOR MECÁNICO DE AGUA COSTARA UN TOTAL DE $ 218,480.00 O $ 3,034.44 POR LOTE

DRENAJE: SE ESTIMA QUE LA FOSA SÉPTICA COSTARA $1,145.00 A UN COSTO TOTAL DE $82,440.00 TODA LA SUBDIVISIÓN.

_____ _____
ENGINEER'S SIGNATURE DATE

STATE OF TEXAS
FRED L. KURTH
54151
LICENSED PROFESSIONAL ENGINEER

SUBDIVIDER CERTIFICATION

1. BY COMPLETING THE IMPROVEMENTS DESCRIBED ON THE PLAT, SUBDIVIDER WILL COMPLY WITH MINIMUM STATE STANDARDS AND THAT (a) WATER QUALITY AND CONNECTIONS INCLUDING WATER METERS AND OR WATER WELLS FOR EACH LOT(S) MEET SUCH STANDARDS AND (b) SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS MEET OR WILL MEET SUCH STANDARDS AND WILL BE CONSTRUCTED IN ACCORDANCE WITH STATE AND COUNTY REGULATIONS.

SUBDIVIDER STATEMENT:

1. WE, RHODES ENTERPRISES, INC., SUBDIVIDER OF AURORA VALLEY PHASE 3, HERE BY CERTIFY SEWER PERMITS HAVE BEEN PAID AND COPIES OF RECEIPTS ARE ON FILE WITH THE HIDALGO COUNTY HEALTH DEPARTMENT THAT ANY ADEQUATE DRINKING WATER SOURCE IS IMMEDIATELY AVAILABLE TO EACH LOT OF THE TYPE, QUALITY & QUANTITY TO ENABLE EACH PERSON PURCHASING A LOT HAVE ADEQUATE WATER TO COMPLY WITH THE REGULATIONS AND THE LAWS OF THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS.

_____
MIKE RHODES, PRESIDENT
RHODES ENTERPRISES, INC.

STATE OF TEXAS
COUNTY OF HIDALGO:

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED MIKE RHODES KNOWN TO ME THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO BE THAT HE EXECUTED THE SAME FOR PURPOSED AND CONSIDERATION THEREIN STATED,GEVEN UNDER MY HAND AND SEAL OF OFFICE

THIS THE _____DAY OF _____20_____.

_____
NOTARY PUBLIC
MY COMMISSION EXPIRES_____


TBPE FIRM # F-1435

MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE
EDINBURG, TX 78541
PH: (956) 381-0981
FAX: (956) 381-1839
ESTABLISHED 1947
227 N. F.M. 3167
RIO GRANDE CITY, TX 78582
PH: (956) 487-8256
FAX: (956) 488-8591
www.meldenandhunt.com


REVISION NOTES

SHEET 3 OF 6

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| 1 | 1-6 | COUNTY COMMENTS | 08/21/13 | |
| | | | | |
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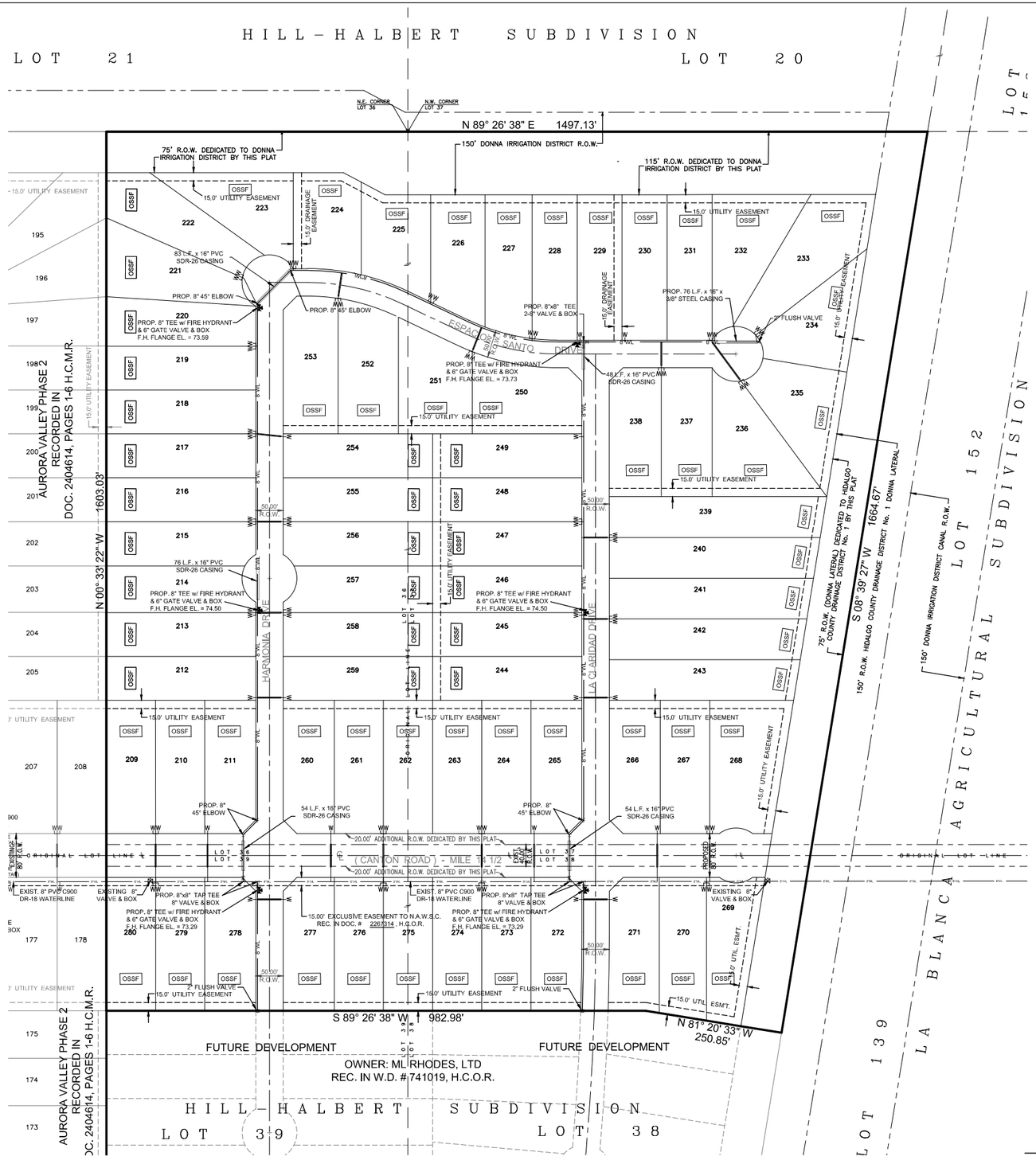
| | | | | |

DRAWN BY: G.A.T. DATE: 06-10-2013
SURVEY, CHECKED BY: _____ DATE:
FINAL CHECK: _____ DATE:

# Map of
# AURORA VALLEY PHASE 3

BEING A RESUBDIVISION OF 50.427 ACRES,
CONSISTING OF
16.651 ACRES OUT OF LOT 36, 25.472 OUT OF LOT 37,
4.734 ACRES OUT OF LOT 38,
AND 3.570 ACRES OUT OF LOT 39
HILL-HALBERT SUBDIVISION,
REC. IN VOL. 1, PAGE 35, H.C.M.R.,
HIDALGO COUNTY, TEXAS.




SCALE: 1" = 100'

BEARING BASIS: AS PER TEXAS STATE PLANE COORDINATE SYSTEM NAD 83 (2011) SOUTH ZONE (4205) ELEVATION PER NAVD 88 (GEOID 2003)

SCALE NOTE:
IF THIS BAR DOES NOT MEASURE 1", THE DRAWING IS NOT TO SCALE

## LEGEND

- SET REBAR WITH CAP STAMPED MELDEN AND HUNT INC.
- SET COTTON PICKER SPINDLE
- FOUND REBAR

LEGEND
- 2" CASING — W — DUAL WATER SERVICE (PROPOSED)
- 2" CASING — W — SINGLE WATER SERVICE (PROPOSED)
- OSSF OSSF

LEYENDA
- 2" FORRO — W/W — SERVICIO DOBLE DE AGUA (PROPUESTO)
- 2" FORRO — W — SERVICIO INDIVIDUAL DE AGUA (PROPUESTO)
- OSSF TANQUE SEPTICO (OSSF)

*–WATER AND OSSF LAYOUT–*

*–MAPA DEL SISTEMA DE DISTRIBUCION DEL AGUA Y TANQUES SEPTICOS (OSSF)–*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PRINCIPAL CONTACTS

| | NAME | ADDRESS | CITY & ZIP | PHONE | FAX |
|---|---|---|---|---|---|
| OWNER: | M.L. RHODES RHODES ENTERPRISES, LTD | 2500 S. BENTSEN PALM DRIVE, STE. 267-B | MISSION, TX. 78572 | (956) 287-2800 | (956) 287-2804 |
| ENGINEER: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX 78539 | (956) 381-0981 | (956) 381-1839 |
| SURVEYOR: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX 78539 | (956) 381-0981 | (956) 381-1839 |


SHEET 4 OF 6

REVISION NOTES

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| 1 | 1-6 | COUNTY COMMENTS | 08/21/13 | |

DRAWN BY: G.A.T. DATE: 06-10-2013
SURVEY, CHECKED BY: _____ DATE:
FINAL CHECK: _____ DATE:

# AURORA VALLEY PHASE 3

BEING A RESUBDIVISION OF 50.427 ACRES,
CONSISTING OF
16.651 ACRES OUT OF LOT 36, 25.472 OUT OF LOT 37,
4.734 ACRES OUT OF LOT 38,
AND 3.570 ACRES OUT OF LOT 39
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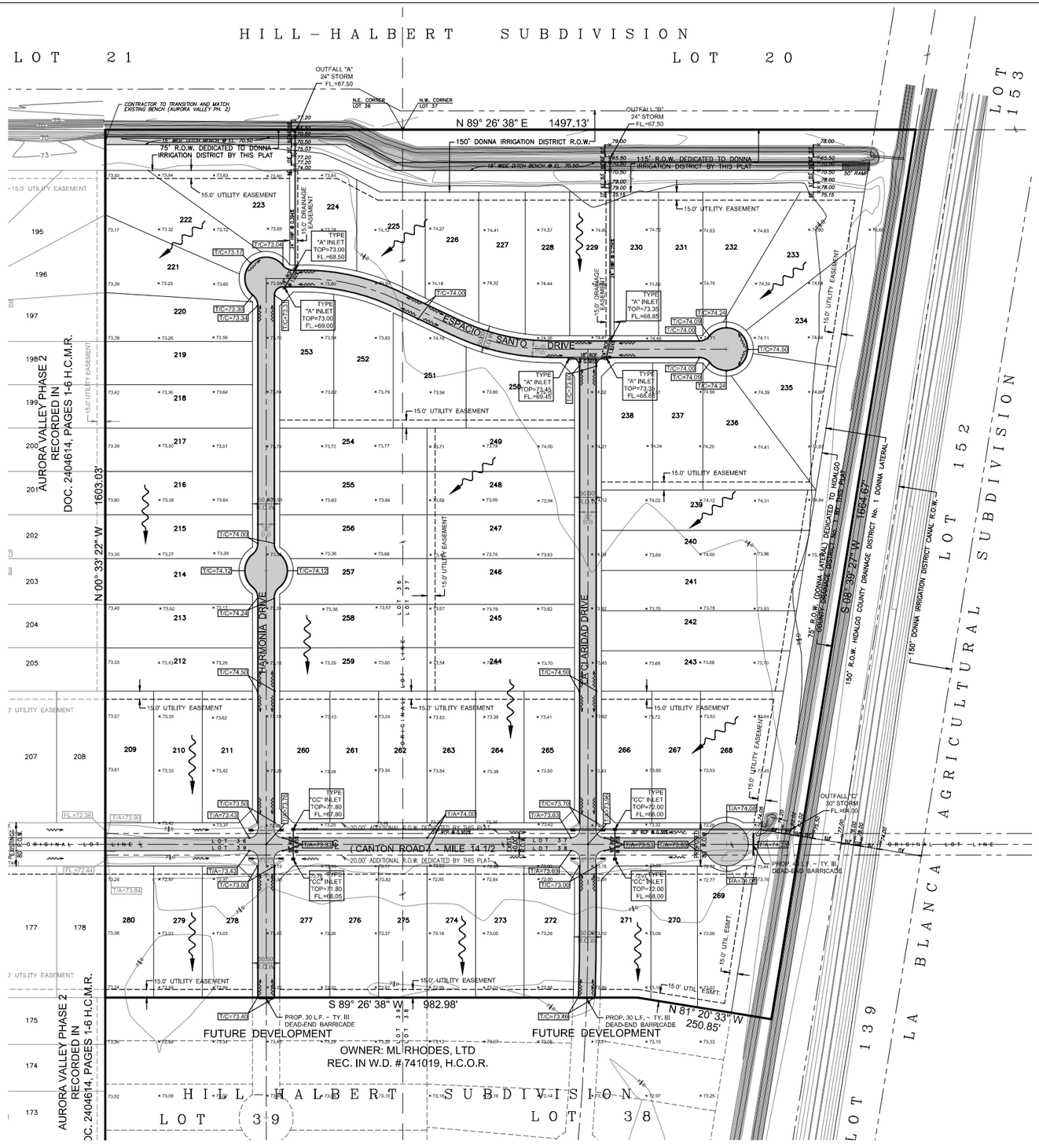
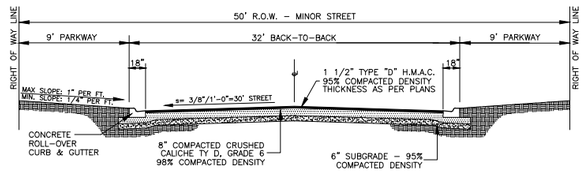


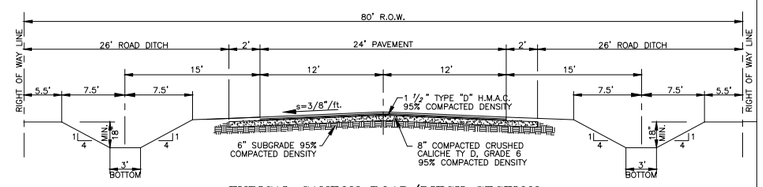

SCALE: 1" = 100'

SCALE NOTE:
IF THIS BAR DOES NOT MEASURE 1", THE DRAWING IS NOT TO SCALE

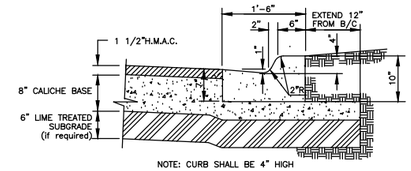
## PAVING DETAILS




TYPICAL INTERIOR STREET CROSS SECTION
N.T.S.




TYPICAL CANTON ROAD/DITCH SECTION
N.T.S.

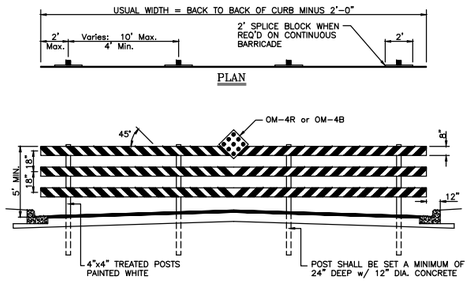



NOTE: CURB SHALL BE 4" HIGH

CONCRETE ROLL-OVER CURB & GUTTER
N.T.S.

GENERAL NOTES:

1. ALL CONCRETE WORK SHALL BE TREATED WITH MEMBRANE CURING COMPOUND TYPE 2 WHITE PIGMENTED IN ACCORDANCE W/ THD 1972 SPECIFICATIONS ITEM 531. CONSIDERED INCIDENTAL TO CONCRETE WORK.
2. 1/2" EXPANSION JOINTS REQUIRED AT 70' c.c. AND AT THE BEGINNING AND END OF ALL RADII. CONTRACTION JOINTS SHALL NOT EXCEED 10' c.c.




GENERAL NOTES :

WIDTH OF RAIL SHALL BE A MINIMUM OF 8", 2' NOMINAL SMOOTH LUMBER.

RAILS SHALL BE FASTENED TO EACH POST WITH 1/4" STEEL BOLTS w/ WASHER ON EA. SIDE. BOLT THREADS SHALL BE PEENED.

THE RAILS SHALL RECEIVE TWO COATS OF WHITE OIL BASE PAINT, THEN SHALL HAVE 6" REFLECTORIZED RED STRIPES OF TAPE PLACED ON 45° SLOPES, DOWN AND TOWARDS THE CENTER OF THE BARRICADE.

BARRICADES MAY BE CONSTRUCTED IN SECTIONS OR MAY BE CONTINUOUS ACROSS ROADWAY WIDTH. SPLICES ON CONTINUOUS RAIL BARRICADES SHALL BE AT POSTS AND SHALL HAVE A 2' SPLICE BLOCK ON BACK SIDE OF THE SAME MATERIAL AS RAIL.

18" DIAMOND REFLECTORIZED RED PANEL OR 18" DIAMOND RED OR BLACK PANEL WITH 9-3" DIA. RED REFLECTORS SYMMETRICALLY PLACED AT CENTER OR CENTER POST.

TYPE III DEAD-END STREET BARRICADE

REVISION NOTES

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| 1 | 1-6 | COUNTY COMMENTS | 08/21/13 | |
| | | | | |
| | | | | |
| | | | | |

SHEET 5 OF 6

DRAWN BY: G.A.T. DATE: 06-10-2013
SURVEY, CHECKED BY: _____ DATE:
FINAL CHECK: _____ DATE:


TBPE FIRM # F-1435

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| OWNER: | M.L. RHODES RHODES ENTERPRISES, LTD | 2500 S. BENTSEN PALM DRIVE, STE. 267-B | MISSION, TX. 78572 | (956) 287-2800 | (956) 287-2804 |
| ENGINEER: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX 78539 | (956) 381-0981 | (956) 381-1839 |
| SURVEYOR: | FRED L. KURTH | 115 W. McINTYRE | EDINBURG, TX 78539 | (956) 381-0981 | (956) 381-1839 |


*-MAP OF TOPOGRAPHY AND STORM DRAINAGE SYSTEM-*
*-TOPOGRAFIA Y SISTEMA DE DRENAJE PLUVIAL-*

# AURORA VALLEY PHASE 3

BEING A RESUBDIVISION OF 50.427 ACRES,
CONSISTING OF
16.651 ACRES OUT OF LOT 36, 25.472 OUT OF LOT 37,
4.734 ACRES OUT OF LOT 38,
AND 3.570 ACRES OUT OF LOT 39
HILL-HALBERT SUBDIVISION,
REC. IN VOL. 1, PAGE 35, H.C.M.R.,
HIDALGO COUNTY, TEXAS.

DRAINAGE STATEMENT
AURORA VALLEY PHASE 3
Job No. 13080 Date: August 19, 2013

AURORA VALLEY PHASE 3 is a 50.427 acre tract of land, consisting of 16.651 acres out of Lot 36, 25.472 acres out of Lot 37, 4.734 acres out of Lot 38 and 3.570 acres out of Lot 39, HILL & HALBERT TRACT, according to the map or plat thereof recorded in Volume 2, Page 60, Hidalgo County, Map Records. The property is located 2100 feet east of Dillon Road and at the north and south sides of Canton Road (Mile 14 ½ North). Said property is currently open land, with a proposed residential use that includes 72 lots. This subdivision lies in Zone 'C' (no shading) on FEMA's Flood Insurance Rate Map Community Panel No. 480334 0425 C, map revised November 16, 1982. Zone 'C' (no shading) is defined as areas of minimal flooding.

The soils are Fine Sandy Loam, Sandy Clay Loam and Clay Loam, which are in Hydrologic Groups 'B' and 'C' respectively. Approximately 95% of this property lies in Hydrologic Group 'B', the remaining 5% lies in Hydrologic Group 'C'. Soils in Hydrologic Group 'B' have a moderate perviousness, and a relatively low plasticity index, soils in Hydrologic Group 'C' are not very pervious and have a moderate plasticity index. (See excerpts from "Soil Survey of Hidalgo County, Texas"). Existing runoff is in a northeasterly direction, and is of 7.89 c.f.s. during the 10-year storm frequency as per attached calculations.

In accordance with the Hidalgo County Drainage District policies, the peak post construction rate of runoff will not be increased due to the construction of this subdivision. Therefore as per attached calculations, 103,007 total cubic feet of detention (2.365 Ac-Ft.) are required. Detention will be accomplished within the existing Donna Irrigation District drain ditch located along the north side of this subdivision. The north side drain ditch will be re-excavated along the south side of the drain ditch and will net 198,613 cubic feet of detention (see attached cross section). Runoff from the proposed streets and excess runoff from the lots will surface flow into three proposed storm drainage systems for this subdivision. System "A" located in the northwest quandrant of the subdivision consists of two (2) Type 'A' inlets, 240 linear feet of 24-inch pipe and 38 linear feet of 18-inch pipe. System 'B' located in the northeast quandrant of the subdivision consists of three (3) Type 'A' inlets, 325 linear feet of 24-inch pipe and 100 linear feet of 18-inch pipe. System 'C' takes in the runoff from the lots along Canton Road (Mile 14 ½ North) and flows easterly and discharges into the Donna Lateral and consists of four (4) Type 'C' inlets, 323 linear feet of 30-inch pipe, 595 linear feet of 24-inch pipe and 100 linear feet of 18-inch pipe. The ultimate outfall is the Donna Lateral drain ditch located adjacent to the east side of this development.

The finished floor elevation for the proposed buildings shall be 18 inches above the front top of curb, measured from the center of the lot. Natural ground shall be graded in such manner that it will allow runoff to drain away from the buildings, as well as avoid the concentration of runoff onto other lots within the subdivision.

CERTIFICATION:
BY MY SIGNATURE BELOW, I CERTIFY THAT THE 100-YEAR FLOODPLAIN AS DESCRIBED IN COMMUNITY PANEL NUMBER 480334 0425 C, MAP REVISED NOVEMBER 16 1982, PERTAINING TO THIS SUBDIVISION, IS CONTAINED WITHIN THE SECTION OF DRAIN DITCH (SOUTH SIDE) LOCATED AT THE NORTH SIDE OF THIS SUBDIVISION, AND ALONG THE ROAD DITCHES ON THE EAST SIDE OF DILLON ROAD AND NORTH AND SOUTH SIDES OF CANTON ROAD (MILE 14 1/2 NORTH RD.).

STATE OF TEXAS — FRED L. KURTH — 54151 — LICENSED PROFESSIONAL ENGINEER

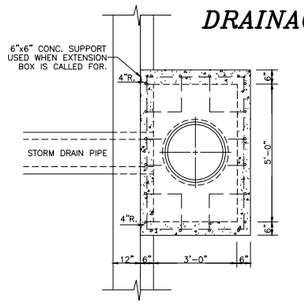
FRED L. KURTH #54151

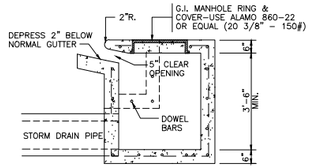
NOTES TO CONTRACTOR:

PROPOSED ROAD DITCH ALONG NORTH AND SOUTH SIDES OF CANTON ROAD (MILE 14 1/2) TO BE GRADED ACCORDING TO COUNTY SPECIFICATIONS.

CULVERTS AT ALL STREET INTERSECTIONS SHALL BE INSTALLED WITH SAFETY ENDS TREATMENT.

# DRAINAGE DETAILS




SLOPE BOTTOM OF INLET EXTENSION 1/2" / 1'-0" TOWARD INLET EXTENSION TO INLET TO BE MADE IN INCREMENTS OF 3'-0" OR 6'-0" ONLY. TRANSITION NORMAL GUTTER TO INLET SLOPE APPROXIMATELY 3'-0".

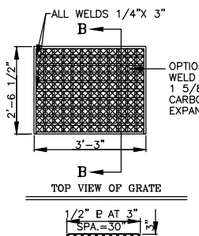
PLAN

ALL STEEL TO BE No. 4 BARS 12" SPACING IN BOTH DIRECTIONS.

SECTION

## TYPE "A" CURB INLET

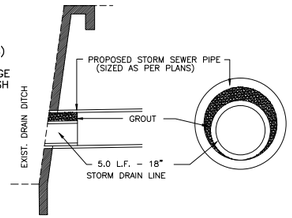
N.T.S.




TOP VIEW OF GRATE

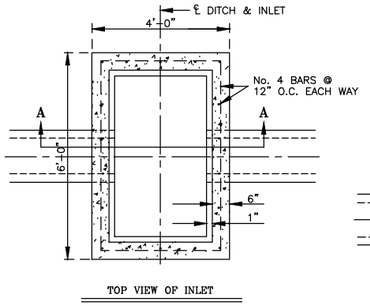



SECTION "B-B"

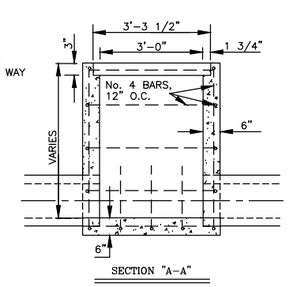



## DRAINAGE RESTRICTION DETAIL

TO BE LOCATED AT EACH DRAINAGE DISCHARGE @ DITCH



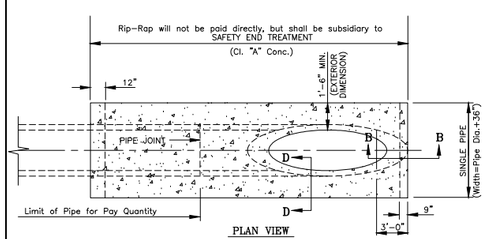

TOP VIEW OF INLET



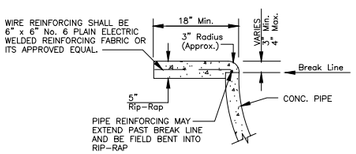

SECTION "A-A"

## TYPE "C-C" GRATED INLET

( TWO GRATES PER INLET )



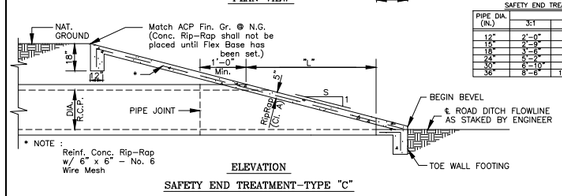

PLAN VIEW




SEC. "DD"

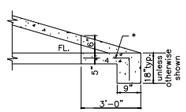
SAFETY END TREATMENT PIPE LENGTHS

| PIPE DIA. (IN.) | 3:1 | 4:1 | 5:1 | 6:1 |
|---|---|---|---|---|
| 12" | 2'-0" | 2'-8" | 3'-4" | 4'-0" |
| 18" | 3'-0" | 4'-0" | 5'-0" | 6'-0" |
| 24" | 4'-0" | 5'-4" | 6'-8" | 8'-0" |
| 30" | 5'-0" | 6'-8" | 8'-4" | 10'-0" |
| 36" | 6'-0" | 8'-0" | 10'-0" | 12'-0" |
| 42" | 7'-0" | 9'-4" | 11'-8" | 14'-0" |
| 48" | 8'-0" | 10'-8" | 13'-4" | 16'-0" |
| 54" | 9'-0" | 12'-0" | 15'-0" | 18'-0" |
| 60" | 10'-0" | 13'-4" | 16'-8" | 20'-0" |
| 66" | 11'-0" | 14'-8" | 18'-4" | 22'-0" |
| 72" | 12'-0" | 16'-0" | 20'-0" | 24'-0" |
| 78" | 13'-0" | 17'-4" | 21'-8" | 26'-0" |
| 84" | 14'-0" | 18'-8" | 23'-4" | 28'-0" |
| 90" | 15'-0" | 20'-0" | 25'-0" | 30'-0" |
| 96" | 16'-0" | 21'-4" | 26'-8" | 32'-0" |




ELEVATION

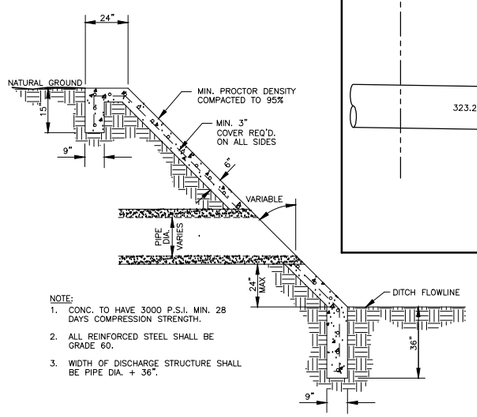
SAFETY END TREATMENT-TYPE "C"




SEC. "BB"

## SAFETY END TREATMENT - (Type "C") DETAILS

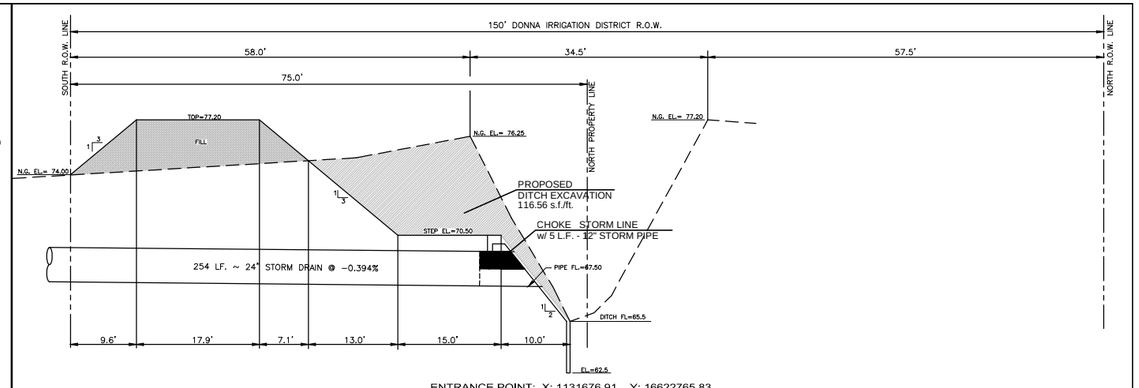
N.T.S.




NOTE:
1. CONC. TO HAVE 3000 P.S.I. MIN. 28 DAYS COMPRESSION STRENGTH.
2. ALL REINFORCED STEEL SHALL BE GRADE 60.
3. WIDTH OF DISCHARGE STRUCTURE SHALL BE PIPE DIA. + 36".

## H.C.D.D.#1 STORM DISCHARGE STRUCTURE

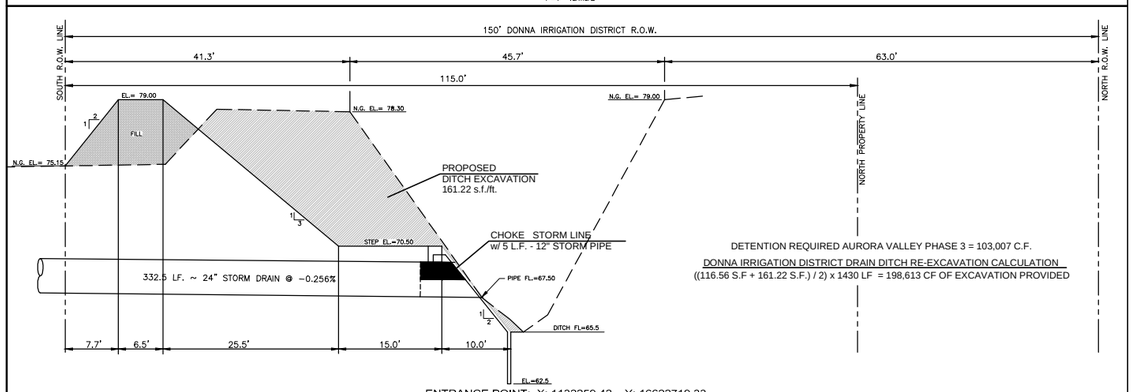
N.T.S.




ENTRANCE POINT: X: 1131676.91 Y: 16622765.83
OUTFALL "A" $Q_{10}$ = 8.62 c.f.s. $H_L$ = 0.54'

## DONNA IRRIG. DISTRICT CROSS SECTION @ HARMONIA DRIVE

SCALE: 1"=10' HORIZONTAL
1"=4' VERTICAL




DETENTION REQUIRED AURORA VALLEY PHASE 3 = 103,007 C.F.

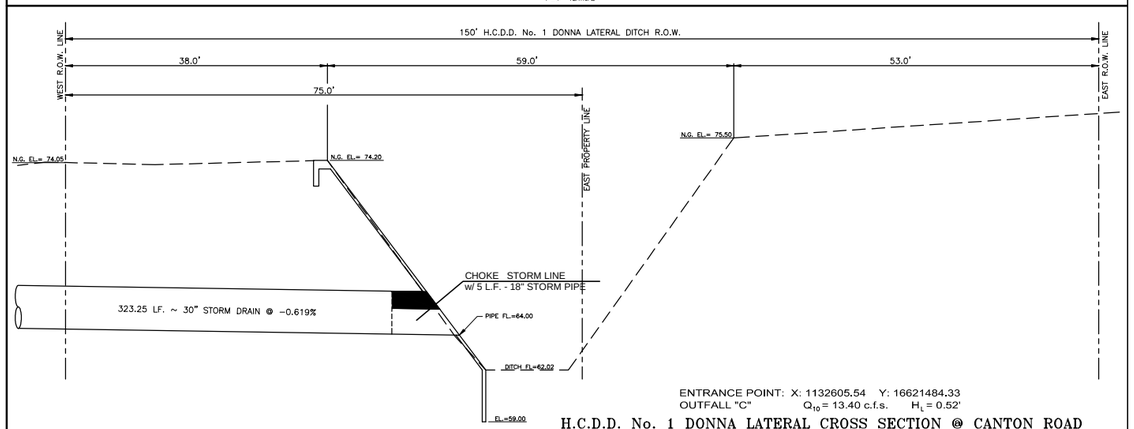
DONNA IRRIGATION DISTRICT DRAIN DITCH RE-EXCAVATION CALCULATION

((116.56 S.F + 161.22 S.F.) / 2) x 1430 LF = 198,613 CF OF EXCAVATION PROVIDED

ENTRANCE POINT: X: 1132259.42 Y: 16622719.33
OUTFALL "B" $Q_{10}$ = 10.53 c.f.s. $H_L$ = 0.98'

## DONNA IRRIG. DISTRICT CROSS SECTION @ LA CLARIDAD DRIVE

SCALE: 1"=10' HORIZONTAL
1"=4' VERTICAL




ENTRANCE POINT: X: 1132605.54 Y: 16621484.33
OUTFALL "C" $Q_{10}$ = 13.40 c.f.s. $H_L$ = 0.52'

## H.C.D.D. No. 1 DONNA LATERAL CROSS SECTION @ CANTON ROAD

SCALE: 1"=10' HORIZONTAL
1"=4' VERTICAL

SHEET 6 OF 6

REVISION NOTES

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| 1 | 1-6 | COUNTY COMMENTS | 08/21/13 | |

DRAWN BY: G.A.T. DATE: 06-10-2013
SURVEY, CHECKED BY: _____ DATE:
FINAL CHECK: _____ DATE:


MELDEN & HUNT INC.
CONSULTANTS • ENGINEERS • SURVEYORS
115 W. McINTYRE, EDINBURG, TX 78541, PH: (956) 381-0981, FAX: (956) 381-1839
227 N. F.M. 3167, RIO GRANDE CITY, TX 78582, PH: (956) 487-5256, FAX: (956) 488-8591
ESTABLISHED 1947
www.meldenandhunt.com
TBPE FIRM # F-1435

# HIDALGO COUNTY
# PLANNING DEPARTMENT


**1304 SOUTH 25TH STREET**
**EDINBURG TEXAS 78539**
**Tel. 956-318-2840 Fax. 956-318-2844**

**Raul E. Sesin, P.E., CFM**
**Planning Administrator**


## HIDALGO COUNTY COMMISSIONERS COURT MEETING
## DATE: 03-04-2014

PROPOSED **EDUARDO'S No.12** SUBDIVISION, PRECINCT No. **3** .

ENGINEER FIRM: **IZAGUIRRE ENGINEERING GROUP** DEVELOPER: **DIANA LAURA IZAGUIRRE**

☐ PRELIMINARY APPROVAL ☐ FINAL APPROVAL ☒ FINAL APPROVAL WITH FINANCIAL GUARANTEE ☐ WITH VARIANCE

NUMBER OF LOTS: **38** ☒*SINGLE FAMILY ___ ☐*MULTI-FAMILY ___ ☐COMMERCIAL ___ ☐INSTITUTIONAL

LOCATION DESCRIPTION: **Approximately ¾ mile North of 3 Mile Line, on the East side of Bentsen Palm Dr.**

SUBDIVISION LIES WITHIN THE: ☒*ETJ of* **MISSION** *and was approved by the P & Z and City Commission of said City*

DRAINAGE REPORT WAS APPROVED BY HCDD#1: ON **05/17/13** PROPERTY LIES WITHIN FLOOD ZONE: **"X"** AS PER FEMA. FLOOD ZONE **"A"** **HAS BEEN REVISED VIA LOMR-F CASE #13-06-2310A TO FLOOD ZONE "X" (UN SHADED) ELEV:182.80**

DRAINAGE DESIGN: **Storm drainage pipe system discharging to a proposed regional detention area located on the east side of the subdivision. From this regional detention area a proposed 8" PVC overflow bleeder line will be installed to connect to an existing drainage pond located on the south west corner of La Homa Meadows Phase 2. Also a proposed 18" overflow relief pipeline will be installed along the north side of Mile 4 North Rd from La Homa Meadows Phase 2 drainage pond going east connecting to a curb inlet along the west side of La Homa Road.**

DISTANCE TO A DRAIN DITCH: **Approximately half a mile north of subdivision**

ROAD R.O.W. DEDICATION: **17.50 feet East of Bentsen Palm Drive**

H.C.R.O.W. FINAL APPROVAL DATE: **02-11-14** By, **Victor Gallardo** PCT. 3 R.O.W. AGENT

H.C.H.D. FINAL APPROVAL DATE: **02-11-14** By, **Elizardo Ramos, Environmental Health Division Manager**

SEWER SYSTEM: ☒SANITARY SEWER BY: **City of Mission** LINE SIZE: **8"** LOCATION: **Along the east side of Bentsen Palm Drive.**

WATER SERVICE PROVIDER: **S.W.S.C** LINE SIZE: **8"** LOCATION: **East side of Bentsen Palm Drive.**

H.C.O.E.C. FINAL APPROVAL DATE: **02-12-14** : By **Martin Ramirez, Environmental Compliance Coordinator**

☒**LARGE CONSTRUCTION**

*The applicant has submitted the required NOI as per Part II, Section E of the TPDES General Permit for Construction Activities (TXR150000) along with a copy of the Erosion Control Plan for the proposed project.*

REQUEST FOR FINAL APPROVAL WITH: ☒ **Cash Deposit:** *Amount:$* ***9,000.00*** *For:* ☒**FILLING STATIONS (HYDRANTS)**

PRELIMINARY APPROVAL FROM THE HIDALGO COUNTY COMMISSIONERS COURT ON: **JULY 09, 2013**

STAFF RECOMMENDS: ☒ **Final Approval** *with financial guarantee.*

* *This subdivision plat has been reviewed and complies with the Hidalgo County Subdivision Rules, Texas Water Development Board Model Subdivision Rules and The Texas Local Government Code.*

# SUBDIVISION PLAT OF
# EDUARDOS SUBDIVISION No. 12

A 15.0 ACRE TRACT OF LAND BEING ALL OF LOTS 179 AND THE SOUTH 5.0 ACRES OUT OF LOT 181, BENTSEN GROVES SUBDIVISION, HIDALGO COUNTY TEXAS, ACCORDING TO MAP OR PLAT THEREOF RECORDED IN VOLUME 7, PAGE 13, MAP RECORDS, HIDALGO COUNTY, TEXAS, AND ACCORDING TO WARRANTY DEED RECORDED UNDER COUNTY CLERK'S DOCUMENT NUMBER 2270285, OFFICIAL RECORDS, HIDALGO COUNTY, TEXAS.

## METES AND BOUNDS

**BEING A 15.0 GROSS ACRE TRACT OF LAND, MORE OR LESS, CONSISTING OF ALL OF LOTS 179 AND THE SOUTH 5.0 ACRES OF LOT 181, BENTSEN GROVES SUBDIVISION, HIDALGO COUNTY, TEXAS, AS PER THE MAP OR PLAT THEREOF RECORDED IN VOLUME 7, PAGE 13, MAP RECORDS OF HIDALGO COUNTY, TEXAS; SAID 15.0 ACRE TRACT OF LAND IS MORE PARTICUARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:**

**COMMENCING AT A COTTON PICKER SPINDLE FOUND ON THE SOUTHWEST CORNER OF SAID LOT 179 LOCATED WITHIN THE RIGHT-OF-WAY OF BENTSEN PALM BOULEVARD FOR THE SOUTHEAST CORNER AND POINT OF BEGINNING OF THIS HEREIN DESCRIBED TRACT;**

**(1) THENCE, NORTH 08 DEGREES 50 MINUTES EAST, WITH THE EAST LINE OF SAID LOTS 179 AND 181, AT A DISTANCE OF 350.0 FEET PASSING THE SOUTHEAST CORNER OF SAID LOT 181 AND AT A DISTANCE OF 450.0 FEET IN ALL TO A NAIL FOUND FOR THE NORTHWEST CORNER OF THIS HEREIN DESCRIBED TRACT;**

**(2) THENCE, SOUTH 81 DEGREES 10 MINUTES EAST, PARALLEL TO AND 149.61 NORTH OF SOUTH LINE OF SAID LOT 181, AT A DISTANCE OF 32.5 FEET PASS A 1/2 INCH DIAMETER IRON PIPE FOUND ON THE EAST RIGHT-OF-WAY LINE OF SAID BENTSEN PALM DRIVE AND AT A DISTANCE OF 1,455.80 FEET IN ALL TO A ½ INCH DIAMETER IRON ROD FOUND ON THE EAST LINE OF SAID LOT 181 FOR THE NORTHEAST CORNER OF THIS HEREIN DESCRIBED TRACT;**

**(3) THENCE, SOUTH 08 DEGREES 50 MINUTES WEST, WITH THE WEST LINE OF SAID LOTS 181 AND 179, AT A DISTANCE OF 149.61 FEET PASS THE COMMON EAST CORNER OF SAID LOTS 181 AND 179 AND AT 450.0 FEET IN ALL TO A ½ INCH DIAMETER IRON ROD FOUND ON THE SOUTHEAST CORNER THIS HEREIN DESCRIBED TRACT;**

**(4) THENCE, NORTH 81 DEGREES 10 MINUTES WEST, WITH THE SOUTH LINE OF SAID LOT 179, AT A DISTANCE OF 1,423.3 FEET TO A ½ INCH DIAMETER IRON ROD FOUND ON THE EAST RIGHT-OF-WAY LINE OF SAID BENTSEN PALM DRIVE, AT A DISTANCE OF 1,455.8 FEET IN ALL TO THE POINT OF BEGINNING, CONTAINING 15.0 GROSS ACRES OF LAND MORE OR LESS.**

## STATE OF TEXAS
## COUNTY OF HIDALGO
## OWNER'S DEDICATION, CERTIFICATION, AND ATTESTATION

**I, DIANA LAURA IZAGUIRRE, OWNER OF THE 15.00 ACRE TRACT OF LAND ENCOMPASSED WITHIN THE PROPOSED EDUARDO'S SUBDIVISION No.12, HEREBY SUBDIVIDE THE LAND AS DEPICTED IN THIS SUBDIVISION PLAT AND DEDICATE TO PUBLIC USE THE STREET, PARK, AND EASEMENTS SHOWN HEREIN.**

**I CERTIFY THAT I HAVE COMPLIED WITH THE REQUIREMENTS OF TEXAS LOCAL GOVERNMENT CODE §232.032 AND THAT:**

**(A) THE WATER QUALITY AND CONNECTIONS TO THE LOTS MEET, OR WILL MEET, THE MINIMUM STATE STANDARDS;**
**(B) SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS MEET, OR WILL MEET, THE MINIMUM REQUIREMENTS OF STATE STANDARDS;**
**(C) ELECTRICAL CONNECTIONS PROVIDED TO THE LOTS MEET, OR WILL MEET, THE MINIMUM STATE STANDARDS; AND**
**(D) GAS CONNECTIONS, IF AVAILABLE, PROVIDED TO THE THE LOTS MEET, OR WILL MEET, THE MINIMUM STATE STANDARDS.**

**I ATTEST THAT THE MATTERS ASSERTED IN THIS PLAT ARE TRUE AND COMPLETE.**

_____ DATE

DIANA LAURA IZAGUIRRE
LAS DIANAS LAND DEVELOPMENT, LLC.
7413 N. LA HOMA
MISSION, TEXAS 78574

## STATE OF TEXAS
## COUNTY OF HIDALGO

**BEFORE ME, the undersigned notary public, on this day personally appeared DIANA LAURA IZAGUIRRE proved to me through her Texas Department of Public Safety Driver License to be the person whose name is subscribed to the foregoing instrument, who, being by me first duly sworn, declared that the statements therein are true and correct and acknowledged that she executed the same for the purposed and consideration thereby expressed.**

**Given under my hand and seal of office this _____ day of _____, 2013.**

DAISY BONILLA
MY COMMISSION EXPIRES
August 02, 2017

_____ NOTARY PUBLIC– STATE OF TEXAS

THIS PLAT IS HEREBY APPROVED BY HIDALGO COUNTY IRRIGATION DISTRICT NO. 6 SUBJECT TO THE CONDITION THAT IF IRRIGATION FROM SAID DISTRICT IS DESIRED TO THE INDIVIDUAL LOTS IN SAID SUBDIVISION, PROVISION SALL BE MADE FOR APPROPRIATE EASEMENTS FOR THE INSTALLATION OF NECESSARY IRRIGATION DELIVERY FACILITIES, AS REQUIRED BY THE DISTRICT'S SUBDIVISION POLICIES, TO SUCH LOTS FROM THE CLOSEST DISTRICT DELIVERY POINT AND BY VIRTUE OF THESE REQUIREMENTS IT SHALL BE THE RESPONSIBILITY OF THE OWNERS OF THE PROPERTY TO INSTALL AND MAINTAIN SUCH FACILITIES.

DATED THIS THE____ DAY OF _____ , 2014.

ATTEST: _____ DIRECTOR _____ DIRECTOR

## HIDALGO COUNTY
## CERTIFICATE OF PLAT APPROVAL
## UNDER LOCAL GOVERNMENT CODE § 232.028(a)

**WE THE UNDERSIGNED CERTIFY that this plat of the EDUARDO'S SUBDIVISION No. 12 was reviewed and approved by the Hidalgo County Commissioners Court on _____ , _____.**

_____ _____
Hidalgo County Judge date

ATTEST: _____ _____
Hidalgo County Clerk date

## HIDALGO COUNTY DRAINAGE DISTRICT No. 1

NOTE:
HIDALGO COUNTY DRAINAGE DISTRICT NO. 1 HEREBY CERTIFIES THAT THE DRAINAGE PLANS FOR THIS SUBDIVISION COMPLY WITH THE MINIMUM STANDARDS OF THE DISTRICT ADOPTED UNDER TEXAS WATER CODE NO. 49.211(c). THE DISTRICT HAS NOT REVIEWED AND DOES NOT CERTIFY THAT THE DRAINAGE STRUCTURES DESCRIBED ARE APPROPRIATE FOR THE SPECIFIC SUBDIVISION, BASED ON GENERALLY ACCEPTED ENGINEERING CRITERIA. IT IS THE RESPONSIBILITY OF THE DEVELOPER OF THE SUBDIVISION AND ITS ENGINEER TO MAKE THESE DETERMINATIONS.

HIDALGO COUNTY DRAINAGE DISTRICT NO. 1

BY:_____

THE COUNTY OF HIDALGO TEXAS
FILED FOR RECORD IN
HIDALGO COUNTY
ARTURO GUAJARDO, JR.
HIDALGO COUNTY CLERK

ON: _____AT_____ AM/PM

INSTRUMENT NUMBER
OF THE MAP RECORDS OF HIDALGO COUNTY, TEXAS

BY:_____ DEPUTY

## HIDALGO COUNTY
## CERTIFICATE OF PLAT APPROVAL

**I THE UNDERSIGNED CERTIFY THAT THIS PLAT OF EDUARDO'S SUBDIVISION No.12 WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY HEALTH DEPARTMENT ON _____.**

_____ _____
ENVIRONMENTAL HEALTH DIVISION MANAGER DATE

## STATE OF TEXAS
## COUNTY OF HIDALGO

I, THE UNDERSIGNED, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE PROPER ENGINEERING CONSIDERATIONS HAVE BEEN GIVEN TO THIS PLAT.

STATE OF TEXAS
GILBERTO A. GRACIA
62477
REGISTERED
PROFESSIONAL
ENGINEER

GILBERTO A. GRACIA
REGISTERED PROFESSIONAL ENGINEER No. 62477
IZAGUIRRE ENGINEERING GROUP, LLC.
7413 N. LA HOMA
MISSION, TEXAS 78574

## STATE OF TEXAS
## COUNTY OF HIDALGO

**I, ALFONSO QUINTANILLA, A REGISTERED PROFESSIONAL LAND SURVEYOR IN TEXAS, HEREBY CERTIFY THAT THE ABOVE PLAT AND DESCRIPTION OF THE EDUARDO'S SUBDIVISION No.12, WAS PREPARED FROM A SURVEY OF THE PROPERTY MADE ON THE GROUND BY ME OR UNDER MY SUPERVISION ON _____**

STATE OF TEXAS
ALFONSO QUINTANILLA
4856
REGISTERED
PROFESSIONAL
LAND SURVEYOR

_____ _____
ALFONSO QUINTANILLA DATE
R.P.L.S. No. 4856

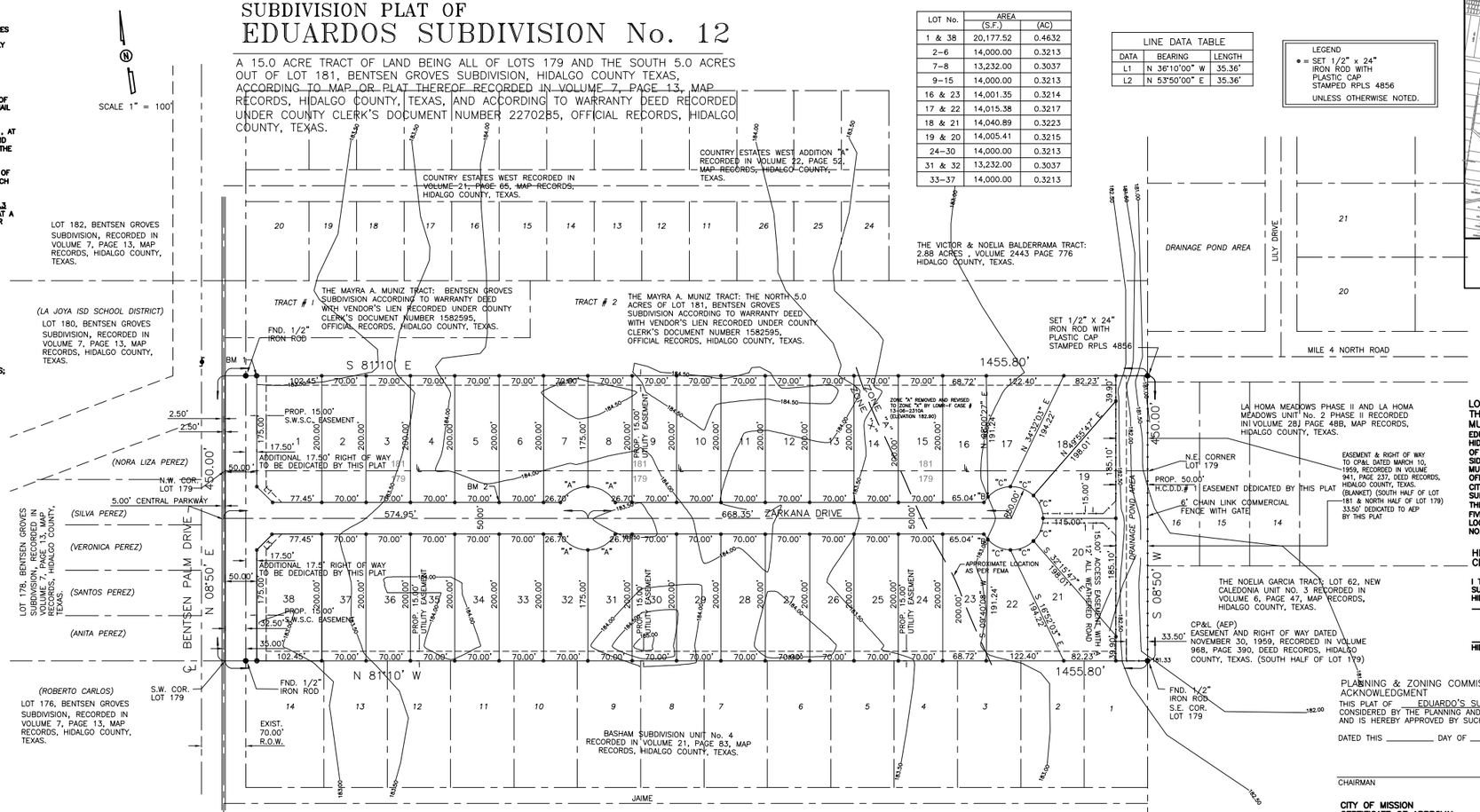
| LOT No. | AREA (S.F.) | (AC) |
|---|---|---|
| 1 & 38 | 20,177.52 | 0.4632 |
| 2–6 | 14,000.00 | 0.3213 |
| 7–8 | 13,232.00 | 0.3037 |
| 9–15 | 14,000.00 | 0.3213 |
| 16 & 23 | 14,001.35 | 0.3214 |
| 17 & 22 | 14,015.38 | 0.3217 |
| 18 & 21 | 14,040.89 | 0.3223 |
| 19 & 20 | 14,005.41 | 0.3215 |
| 24–30 | 14,000.00 | 0.3213 |
| 31 & 32 | 13,232.00 | 0.3037 |
| 33–37 | 14,000.00 | 0.3213 |

| LINE DATA TABLE | | |
|---|---|---|
| DATA | BEARING | LENGTH |
| L1 | N 36°10'00" W | 35.36' |
| L2 | N 53°50'00" E | 35.36' |

LEGEND
● = SET 1/2" x 24" IRON ROD WITH PLASTIC CAP STAMPED RPLS 4856
UNLESS OTHERWISE NOTED.

## LOCATION MAP
SCALE= 1":2000'

| CURVE | DELTA | RADIUS | LENGTH |
|---|---|---|---|
| "A" | 60°00'00" | 50.00' | 52.37' |
| "B" | 12°30'06" | 50.00' | 10.91' |
| "C" | 45°50'38" | 50.00' | 40.01' |




## PLAT NOTES AND RESTRICTIONS:

1.– FLOOD ZONE DESIGNATION: ZONE "X" AREAS DETERMINED TO BE OUTSIDE 500–YEAR FLOOD–PLAIN, & FLOOD ZONE "A" COMMUNITY–PANEL NUMBER 480334 0290 D. EFFECTIVE DATE: JUNE 6, 2000. THE PORTION THAT LIES WITHIN FLOOD ZONE "A" AS BEEN FILLED TO AN ELEVATION OF 182.90 AND REDESIGNATED AS FLOOD ZONE "X", AS PER FEMA LETTER/CASE 13–06–2310A (LOMR–F)

2.– GENERAL NOTE FOR SINGLE FAMILY RESIDENCES: NO MORE THAN ONE–SINGLE FAMILY DETACHED DWELLING SHALL BE LOCATED ON EACH LOT. (ANY OTHER NON–RESIDENTIAL USE SHALL REQUIRE PLANNING DEPARTMENT, HEALTH DEPARTMENT AND FIRE MARSHALL APPROVAL). APPLICATIONS FOR CONSTRUCTION ARE REQUIRED PRIOR TO OCCUPYING THE LOT. NO COMMERCIAL USE SHALL BE ALLOWED ON ALL INTERNAL LOTS 2 – 37.

3.– MINIMUM FINISH FLOOR NOTE: MINIMUM FINISH FLOOR ELEVATION SHALL BE 182.90. ELEVATION CERTIFICATE MAY BE REQUIRED FOR LOTS LOCATED OUTSIDE A DESIGNATED FLOOD ZONE AT THE TIME FOR APPLICATION FOR CONSTRUCTION TO VERIFY PRE AND POST CONSTRUCTION FINISH FLOOR ELEVATIONS. AN ELEVATION CERTIFICATE SHALL BE REQUIRED FOR ALL LOTS WITHIN A DESIGNATED FLOOD ZONE AT THE TIME FOR A DEVELOPMENT PERMIT APPLICATION.

4.– LEGEND ●– DENOTES 1/2" IRON ROD SET UNLESS OTHERWISE NOTED.

5.– THERE ARE NO WATER WELLS WITHIN 150 FEET FROM THE BOUNDARIES OF THIS SUBDIVISION.

6.– MINIMUM BUILDING SETBACK LINES:
FRONT .....25.00'
FRONT GARAGE.....18.00'
REAR.....15.00'
SIDE.....6.00'
SIDE CORNER.....20.00'
OR TO EASEMENT LINE WHICHEVER IS GREATER ON ALL CASES
LOT 1 & 38 FOR COMMERCIAL ONLY.....50.00'

7.– DRAINAGE; IN ACCORDANCE WITH THE HIDALGO COUNTY DRAINAGE DISTRICT No. 1 AND HIDALGO COUNTY REQUIREMENTS, THIS DEVELOPMENT WILL BE REQUIRED TO DETAIN A TOTAL OF 34,949 CUBIC FEET (0.8023 ACRE FEET) OF STORM WATER RUNOFF. DRAINAGE RETENTION IN ACCORDANCE WITH THE LOCAL REQUIREMENTS WILL BE ACCOMPLISHED AS FOLLOWS: SEE DRAINAGE REPORT ON SHEET No.4.

8.– NO STRUCTURE SHALL BE PERMITTED OVER ANY EASEMENT. EASEMENTS SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, SHEDS, SHRUBS TREES, AND OTHER PLANTINGS (EXCEPT LOW, LESS THAN 18 INCHES MATURE HEIGHT, GROUND COVER, GRASS, OR FLOWERS) AND OTHER OBSTRUCTIONS THAT WOULD INTERFERE WITH THE OPERATIONS AND MAINTENANCE OF THE EASEMENT.

9.– BENCHMARK NOTE: THE FOLLOWING BENCHMARK IS IDENTIFIED ON THE FACE OF THE PLAT AND ON THE ATTACHED ENGINEERING PLANS. B.M. 1 ELEV. 183.93 AT A IRON ROD LOCATED ON THE NORTHWEST CORNER OF THIS DEVELOPMENT N.A.V.D. 88 DATUM.
B.M. 2 ELEV. 184.30 ON A CONCRETE DISK LOCATED AT THE SOUTHWEST CORNER OF LOT 6 OF EDUARDS SUBDIVISION No.12. N.A.V.D. 88 DATUM.

10.– EACH PURCHASE CONTRACT MADE BETWEEN A SUBDIVIDER AND PURCHASER OF A LOT IN THIS SUBDIVISION SHALL CONTAIN A STATEMENT DESCRIBING HOW AND WHEN WATER, SEWER, ELECTRICITY AND GAS SERVICES WILL BE MADE AVAILABLE TO THE SUBDIVISION.

11.– EACH LOT HAS A 15' WIDE PUBLIC UTILITY EASEMENT RUNNING ALONG THE REAR OF THE LOT. THE REAR OF THE LOT IS DEFINED AS THAT PORTION FARTHEST FROM STREET.

12.– ALL IRRIGATION EASEMENTS ARE EXCLUSIVE TO H.C.I.D. NO. 6 DISTRICT, AND NO OTHER UTILITIES OR USE IS ALLOWED WITHOUT EXPRESS APPROVAL BY THE DISTRICT.

13.– NO UTILITY COMPANY OR OTHER PERSON IS ALLOWED TO CROSS ABOVE OR BELOW GROUND ANY DISTRICT EASEMENT OR RIGHT OF WAY WITH LINES, POLES, OPEN DITCHES OR OTHER USE WITHOUT FIRST OBTAINING A CROSSING PERMIT FROM THE DISTRICT. (H.C.I.D. NO. 6 DISTRICT)

14.– NO PERMANENT STRUCTURES, (EXAMPLE, FENCES OF ANY CONSTRUCTION WILL BE ALLOWED TO BE CONSTRUCTED OR EXIST ON ANY DISTRICT EASEMENT OR RIGHT OF WAY WITHOUT WRITTEN APPROVAL BY THE DISTRICT. ANY UNAUTHORIZED STRUCTURE IN THE EASEMENT AREA IS SUBJECT TO REMOVAL.

15.– LOTS 1 & 38 SHALL NOT HAVE ACCESS/DRIVEWAY ONTO BENTSEN PALM DRIVE. FOR COMERCIAL USE ONLY. IF THE AFOREMENTIONED LOTS ARE UTILIZED FOR COMMERCIAL USE, THEN THE LOT OWNER WILL BE REQUIRED TO INSTALL A BUFFER ABUTTING THE RESIDENTIAL LOT. LOCATION OF ACCESS/DRIVEWAY SHALL BE SHOWN ON THE SITE PLAN AS PER NOTE 18 AND IS SUBJECT TO APPROVAL FROM THE HIDALGO COUNTY PLANNING DEPARTMENT.
DRIVEWAY ENTRANCE FROM ZARKANA DRIVE SHALL BE 50.00 FEET FROM CORNER CLIP OF COMMERCIAL LOTS.

16.– AS PER LOCAL GOVERNMENT CODE REQUIREMENTS, SANITARY SEWER MUST BE CONNECTED TO RESIDENTIAL HOMES PRIOR TO RECEIVING A FINAL CLEARANCE FOR WATER METER. A SEWER TAP INSPECTION SHALL BE PROVIDED FROM THE ENTITY SERVICE PROVIDER PRIOR TO RECEIVING A CLEARANCE FOR WATER METER(S).

17.– DIANA L. IZAGUIRRE, THE OWNER & SUBDIVIDER OF EDUARDO'S SUBDIVISION No.12, RETAINS AN EASEMENT UPON EACH LOT FOR THE PURPOSES OF INSTALLING AN APPROVED OSSF ON THE LOT AS DESCRIBED ON SHEET No.2 OF THIS PLAT.

18.– AN OFF–STREET PARKING LOT SITE PLAN & DRAINAGE PLAN APPROVAL BY THE HIDALGO COUNTY PLANNING DEPARTMENT SHALL BE REQUIRED FOR COMMERCIAL AT THE TIME OF APPLICATION FOR CONSTRUCTION PRIOR TO THE ISSUANCE OF A BUILDING AND/OR DEVELOPMENT PERMIT. NO WATER OR LIGHT CLEARANCES SHALL BE ISSUED UNTIL THE SITE PLAN, DRAINAGE PLAN AND OSSF PLAN ARE APPROVED AND PROPOSED IMPROVEMENTS ARE CONSTRUCTED IN ACCORDANCE WITH COUNTY AND STATE STANDARDS.

19. THE RESIDENTIAL LOTS SHOULD REFLECT SERVICE BY A 3/4" METER.

20. ALL PUBLIC UTILITIES EASEMENTS DEDICATED BY THIS PLAT SHALL BE A MINIMUM WIDTH OF 15.00 FEET AS PER THE HIDALGO COUNTY MODEL SUBDIVISION RULES. BY SIGNING THIS PLAT DEVELOPER AND ENGINEER CERTIFY THAT ALL OTHER EASEMENTS SHOWN COMPLY WITH THE SIZE REQUIRED BY EACH UTILITY PROVIDER OCCUPYING AN EASEMENT.

21. MAINTENANCE NOTE FOR REGIONAL DRAINAGE POND AREA

**LOCATION OF SUBDIVISION WITH RESPECT TO THE EXTRATERRITORIAL JURISDICTION OF A MUNICIPALITY:**
**EDUARDO'S SUBDIVISION No.12 IS LOCATED IN WEST HIDALGO COUNTY, APPROXIMATELY 3,050.0 FEET NORTH OF MILE 3 NORTH ROAD (FM 2221), AND ON THE EAST SIDE OF BENTSEN PALM DRIVE. THE ONLY NEARBY MUNICIPALITY IS THE CITY OF MISSION ACCORDING TO THE OFFICIAL MAP IN THE OFFICE OF THE SECRETARY OF THE CITY OF MISSION (POPULATION 77,058), EDUARDO'S SUBDIVISION No.12 LIES APPROXIMATELY 1.15 MILES FROM THE CITY LIMITS AND IT IS WITHIN THE CITY OF MISSION'S FIVE–MILE EXTRATERRITORIAL JURISDICTION (ETJ) UNDER LOCAL GOVERNMENT CODE § 212.001 AND LIES IN PCT. NO. 3.**

## HIDALGO COUNTY
## CERTIFICATE OF PLAT APPROVAL

**I THE UNDERSIGNED CERTIFY THAT THIS PLAT OF EDUARDO'S SUBDIVISION No.12 WAS REVIEWED AND APPROVED BY THE HIDALGO COUNTY RIGHT OF WAY DEPARTMENT ON _____, _____**

_____ _____
HIDALGO COUNTY RIGHT OF WAY DIRECTOR DATE

## PLANNING & ZONING COMMISSION ACKNOWLEDGMENT

THIS PLAT OF EDUARDO'S SUBDIVISION No. 12 HAS BEEN SUBMITTED TO AND CONSIDERED BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF MISSION, TEXAS AND IS HEREBY APPROVED BY SUCH COMMISSION.

DATED THIS _____ DAY OF _____, 20___.

_____
CHAIRMAN

## CITY OF MISSION
## CERTIFICATE OF APPROVAL

**UNDER LOCAL GOVERNMENT CODE 212.0115(B) WE THE UNDERSIGNED CERTIFY THAT THIS PLAT OF EDUARDO'S SUBDIVISION No. 12 WAS REVIEWED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF MISSION.**

_____ _____
MAYOR OF CITY OF MISSION DATE

ATTEST: _____ _____
CITY SECRETARY DATE

## INDEX OF SHEETS


**SHEET 1.– HEADING; INDEX: LOCATION MAP AND ETJ; PRINCIPAL CONTACTS; PLAT WITH LOTS, STREETS, AND EASEMENT DESIGNATIONS; LEGAL DESCRIPTION (METES AND BOUNDS); SURVEYOR'S AND ENGINEER'S CERTIFICATION; PLAT NOTES AND RESTRICTIONS; OWNERS DEDICATION, CERTIFICATION, AND ATTESTATION; COUNTY CLERK'S RECORDING CERTIFICATE; HIDALGO COUNTY CERTIFICATE OF PLAT APPROVAL; DESCRIPTION OF LOCATION OF SUBDIVISION WITH RESPECT TO THE ETJ OF A MUNICIPALITY AND DESIGNATE THE PRECINT THE PROJECT IS SITUATED; H.C.D.D. CERTIFICATION; IRRIGATION DISTRICT CERTIFICATE OF APPROVAL; RIGHT OF WAY CERTIFICATION, HCHD CERTIFICATION; REVISION NOTES.**

**SHEET 2.– WATER & SANITARY SEWER COLLECTION YSTEM DISTRIBUTION MAP, ENGINEERING REPORT (ENGLISH AND SPANISH VERSION), INCLUDING DESCRIPTION OF WATER AND ENGINEER'S CERTIFICATION (ENGLISH AND SPANISH VERSION); TYPICAL WATER SERVICE CONNECTION; SUBDIVIDER CERTIFICATE AND STATEMENT & SANITARY SEWER COLLECTION SYSTEM DISTRIBUTION**

**SHEET 3.– DETAIL SHEET**

**SHEET 4.– PAVING DISTRIBUTION AND DRAINAGE REPORT INCLUDING DESCRIPTION OF DRAINAGE AND HOW IT WILL SERVE THIS DEVELOPMENT; MAP OF TOPOGRAPHY AND DRAINAGE, AND ENGINEER'S CERTIFICATION; REVISION NOTES; TYPICAL ROADWAY SECTION; CURB AND GUTTER SECTION; VALLEY GUTTER SECTION.**

**SHEET 5.– SANITARY SEWER PNP SHEET**

**SHEET 6.– DRAINAGE PNP SHEET**


| SHEET NO. 1 OF 6 SHEETS | FILENAME : K:\PROJECT\SUBDIVISIONS\EDUARDO'S No.12\PLAT | | | |
|---|---|---|---|---|
| | DATE PREPARED | PREPARED BY | CHECKED BY | APPROVED BY |
| | DEC 23, 2013 | M.G. | D. L. I. | G.A.G. |
| | DATE REVISED | REVISED BY | CHECKED BY | APPROVED BY |
| | JAN 9, 2014 | D. L. I. | G.A.G. | G.A.G. |

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |


PRINCIPAL CONTACTS:

| | Name | Address | City & Zip | Phone | Fax |
|---|---|---|---|---|---|
| OWNER: | DIANA LAURA IZAGUIRRE | 7413 N. LA HOMA RD | MISSION, TEXAS 78574 | (956)240–3246 | (956)585–0190 |
| ENGINEER: | GILBERTO A. GRACIA | 7413 N. LA HOMA | MISSION, TEXAS 78574 | (956)584–0554 | (956)584–0190 |
| SURVEYOR: | ALFONSO QUINTANILLA | 124 E. STUBBS | EDINBURG, TEXAS 78539 | (956)381–6480 | (956)381–0527 |

IZAGUIRRE ENGINEERING GROUP, LLC.

7413 N. LA HOMA
MISSION TX, 78574

CONSULTING ENGINEERS
F–10214

TEL. (956) 584–0554
FAX. (956) 584–0190

# EDUARDOS SUBDIVISION No. 12

A 15.0 ACRE TRACT OF LAND BEING ALL OF LOTS 179 AND THE SOUTH 5.0 ACRES OUT OF LOT 181, BENTSEN GROVES SUBDIVISION, HIDALGO COUNTY TEXAS, ACCORDING TO MAP OR PLAT THEREOF RECORDED IN VOLUME 7, PAGE 13, MAP RECORDS, HIDALGO COUNTY, TEXAS, AND ACCORDING TO WARRANTY DEED RECORDED UNDER COUNTY CLERK'S DOCUMENT NUMBER 2270285, OFFICIAL RECORDS, HIDALGO COUNTY, TEXAS.

JANUARY 7, 2014.
DRAINAGE REPORT: BY GILBERTO A. GRACIA, P.E.
EDUARDO'S SUBDIVISION No. 12, HIDALGO COUNTY, TEXAS

**I. PROJECT LOCATION**
**EDUARDO'S SUBDIVISION No. 12 consists of 38 single-family residential lots & 2 commercial lots and is comprised of a 15.00 acre tract of land being all of Lot 179 and the south 5.00 acres out of Lot 181, Bentsen Groves Subdivision, Hidalgo County, Texas, according to map or plat thereof recorded in Volume 7, Page 13, Map Records, Hidalgo County, Texas. The property is located on the east side of Bentsen Palm Road and approximately 5,275.00 L.F. south from Mile 5 Road.**

**II. FLOOD PLAIN**
**The subject tract lies in Flood Zone "X"(areas of 500-year flood plain) and in Flood Zone "A" (areas 100-year flood with no base flood elevation determined) in accordance with F.E.MA.-F.I.R.M. Community Panel No. 480334 0290 D, Map Revised June 6, 2000 (** ***Refer to attached FEMA FIRM Map*** **). The portion of this property that lies within Flood Zone "A"has been filled to a minimum elevation of 182.90 and re-designated as Flood Zone "X" as per FEMA LOMR-F letter/case 13-06-2310A, dated May 9, 2013.**

**III. SOIL CONDITIONS**
**A review of the Soil Survey of Hidalgo County, prepared by the USDA Soil Conservation Service, indicates the soil of the subject property is catalogued as #3 of the Brennan series, a nearly level soil on convex uplands.**
**The surface layer of #3 Brennan soil is characteristically fine sandy loam, from 0 to 13 inches (13in. thick), well drained, and permeability is moderately rapid (2.0 to 6.0 in/hr with soil saturated). The subsoil is characteristically sandy clay loam, from 13 to 65 inches (52 in. thick), well drained, and permeability is moderate (0.6 to 2.0 in/hr with soil saturated). This soil is listed in Hydrologic Group B. Soils of this hydrologic group do not contain soil layers that impede or obstruct the downward movement of water though the soil (permeability). Surface runoff is medium.**

**IV. EXISTING CONDITIONS**
**The subject tract is currently undeveloped, vacant land. USGS topographic quadrant maps indicate that the existing terrain of the general area has a slight slope grade (approximately 0-0.5%) towards the east. Existing runoff from the subject property is by form of sheet runoff flowing overland in an easterly direction from basin overflow to basin overflow and will ultimately outfall into the West Main Drain Ditch. In accordance with the drainage policies of Hidalgo County, the Rationale Method was employed to determine existing storm water runoff of a 25-year storm event for this proposed subdivision as Q= 10.37 cubic feet per second . Storm water runoff in this general area is naturally directed towards a dedicated drainage pond area located at the southwest corner of La Homa Meadows Phase II; more particularly, midway between La Homa Road and Bentsen Palm Drive on the north side of Mile 4 Road.**

**V. VI. CERTIFICATION:PROPOSED CONDITIONS**
**A 25-yr storm water detention pond with a total volume of 34,949 cubic-feet (0.8023 acre feet) will be constructed within the subdivision. Said pond shall be constructed in accordance with the rules and regulations of Hidalgo County referenced to such ponds. Storm water runoff shall be directed towards the central street and shall be intercepted by curb inlets to be located approximately 600 feet east of Bentsen Palm Drive, being approximately 700 feet west of said pond. An 24" drain line shall connect said curb inlets to said pond and an 8" "bleeder" line will be installed from said pond approximately 100 feet to the northeast to connect to the previously mentioned La Homa Meadows Phase II drainage pond area. Also, a proposed 18" overflow relief pipeline will be installed along the north side of Mile 4 Road right-of-way from the previously mentioned La Homa Meadows Phase II drainage pond area east to a TxDOT curb inlet on the west side of said La Homa Road.**

**VI. CERTIFICATION:**
**By my signature below, I certify that by graphical plotting this subdivision lies in Flood Zone "X"(areas of 500-year flood plain) and in Flood Zone "A" (areas 100-year flood with no base flood elevation determined) in accordance with F.E.MA.-F.I.R.M. Community Panel No. 480334 0290 D, Map Revised June 6, 2000, and that the portion of this property that lies within Flood Zone "A" has been filled to a minimum elevation of 182.90 and is re-designated as Flood Zone "X" as per FEMA LOMR-F letter/case 13-06-2310A, dated May 9, 2013.**

GILBERTO A. GRACIA
REGISTERED PROFESSIONAL ENGINEER No. 62477
IZAGUIRRE ENGINEERING GROUP, LLC.
7413 N. LA HOMA ROAD
MISSION, TEXAS 78574

## COST ESTIMATE

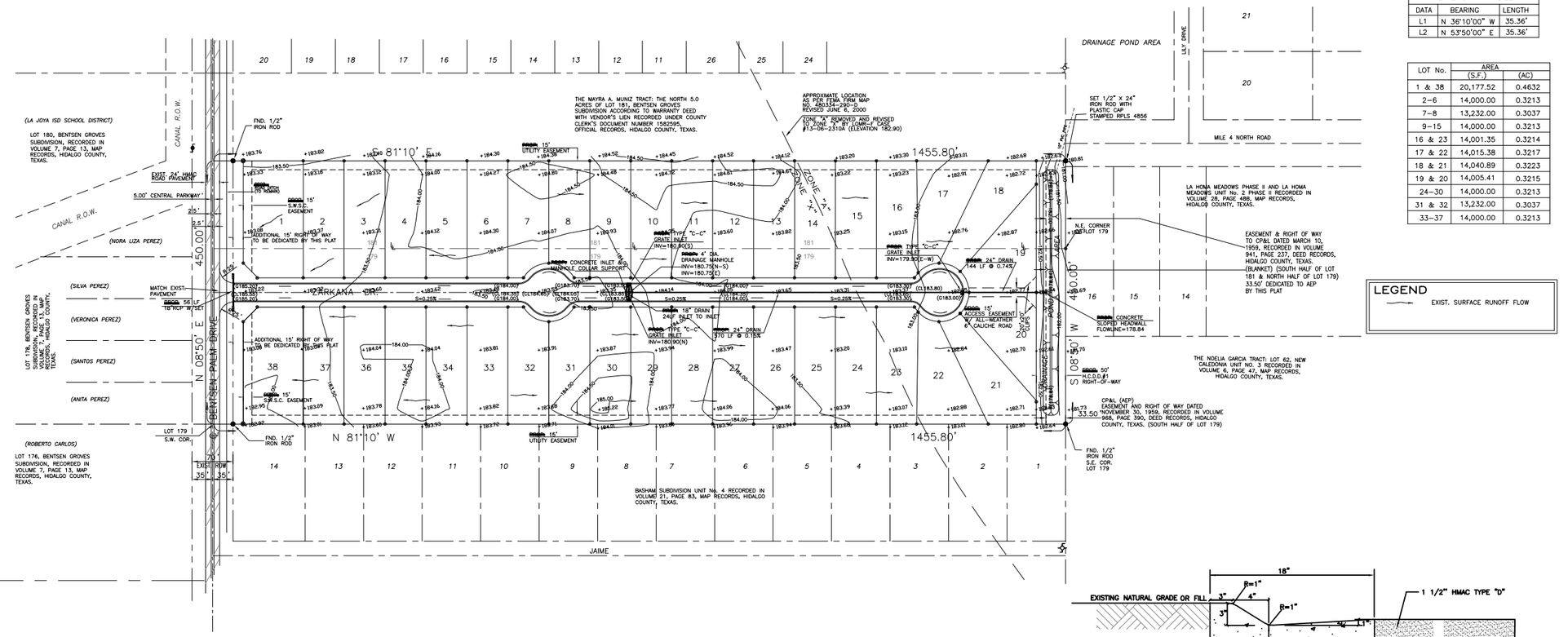
| | |
|---|---|
| **WATER DISTRIBUTION:** | **$ 32,888.00** |
| **PAVING IMPROVEMENTS:** | **$ 92,000.00** |
| **DRAINAGE IMPROVEMENTS:** | **$ 3,200.00** |
| **SEPTIC TANK (OSSF):** | **$ 38,400.00** |

SCALE 1" = 100'

**AS-BUILT**
JANUARY 7, 2014

GILBERTO A. GRACIA — 62477 — REGISTERED PROFESSIONAL ENGINEER — STATE OF TEXAS

# MAP OF TOPOGRAPHY AND DRAINAGE:




| CURVE | DELTA | RADIUS | LENGTH |
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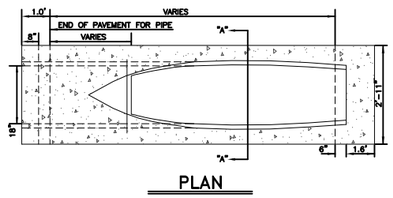
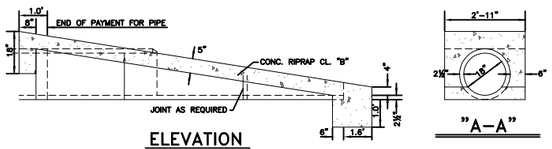
| 33–37 | 14,000.00 | 0.3213 |

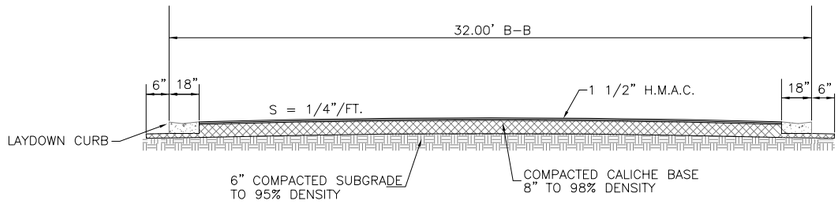
**LEGEND**
EXIST. SURFACE RUNOFF FLOW



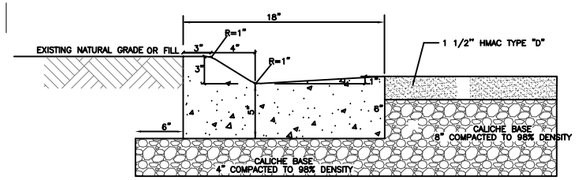

PLAN



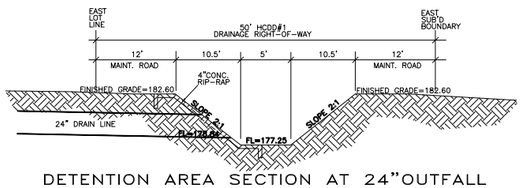

SAFETY END TREATMENT
NOT TO SCALE




STREET SECTION
NOT TO SCALE




3"LAYDOWN CURB & GUTTER
N.T.S




DETENTION AREA SECTION AT 24"OUTFALL
NOT TO SCALE

PRINCIPAL CONTACTS:

| | Name | Address | City & Zip | Phone | Fax |
|---|---|---|---|---|---|
| OWNER: | DIANA LAURA IZAGUIRRE | 7413 N. LA HOMA RD | MISSION, TEXAS 78574 | (956)240-3246 | (956)585-0190 |
| ENGINEER: | GILBERTO A. GRACIA | 7413 N. LA HOMA | MISSION, TEXAS 78574 | (956)584-0554 | (956)584-0190 |
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7413 N. LA HOMA
MISSION TX, 78574
CONSULTING ENGINEERS
F-10214
TEL. (956) 240-3246
FAX. (956) 584-0554


| SHEET NO. 4 OF 5 SHEETS | FILENAME : K:\PROJECT\SUBDIVISIONS\EDUARDO'S No.12\PAVING SHEET | | | |
|---|---|---|---|---|
| | DATE PREPARED | PREPARED BY | CHECKED BY | APPROVED BY |
| | DEC 23, 2013 | M.G. | D. L. L | G.A.G. |
| | DATE REVISED | REVISED BY | CHECKED BY | APPROVED BY |
| | JAN 14 2013 | D. L. L | G.A.G. | G.A.G. |

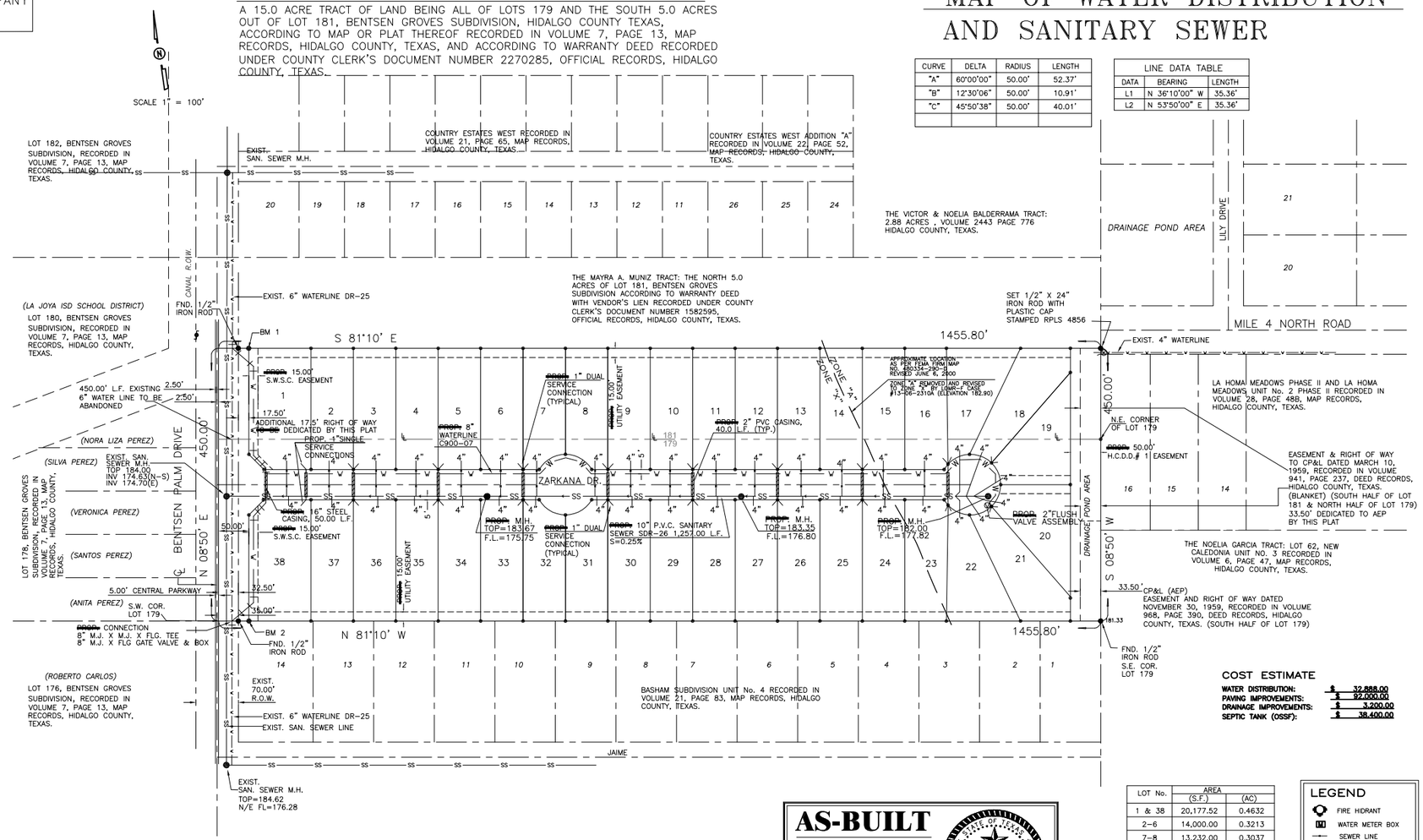
| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| | | | | |

ALL WATERLINE CONSTRUCTION SHALL REFERENCE SHARYLAND WATER SUPPLY COMPANY CONSTRUCTION STANDARDS. CONTRACTOR SHALL REFERENCE SHARYLAND WATER SUPPLY COMPANY STANDARD DETAILS WHENEVER CONFLICTS ARISE.

# EDUARDOS SUBDIVISION No. 12

A 15.0 ACRE TRACT OF LAND BEING ALL OF LOTS 179 AND THE SOUTH 5.0 ACRES OUT OF LOT 181, BENTSEN GROVES SUBDIVISION, HIDALGO COUNTY TEXAS, ACCORDING TO MAP OR PLAT THEREOF RECORDED IN VOLUME 7, PAGE 13, MAP RECORDS, HIDALGO COUNTY, TEXAS, AND ACCORDING TO WARRANTY DEED RECORDED UNDER COUNTY CLERK'S DOCUMENT NUMBER 2270285, OFFICIAL RECORDS, HIDALGO COUNTY, TEXAS.

# MAP OF WATER DISTRIBUTION AND SANITARY SEWER

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## COST ESTIMATE

| | |
|---|---|
| WATER DISTRIBUTION: | $ 32,888.00 |
| PAVING IMPROVEMENTS: | $ 92,000.00 |
| DRAINAGE IMPROVEMENTS: | $ 5,200.00 |
| SEPTIC TANK (OSSF): | $ 38,400.00 |

| LOT No. | AREA (S.F.) | AREA (AC) |
|---|---|---|
| 1 & 38 | 20,177.52 | 0.4632 |
| 2–6 | 14,000.00 | 0.3213 |
| 7–8 | 13,232.00 | 0.3037 |
| 9–15 | 14,000.00 | 0.3213 |
| 16 & 23 | 14,001.35 | 0.3214 |
| 17 & 22 | 14,015.38 | 0.3217 |
| 18 & 21 | 14,040.89 | 0.3223 |
| 19 & 20 | 14,005.41 | 0.3215 |
| 24–30 | 14,000.00 | 0.3213 |
| 31 & 32 | 13,232.00 | 0.3037 |
| 33–37 | 14,000.00 | 0.3213 |

LEGEND
- FIRE HIDRANT
- WATER METER BOX
- SEWER LINE
- WATER LINE
- SERVICE LINES

**AS-BUILT**
JANUARY 7, 2014
STATE OF TEXAS — GILBERTO A. GRACIA — 62477 — REGISTERED PROFESSIONAL ENGINEER

FINAL ENGINEERING REPORT FOR EDUARDO'S SUBDIVISION No. 12:
BY GILBERTO A. GRACIA

WATER SUPPLY: Description and Costs.

WATER SUPPLY:
EDUARDO' S SUBDIVISION No. 12 WILL BE PROVIDED WITH POTABLE WATER BY THE WATER COMPANY OF SHARYLAND WATER SUPPLY COMPANY S.W.S.C. THE SUBDIVIDER AND COMPANY S.W.S.C. SIGNED A CONTRACT BY WHICH,THE SUBDIVISION WILL RECEIVE SUFFICIENT WATER PROVISION FOR AT LEAST 30 YEARS AND S.W.S.C. HAS PROVIDED SUFFICIENT DOCUMENTATION TO ESTABLISH THE LONG TERM QUANTITY AND QUALITY OF THE AVAILABLE WATER SUPPLIES TO SERVE THE FULL DEVELOPMENT OF THIS SUBDIVISION.

S.W.S.C. HAS AN EXISTING 6" DIAMETER LINE RUNNING WITHING THE BENTSEN PALM RD ROW ON THE EAST SIDE OF BENTSEN ROAD.

THE WATER SYSTEM FOR EDUARDO' S No. 12 CONSISTS OF A 8" DIAMETER WATER LINE THAT TAPS INTO THE EXISTING LINE OF 6" DIAMETER THAT RUNS WITHIN ZARKANA DRIVE ROW LOCATED AT THE EAST SIDE OF BENTSEN ROAD, THE PROPOSED 8" DIAMETER LINE RUNS TOWARDS THE EAST APPROXIMATELY 1292 FEET ON THE NORTH SIDE OF NEVADA DR.

FROM THE 8" DIAMETER WATER LINE, EIGHTEEN (18) DOUBLE SERVICES OF 1" AND TWO (2) SINGLE SERVICE OF 1" OF DIAMETER ARE COMING OUT OF THIS LINE. SAID SERVICES TERMINATE AT THE WATER METERS OF EACH LOT FOR A TOTAL OF THIRTY EIGHT (38) WATER SERVICES. THE 8" DIAMETER LINE, THE DOUBLE SERVICES LINES, AND THE WATER METER BOXES WILL BE INSTALLED AT A TOTAL COST OF $32,888.00, OR $865.47 PER LOT. IN ADDITION THE SUBDIVIDER WILL PAY S.W.S.C. THE AMOUNT OF $95,000.00 WHICH COVERS THE $2,500.00 COST PER LOT STATED IN THE 30 YR WATER SERVICE AGREEMENT

WHICH SUM REPRESENTS THE TOTAL COST OF WATER METER, RIGHTS ACQUICITION FEES, AND ALL MEMBERSHIP OR OTHER FEES ASSOCIATED WITH CONNECTING THE INDIVIDUAL LOTS IN THE SUBDIVISION TO S.C.S.C. UPON REQUEST BY THE LOT OWNER, S.W.S.C. WILL PROMPTLY INSTALL AT No.CHARGE THE WATER METER FOR THAT LOT. THE ENTIRE WATER FACILITIES HAVE BEEN APPROVED BY S.W.S.C. AND SAID DISTRIBUTION SYSTEM IS OPERABLE AS OF THE DATE OF THE RECORDING OF THE PLAT.

SANITARY SEWAGE DESCRIPTION AND EXPENSES:
THE SANITARY SEWAGE SYSTEM OF EDUARDO' S SUBDIVISION No. 12 CONSISTS OF A 8" DIAMETER SEWER LINE THAT TAPS INTO THE EXISTING LINE OF 8" DIAMETER THAT RUNS WITHIN THE BENTSEN PALM RD ROW. THE PROPOSED 8" DIAMETER LINE RUNS TOWARDS THE EAST APPROXIMATELY 1292 FEET ON THE SOUTH SIDE OF NEVADA DR. SAID SERVICES TERMINATE AT THE SEWER METERS OF EACH LOT FOR A TOTAL OF THIRTY EIGHT (38) SANITARY SEWER SERVICES.

CERTIFICATION: WITH MY SIGNATURE, I CERTIFY THAT THE SERVICES AND SYSTEMS OF WATER AND SEWAGE SERVICE FACILITIES DESCRIBED IN THIS DOCUMENT, FULFILL THE MODEL SUBDIVISION RULES ADOPTED IN SECTION 16.343 OF TEXAS WATER CODE. I ALSO CERTIFY THAT THE EXPENSES TO INSTALL THE DRAINAGE AND WATER SYSTEMS ARE THE FOLLOWING: THE LINE OF 6" OF DIAMETER, THE LINES OF DOUBLE SERVICES OF 1" , THE LINES OF SINGLE SERVICES OF 3/4" AND THE WATER METERS BOXES WERE SETTLED TO A TOTAL COST OF $32,888.00 OR $865.47 PER LOT. THE OWNER OF THE SUBDIVISION ADDITIONALLY PAID TO S.W.S.C. THE AMOUNT OF $95,000.00 OR $ 2,500.00 PER LOT ACCORDING TO THE CONTRACT AND THE DOCUMENT OF 30 YEARS OF POTABLE WATER SERVICE, THAT COVERS THE WATER METER WITH WATER, (INCLUDING COSTS OF THE INSTALLATION OF EACH WATER METER, TARIFFS OF CONNECTION AND MEMBERSHIPS).

WATER:
THE WATER SYSTEM IS COMPLETELY CONSTRUCTED, WITH THE INSTALLATION OF THE WATER METERS, THE GRAND TOTAL COST IS US $3,365.47 PER LOT WHICH IS EQUIVALENT TO US $127,888.00 FOR THE WHOLE SUBDIVISION.

SEWAGE:
I ALSO CERTIFY THAT THE SANITARY SEWER SYSTEM COST US $1.010,52 EACH AND A TOTAL COST OF US$ 38,400.00 FOR THE WHOLE SUBDIVISION.

STATE OF TEXAS — GILBERTO A. GRACIA — 62477 — REGISTERED PROFESSIONAL ENGINEER

GILBERTO A. GRACIA P.E.–No. 62477 DATE

This seal appearing on this document was authorized by Gilberto A. Gracia, P.E. No. 62477 on the above designated date.

EDUARDO'S SUBDIVISIÓN No. 12.
POR: GILBERTO A. GRACIA

PROVISIÓN DE AGUA: DESCRIPCIÓN, Y GASTOS.

EDUARDO'S SUBDIVISIÓN No. 12 SERÁ PROVISTA DE AGUA POTABLE POR LA COMPAÑÍA DE SHARYLAND WATER SUPPLY COMPANY (S.W.S.C.). EL SUBDIVIDOR Y LA COMPAÑÍA DE AGUA, S.W.S.C FIRMARON UN CONTRATO POR EL CUAL LA SUBDIVISIÓN RECIBIRÁ PROVISIÓN DE AGUA SUFICIENTE POR LOS PRÓXIMOS 30 AÑOS Y S.W.S.C. PRESENTO SUFICIENTE DOCUMENTACIÓN PARA ESTABLECER A LARGO PLAZO LA CANTIDAD Y CALIDAD DE AGUA ABASTECIDA PARA SERVIR EL FUTURO DESARROLLO DE LA SUBDIVISIÓN.

S.W.S.C TIENE UNA LÍNEA DE 6" DE DIÁMETRO EXISTENTE, CORRIENDO POR EL LADO ESTE DE LA CALLE BENTSEN RD. LA LÍNEA DE AGUA PRINCIPAL DE ESTE DESARROLLO CONSISTE EN LÍNEAS DE AGUA DE 8" DE DIÁMETRO DE PVC.

EL SISTEMA EXISTENTE DE AGUA PARA EDUARDO'S No. 12 CONSISTE DE UNA LÍNEA DE AGUA DE 8" DE DIÁMETRO QUE CONECTA CON LA LÍNEA EXISTENTE DE 6" DE DIÁMETRO QUE CORRE DENTRO DE UN ROW EN EL LADO ESTE DE BENTSEN ROAD, LA LÍNEA PROPUESTA DE 8" DE DIÁMETRO CORRE HACIA EL ESTE APROXIMADAMENTE 1292 PIES POR EL LADO NORTE DE LA CALLE NEVADA DR. Y CORRE DENTRO DE UN ROW DE LA CALLE NEVADA DRIVE EN EL LADO NORTE.

DE LA LÍNEA DE 8" DE DIÁMETRO SE DESPRENDEN DICIOCHO (18) SERVICIOS DOBLES DE 1" DE DIÁMETRO Y DOS (2) SERVICIOS SENCILLOS DE 1" DE DIAMETRO, QUE VAN HACIA LOS MEDIDORES DE CADA LOTE. PARA UN TOTAL DE TREINTAOCHO (38) SERVICIOS DE AGUA.

LA LÍNEA DE 8" DE DIÁMETRO, LAS LÍNEAS DE SERVICIOS DOBLES DE 1", Y LAS CAJAS DE LOS MEDIDORES SE INSTALARAN A UN COSTO TOTAL DE US $32,888.00 DE LOS CUALES SE CUBRIÓ US $865.47 POR LOTE. EL DUEÑO DE LA SUBDIVISIÓN PAGO ADICIONALMENTE A S.W.S.C. LA CANTIDAD DE $95,000.00 O $ 2,500.00 POR LOTE DE ACUERDO AL CONTRATO Y DOCUMENTO DE 30 AÑOS DE SERVICIO DE AGUA POTABLE QUE CUBRE EL MEDIDOR DE AGUA, (INCLUYENDO COSTOS DE LA INSTALACIÓN DE CADA MEDIDOR, TARIFAS DE CONEXIÓN Y MEMBRESIAS). CUANDO EL DUEÑO DEL SOLAR SOLICITE UN MEDIDOR DE AGUA, LA COMPAÑÍA S.W.S.C. INSTALARA EL MEDIDOR SIN COSTO ALGUNO AL DUEÑO. EL SISTEMA DE AGUA ESTARÁ EN FUNCIONAMIENTO COMPLETO ANTES O EN LA FECHA, EN LA CUAL LA SUBDIVISIÓN SEA REGISTRADA EN EL CONDADO DE HIDALGO.

DRENAJE SANITARIO: DESCRIPCIÓN Y GASTOS.

EL DRENAJE SANITARIO DE EDUARDO'S SUBDIVISIÓN No. 12 TENDRÁ CLOACAS Y CONSISTIRA DE UNA LINEA DE 8" DE DIAMETRO QUE SE CONECTARA A LA LINEA EXISTENTE QUE CORRE POR EL LADO ESTE DE LA CALLE BENTSEN RD DENTRO DE EL DERECHO DE PASO. LA LINEA PROPUESTA DE 8" DE DIAMETRO CORRE HACIA EL ESTE APROXIMADAMENTE 1292 PIES EN EL LADO SUR DE LA CALLE NEVADA DR. DICHO SERVICIOS TERMINA EN LOS MEDIDORES DE CLOACA DE CADA LOTE INDIVIDUAL PARA LLEGAR A UN TOTAL DE TREINTAOCHO (38) SERVICIOS DE CLOACA.

EL COSTO ESTIMADO DE LA INSTALACIÓN DE UN SISTEMA DE CLOACA PARA UN LOTE INDIVIDUAL ES DE US$ 1,010.52 EL CUAL DA UN COSTO TOTAL DE $ 38,400.00.
CERTIFICACIÓN:

CON MI FIRMA CERTIFICO QUE: LOS SERVICIOS Y SISTEMAS DE AGUA Y DE DRENAJE SANITARIO, DESCRITOS EN ESTE DOCUMENTO, CUMPLEN CON LOS MODELOS Y LAS REGLAS DE SUBDIVISIÓN (LAS REGLAS GOBERNANDO A LAS SUBDIVISIONES), ADOPTADAS EN LA SECCIÓN 16.343 DEL TEXAS WATER CODE (CÓDIGO DE AGUA DE TEXAS). CERTIFICO QUE LOS GASTOS PARA INSTALAR LOS SISTEMAS DE AGUA Y DE DRENAJE SON LOS SIGUIENTES:

AGUA: EL SISTEMA DE AGUA SERÁ TOTALMENTE CONSTRUIDO, CON LA INSTALACIÓN DE LOS MEDIDORES DE AGUA A $3,365.47 POR LOTE. LO CUAL EQUIVALE A EL GRAN COSTO TOTAL DE $127,888.00 PARA LA SUBDIVISIÓN COMPLETA.

DRENAJE SANITARIO: SE AFIRMA QUE EL SYSTEMA DE CLOACAS COSTARON US$ 1,010.52 CADA UNA Y UN COSTO TOTAL DE US$ 38,400.00 PARA TODA LA SUBDIVISIÓN.

STATE OF TEXAS — GILBERTO A. GRACIA — 62477 — REGISTERED PROFESSIONAL ENGINEER

GILBERTO A. GRACIA P.E.–No. 62477 DATE

This seal appearing on this document was authorized by Gilberto A. Gracia, P.E. No. 62477 on the above designated date.

SUBDIVIDER CERTIFICATION:
1.– BY COMPLETING THE IMPROVEMENTS DESCRIBED ON THE PLAT, SUBDIVIDER WILL COMPLY WITH MINIMUM STATE STANDARDS AND THAT (a.) WATER QUALITY AND CONNECTIONS, INCLUDING WATER METERS, TO THE LOTS MEET SUCH STANDARDS, AND (b.) SEWER CONNECTIONS TO THE LOTS OR SEPTIC TANKS MEET OR WILL MEET SUCH STANDARDS AND WILL BE BY STATE AND COUNTY REGULATIONS.

SUBDIVIDER STATEMENT:
1.– I(WE) DIANA L. IZAGUIRRE SUBDIVIDER OF EDUARDO'S SUBDIVISION No.12 HEREBY CERTIFY SEWER PERMITS HAVE BEEN PAID AND ARE ON FILE WITH THE HCHD AND ANY ADEQUATE DRINKING WATER SOURCE IS IMMEDIATELY AVAILABLE TO EACH LOT OF THE TYPE AND QUALITY TO ENABLE EACH PERSON PURCHASING A LOT TO HAVE ADEQUATE WATER TO COMPLY WITH THE REGULATIONS AND THE LAWS OF THE STATE AS REQUIRED BY STATE AND COUNTY REGULATIONS.

DIANA L. IZAGUIRRE
LAS DIANAS LAND DEVELOPMENT, LLC.
7413 N. LA HOMA ROAD
MISSION, TEXAS 78574
(956) 240–3246

STATE OF TEXAS
COUNTY OF HIDALGO
BEFORE ME, the undersigned notary public, on this day personally appeared DIANA L. IZAGUIRRE, proved to me through her Texas Department of Public Safety Driver License to be the person whose name is subscribed to the foregoing instrumentm who, being by me first duly sworn, declared that the statements therein are true and correct and acknowledged that she executed the same for the purposed and consideration thereby expressed.

Given under my hand and seal of office this _____ day of _____, 2012.

NOTARY PUBLIC – STATE OF TEXAS

GENERAL CONSTRUCTION NOTES:

1. ALL PROPOSED WATER LINES TO BE C–900 DR–25.
2. CONTRACTOR TO INSTALL 1" SERVICE CONNECTIONS TO EVERY LOT & ALL SERVICES TO BE LOCATED IN FRONT OF LOTS APPROXIMATELY 1.0 FOOT FROM LOT LINE. CONTRACTOR TO UTILIZE SINGLE & DOUBLE SERVICE CONNECTIONS AS NEEDED.
3. CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES FOR VERIFICATION OF CONFLICTS PRIOR TO CONSTRUCTION ON SITE.
4. SEE WATER DETAIL SHEET FOR MORE INFORMATION.
5. ALL LOTS SHALL BE PROVIDED WITH SERVICE STUBOUTS AND SAID SEVICE LOCATIONS SHALL BE MARKED ON THE CURB AND GUTTER WITH A "W" NOT LESS THAN 1 1/2" IN SIZE OR IN A MANNER APPROVED BY THE CITY AND SHALL BE 12" BELOW FINISH GRADE ELEVATION.
6. THE RESIDENTIAL LOTS SHOULD REFLECT SERVICE BY A 3/4" METER.

| SHEET NO. 2 OF 5 SHEETS | FILENAME : K:\PROJECT\SUBDIVISIONS\EDUARDO'S No.12\WATER | | | |
|---|---|---|---|---|
| | DATE PREPARED | PREPARED BY | CHECKED BY | APPROVED BY |
| | DEC. 23, 2012. | H.G. | D. L. I. | G.A.G. |
| | DATE REVISED | REVISED BY | CHECKED BY | APPROVED BY |
| | JAN 14 2013 | D. L. I. | G.A.G. | G.A.G. |

| NO. | SHEET | REVISION | DATE | APPROVED |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

PRINCIPAL CONTACTS:

| | Name | Address | City & Zip | Phone | Fax |
|---|---|---|---|---|---|
| OWNER: | DIANA LAURA IZAGUIRRE | 7413 N. LA HOMA RD | MISSION, TEXAS 78574 | (956)240–3246 | (956)585–0190 |
| ENGINEER: | GILBERTO A. GRACIA | 7413 N. LA HOMA | MISSION, TEXAS 78574 | (956)584–0554 | (956)584–0190 |
| SURVEYOR: | ALFONSO QUINTANILLA | 124 E. STUBBS | EDINBURG, TEXAS 78539 | (956)381–6480 | (956)381–0527 |


IZAGUIRRE ENGINEERING GROUP, LLC.
7413 N. LA HOMA
MISSION TX, 78574
CONSULTING ENGINEERS
F–10214
TEL. (956) 240–3246
FAX. (956) 584–0554

**AI-43401** **Precinct #2 13. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Commissioner Hector Palacios **Submitted By:** Erika Zamora, COMM. PCT. #2

**Department:** COMM. PCT. #2

## Information

### CAPTION

1. Approval of interlocal agreement between the Regional Mobility Authority (RMA) and the County of Hidalgo, Tx to provide Right of Way Acquisition Services in which a portion of the proposed roadway is within the County for the US 281/Military Highway Overpass, State Highway 365, and International Bridge Trade Corridor Projects.
2. In accordance with Section 791.014 of the Texas Government Code, requesting approval of the interlocal cooperation agreement project to assist the Regional Mobility Authority (RMA) in the acquisition of right of way for the US 281/Military Highway Overpass, State Highway 365, and International Bridge Trade Corridor Projects.

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** **ACCT. #:**

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

### BUDGETARY IMPACT:

Hidalgo County Precinct 2 ROW Agents will be providing right of way acquisition services to the RMA and the County will bill the RMA at a fixed rate of $1,805.00 per parcel acquired.

## Attachments

Draft Interlocal Agreement

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Erika Zamora (Originator) | Erika Zamora | 02/28/2014 04:36 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 04:44 PM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 05:00 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Erika Zamora Started On: 02/28/2014 03:18 PM

Final Approval Date: 02/28/2014

**STATE OF TE AS**

**COUNTY OF HIDALGO**

**INTERLOCAL COOPERATION AGREEMENT**
**BETWEEN HIDALGO COUNTYAND**
**HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY**

**THIS AGREEMENT** is made effective as of the day of, 2014 by and between **HIDALGO COUNTY ,** hereinafter referred to as the "County", and **HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY,** hereinafter referred to as the "RMA", pursuant to the provisions of the Texas Interlocal Cooperation Act, as follows:

**WHEREAS**, the County is a political subdivision initially created under the provisions of Article III, Section 52, of the Texas Constitution, pursuant to an election held within the territory affected, on April 9, 1908, and subsequently converted to be operated under the provisions of Article XVI, Section 59 thereof, to address drainage and flooding planning and construction in Hidalgo County (the "County");

**WHEREAS**, the RMA is a regional mobility authority created and operating under Chapter 370, Texas Transportation Code to address mobility needs in the County;

**WHEREAS,** the RMA is in need of certain right-of-way acquisition services required for a proposed roadway (collectively, the "Right of Way Services"), as further described in Exhibit B attached hereto;

**WHEREAS**, a portion of the proposed roadway for which the Right of Way Acquisition Services are proposed is located within the County and by partnering through this Agreement, the parties will be able to share expenses and economics in delivering the proposed services;

**WHEREAS**, the County, through its own forces or third party contractors is available and willing to assist the RMA by providing such Right of Way Acquisition Services to the RMA;

**WHEREAS**, the parties hereto have determined it is beneficial to both parties to enter into this Agreement and that the benefits to each are reasonable; and

**WHEREAS**, the County and the RMA are authorized to enter into this Agreement pursuant to the Interlocal Cooperation Act, Texas Government Code Section 791.001 et. seq., (the "Act"), which authorizes local governments to contract with each other to perform governmental functions and services under the terms of the Act.

**NOW THEREFORE,** the County and the RMA, in consideration of the mutual covenants expressed hereinafter, agree as follows:

1. **RMA Responsi ilities.**

   A. The RMA will provide to the Countya right of way strip map indicating where right of way acquisition services are required. The right of way strip map for said roadway will be provided in a timely manner as to allow the County sufficient time to acquire right of way as required by the RMA so as not to delay the development schedule of the RMA. Projected schedule for development of RMA projects and associated right of way acquisition date shall be attached as Exhibit A to this agreement.

   B. The RMA will provide to the County any and all maps, parcel sketches, title reports, appraisals, deeds and title commitments required by the RMA for RMA's proposed roadway relating to acquisition of right of way as specified above.

   C. The RMA, after receiving notice from the County of the approval of the RMA's right of way acquisition schedule, may issue a notice to proceed to the County for the Right of Way Acquisition Services.

   D. The RMA will approve all final offers to acquire right of way for the project and will prepare all closing documents. The RMA will also process all payments for right of way acquired.

2. **County Responsi ilities.**

   A. County, within seven (7) days after review of information and documentation from the RMA, may request clarification and/or additional information and documents from the RMA prior to approving the RMA's acquisition schedule for the proposed roadway.

   B. County will adhere to the Texas Department of Transportation State Purchase of Right of Way Policies and Procedures during the acquisition process.

   C. County shall bill the RMA at a cost per parcel for Right of Way Acquisition Services and shall be attached as Exhibit B.

   D. Upon receipt of a written notice to proceed by the RMA, the County shall begin performing the Right of Way Acquisition Services for the RMA.,

E. On or before the 15th day of each month, County shall provide the RMA with a monthly progress report of the preceding month, including all activities carried out in pursuit of this Agreement.

. **Payment or Ser ices.**

A. The County shall present aRight of Way Acquisition Services costs to the RMA on a periodic basis for payment. The cost for the services shall be on a per parcel basisand shall be reimbursed to the County by the RMA within 30 days of receipt of the payment request.

4. **Term and Termination.**

A. This Agreement shall be for a period of two (2) years after the date first written above and may be renewed for three (3) additional one (1) year terms under the same terms and conditions upon written agreement between the parties.

B. Should either party elect to terminate this Agreement prior to the end of the term and before the Engineering Services and Construction Services are complete, the County shall perform a final reconciliation upon notice of termination based on work completed through the date of such notice of termination.

5. **Miscellaneous.**

A. **Con lict o Applica le La** . Nothing in this Agreement shall be construed so as to require the commission of any act contrary to law, and whenever there is any conflict between any provision of this Agreement and any present or future law, ordinance, or administrative, executive or judicial regulation, order or decree, or amendment thereof, contrary to which the parties have no legal right to contract, the later shall prevail, but in such event the affected provision or provisions of this Agreement shall be modified only to the extent necessary to bring them within the legal requirements and only during the time such conflict exists.

B. **No Wai er.** No waiver by any party hereto of any breach of any provision of the Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

C. **Entire Agreement.** This Agreement contains the entire contract between the parties hereto and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth

herein. This Agreement may be modified or amended only by agreement in writing executed by County and the RMA, and not otherwise.

D. **TE AS LAW TO APPLY.** THIS AGREEMENT SHALL BE CONSTRUED UNDER AND IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS, AND ALL OBLIGATIONS OF THE PARTIES CREATED HEREUNDER ARE PERFORMABLE IN HIDALGO COUNTY, TEXAS. THE PARTIES HEREBY CONSENT TO PERSONAL JURISDICTION IN HIDALGO COUNTY, TEXAS.

E. **Notice.** Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests or communication required or permitted hereunder shall be in writing and shall either be (i) personally delivered against a written receipt, or (ii) sent by registered or certified mail, return receipt requested, postage prepaid and addressed to the parties at the addresses set forth below, or at such other addresses as may have been theretofore specified by written notice delivered in accordance herewith:

| | |
|---|---|
| If to Hidalgo County: | Hidalgo County<br>Attention: Ramon Garcia, County Judge<br>902 N. Doolittle Road<br>Edinburg, Texas 78539 |
| If to RMA: | Hidalgo County Regional Mobility Authority<br>Attention: Pilar Rodriguez, P.E., Executive Director<br>118 S. Cage Blvd. 4th Floor<br>Pharr, Texas 78577 |

Each notice, demand, request or communication which shall be delivered or mailed in the manner described above shall be deemed sufficiently given for all purposes at such time as it is personally delivered to the addressee or, if mailed, at such time as it is deposited in the United States mail.

F. **Additional Documents.** The parties hereto covenant and agree that they will execute such other and further instruments and documents as are or may become necessary or convenient to effectuate and carry out the terms of this Agreement..

G. **Successors.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective, legal representatives, successors, and assigns where permitted by this Agreement.

H. **Assignment.** This Agreement shall not be assignable.

I. **Headings.** The headings and captions contained in this Agreement are solely for convenience reference and shall not be deemed to affect the meaning or interpretation of any provision of paragraph hereof.

J. **Gender and Num er.** All pronouns used in this Agreement shall include the other gender, whether used in the masculine, feminine or neuter gender, and singular shall include the plural whenever and so often as may be appropriate.

K. **Aut ority to Execute.** The execution and performance of this Agreement by County and the RMA have been duly authorized by all necessary laws, resolutions or corporate action, and this Agreement constitutes the valid and enforceable obligations of County and the RMA in accordance with its terms.

L. **Go ernmental Purpose.** Each party hereto is entering into this Agreement for the purpose of providing governmental services or functions and will pay for such services out of current revenues available to the paying party as herein provided.

M. **Commitment o Current Re enues Only.** In the event that, during any term hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Agreement, then any party may terminate this Agreement upon sixty (60) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. §271.903.

N. **Dispute Resolution.** Any dispute between the parties concerning the services or costs hereunder shall be settled by mediation. If mediation is unsuccessful, then the parties shall go to trial in a district court in Hidalgo County under Texas State law.

O. **Indemni ication**. To the extent permitted by law, the County shall save and hold harmless the RMA and its officers and employees from all claims, liability, loss (including property damage or personal injury) and expenses incurred due to the activities of itself, its agents, its subcontractors or employees performed under this Agreement and which are caused by or result from error, omission, or negligent act, including

any violation of any statute, ordinance or regulation by the County or any person employed or engaged by the County, and the defense of any such claims, liability, action or loss. To the extent permitted by law, the RMA shall save and hold harmless the County and its officers and employees from all claims, liability, loss (including property damage or personal injury), and expenses incurred due to the activities of itself, its agents, its subcontractors or employees performed under this Agreement and which are caused by or result from error, omission, or negligent act, including any violation of any statute, ordinance or regulation by the RMA or any person employed or engaged by the RMA, and the defense of any such claims, liability, action or loss.

**signatures to ollo**

**WITNESS THE HANDS OF THE PARTIES** effective as of the day and year first written above.

**HIDALGO COUNTY**

By:_____
Ramon Garcia, County Judge

**HIDALGO COUNTY REGIONAL MOBILITY AUTHORITY**

By:_____ Ramor
Dennis Burleson, Chair of
Board of Directors

APPROVED AS TO FORM:

ATLAS, HALL & RODRIGUEZ, LLP

By: _____
Stephen L. Crain

EXHIBIT A

Dates of Completion of Right of Way (ROW) Acquisition for US 281/Military HighwayOverpass, State Highway 365 and International Bridge Trade Corridor Projects

| ROW Description | Date of Completion for ROW Acquisition |
|---|---|
| BSIF Connector – X Parcels | August 31, 2014 |
| US 281/Military Highway Overpass Project – 29Parcels | August 31, 2014 |
| State Highway 365 Project – 273 Parcels | December 31, 2015 |
| International Bridge Trade Corridor Project – 140 Parcels | June 30, 2015 |

# EXHIBIT B

## RIGHT OF WAY ACQUISITION SERVICES

The County shall provide Right of Way Agents to the RMA that will provide services in accordance with the procedures in the Texas Department of Transportation Right of Way Manuals and such services shall be billed as noted below:

1. ROW Agent Services will be billed by the County at a fixed rate of $1,805.00 per parcel acquired.

**AI-43258** **Precinct #2** **13. B.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Angela Garcia, COMM. PCT. #2

**Department:** COMM. PCT. #2

## Information

### CAPTION

Appointment/Reappointment of Hidalgo County Regional Mobility Authority (HCRMA) member.

### BACKGROUND

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/19/2014 04:56 PM |
| Obdett Calzada | Obdett Calzada | 02/27/2014 02:23 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Angela Garcia Started On: 02/19/2014 04:19 PM

Final Approval Date: 02/28/2014

**AI-43319** **Precinct #2** **13. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Commissioner Hector Palacios **Submitted By:** Erika Zamora, COMM. PCT. #2

**Department:** COMM. PCT. #2

## Information

### CAPTION

Precinct 2 ICA W/SJ-Eldora & Sgt Trevino Rd (1200):
Approval of 2014 appropriation of funds from Pct 2 Road & Bridge fund balance in the total amount of $682,929.86 to fund construction contract# 13-293-12-20 with Texas Cordia Construction, LLC for "Hidalgo County Pct 2 Lowering of Canal Crossing & Road Widening at Eldora & Sgt Trevino Road.

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1200-431-00-122-091-0-841

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funding will be available from fund balance. Funding is currently in account#3-1200-431-00-122-091-0-841.

## Attachments

Appropriation

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 04:56 PM |
| Glinda Pacheco | Glinda Pacheco | 02/27/2014 04:47 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Erika Zamora Started On: 02/24/2014 04:09 PM

Final Approval Date: 02/28/2014

**DATE:** March 4, 2014

**DEPARTMENT HEAD:** Raul Silguero

**DEPARTMENT NAME:** Hidalgo County Precinct 2

**ACCOUNT NUMBER:** 4-1200-431-00-122-091-0-841

**Contact Person:** Erika Zamora **Ph#** 956-787-1891

# 2014
**Appropriation**

**SUBJECT:** **Budget Amendments** (increase (decrease)) in accordance with Local Government Code, Chapter 111, § 111.070, Item C (2).

Honorable Commissioners' Court of Hidalgo County:

I would like to request the following Budget Amendments (increase (decrease)) in accordance with Local Government Code, Chapter 111, § 111.070, Item C (2).

| INCREASE ACCOUNT NUMBER(S) | ACCOUNT (OBJECT) NAME | AMOUNT |
|---|---|---|
| | | |
| 4-1200-431-00-122-091-0-841 | Pct 2 ICA W/SJ-Eldora & Sgt Treviño Rd- Aid to Govt Agency | 682,929.86 |
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| | **TOTAL BUDGET INCREASE (DECREASE)** | $ 682,929.86 |

REASON: Appropriation of monies from Pct 2 R&B Fund Balance into Pct 2 Eldora & Sgt Treviño Rd Project to fund Contract# 13-13-293-12-20 awarded to Texas Corida on 12/20/13 AI#42350. Monies are currently available in account no. 3-1200-431-00-122-091-0-841 and will rollover into pct 2 r&b fund balance.

DEPARTMENT HEAD SIGNATURE

APPROVED COMMISSIONERS' COURT

/ /
DATE

ATTEST COUNTY CLERK

**AI-43326** **Precinct #2** **13. D.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Commissioner Hector Palacios **Submitted By:** Erika Zamora, COMM. PCT. #2

**Department:** COMM. PCT. #2

## Information

### CAPTION

Requesting approval to process the following invoices as claims with authority for County Treasurer to issue payment after review, audit, and processing procedures are completed by the County Auditor.

| Vendor | Invoice No | Amount |
|---|---|---|
| Mobile Relays Partners, LTD | AIR0032819 | $30.00 |
| Mobile Relays Partners, LTD | AIR0032822 | $36.00 |
| Mobile Relays Partners, LTD | AIR0032824 | $79.99 |
| Mobile Relays Partners, LTD | AIR0032820 | $137.97 |
| Mobile Relays Partners, LTD | AIR0032818 | $875.90 |

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1X00-4XX-00-122-0XX-

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

### BUDGETARY IMPACT:

Funds available in the following account/purchase orders, as of 2/28/2014.

Invoice AIR0032819 $30.00 Acct # 4-1100-466-00-122-018-0-532
Invoice AIR0032822 $36 through PO# 702539
Invoice AIR0032824 $79.99 through PO# 702540
Invoice AIR0032820 $137.97 through PO# 703268
Invoice AIR0032818 $875.90 through PO# 703269

## Attachments

Mobile Relay Invoices

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 04:51 PM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 02:48 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Erika Zamora Started On: 02/25/2014 10:07 AM

Final Approval Date: 02/28/2014

**Mobile Relays Partners, LTD**
**515 S. 12Th. St**
**P.O. Box 1808**
**McAllen TX, 78505-1808**
**(956)682-5224**

HIDALGO COUNTY
PRECINCT NO. 2
2014 JAN 9 PM 1 56

01/01/2014

## *INVOICE* AIR0032819

***CUST P.O.***

**Bill To:** 117311

Name HIDALGO CO PCT#2-CRC
Address 300 WEST HALL ACRES
SUITE G
PHARR TX78577

**Ship To:** 117311

HIDALGO CO PCT#2-CRC
300 WEST HALL ACRES
SUITE G
PHARR TX, 78577
ATTN: PO#596901

| Qty | Description | Loc | Unit Price | Total |
|---|---|---|---|---|
| 2.00 | UNITS ON SITE MCALLEN | | 15.0000 | 30.00 |

INVOICE RECEIVED BY: _____ ON 1/9/14
GOODS/SERVICES RECEIVED BY: Enita Camas ON 1/1/14

PO # 4-1100-466-00-122-018-0-532
Req # _____

**QUESTIONS? CALL: (956)682-5224**

| | |
|---|---|
| Subtotal : | 30.00 |
| Freight : | 0.00 |
| **Total Amount Due:** | 30.00 |

**Mobile Relays Partners, LTD**
**515 S. 12Th. St**
**P.O. Box 1808**
**McAllen TX, 78505-1808**
**(956)682-5224**

HIDALGO COUNTY
PRECINCT NO. 2
2014 JAN 9 PM 1 56

01/01/2014

**INVOICE** AIR0032822

***CUST P.O.***

**Bill To:** 117314

**Ship To:** 117314

Name HIDALGO COUNTY PCT-PARKS
Address 300 W. HALL ACRES STE G
PHARR TX78577

HIDALGO COUNTY PCT-PARKS
300 W. HALL ACRES STE G
PHARR TX, 78577

ATTN: PO#668674

| Qty | Description | Loc | Unit Price | Total |
|---|---|---|---|---|
| 2.00 | UNITS ON SITE MCALLEN | | 18.0000 | 36.00 |

PAID
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1 1 2014

2014 JAN 17 AM 11 00
RECEIVED BY
COUNTY AUDITOR

INVOICE RECEIVED BY: _____ ON 1/9/14

GOODS/SERVICES RECEIVED BY: _____ ON 1/1/14

PO # 702539
4-1100-452-00-122-008-0-532
Req # 249005

**QUESTIONS? CALL: (956)682-5224**

| | |
|---|---|
| Subtotal : | 36.00 |
| Freight : | 0.00 |
| **Total Amount Due:** | 36.00 |

**Mobile Relays Partners, LTD**
**515 S. 12Th. St**
**P.O. Box 1808**
**McAllen TX, 78505-1808**
**(956)682-5224**

19

HIDALGO COUNTY
PRECINCT NO. 2
2014 JAN 9 PM 1 56

01/01/2014

***INVOICE*** AIR0032824

***CUST P.O.***

Desc (1)

**Bill To:** 117325

**Ship To:** 117325

Name HIDALGO COUNTY PCT2-WIDE SHOP
Address 300 W. HALL ACRES
PHARR TX78577

HIDALGO COUNTY PCT2-WIDE SHOP
300 W. HALL ACRES
PHARR TX, 78577

Desc (3)
PCT 2 Co Wide Shop

Desc (2)
January 2014

| Qty | Description | Loc | Unit Price | Total |
|---|---|---|---|---|
| 1.00 | UNITS ON SITE MCALLEN | | 19.9900 | 19.99 |
| 4.00 | UNITS ON SITE MCALLEN | | 15.0000 | 60.00 |

PAID
FEB 11 2014

2014 JAN 17 PM 11 00

RECEIVED BY
COUNTY AUDITOR

PO # 702540
4-1200-431-00-122-004-0-532
Req # 249908

INVOICE RECEIVED BY: Lilia ON 1/9/14
GOODS/SERVICES RECEIVED BY: Erika Zamora ON 1/1/14

**QUESTIONS? CALL: (956)682-5224**

| | |
|---|---|
| Subtotal : | 79.99 |
| Freight : | 0.00 |
| **Total Amount Due:** | 79.99 |

1 of

**Mobile Relays Partners, LTD**
**515 S. 12Th. St**
**P.O. Box 1808**
**McAllen TX, 78505-1808**
**(956)682-5224**

HIDALGO COUNTY
PRECINCT NO. 2
2014 JAN 8 PM 1 56

01/01/2014

**INVOICE** AIR0032820

***CUST P.O.***

Desc (1)

**Bill To:** 117312

**Ship To:** 117312

| | | |
|---|---|---|
| Name | HIDALGO CO.PCT2-SANITATIO | HIDALGO CO.PCT2-SANITATIO |
| Address | 300 WEST HALL ACRES<br>STE G<br>PHARR TX78577 | 300 WEST HALL ACRES<br>STE G<br>PHARR TX, 78577 |

Desc (2) January 2014

Desc (3) PCT 2 Sanitation

| Qty | Description | Loc | Unit Price | Total |
|---|---|---|---|---|
| 3.00 | UNITS ON SITE MCALLEN | | 19.9900 | 59.97 |
| 3.00 | UNITS ON SITE MCALLEN | | 16.0000 | 48.00 |
| 2.00 | UNITS ON SITE MCALLEN | | 15.0000 | 30.00 |

RECEIVED BY COUNTY AUDITOR
2014 JAN 31 AM 10 22

PO # 7032168
4-1100-432-00-122-001-0-532
Req # 249002

INVOICE RECEIVED BY: MG ON 1/9/14
GOODS/SERVICES RECEIVED BY: Zuzamora ON 1/1/14

| | |
|---|---|
| Subtotal : | 137.97 |
| Freight : | 0.00 |
| **Total Amount Due:** | 137.97 |

**QUESTIONS? CALL: (956)682-5224**

ACC

**Mobile Relays Partners, LTD**
**515 S. 12Th. St**
**P.O. Box 1808**
**McAllen TX, 78505-1808**
**(956)682-5224**

HIDALGO COUNTY
PRECINCT NO. 2
2014 JAN 9 PM 1 56

01/01/2014

***INVOICE*** AIR0032818

***CUST P.O.***

Desc (1)

**Bill To:** 117310

**Ship To:** 117310

| | | |
|---|---|---|
| Name | HIDALGO CO. PRECINCT #2 | HIDALGO CO. PRECINCT #2 |
| Address | 300 WEST HALL ACRES SUITE G | 300 WEST HALL ACRES SUITE G |
| | PO#671152 | PO#671152 |
| | PHARR TX78577 | PHARR TX, 78577 |
| | ATTN: YOLANDA CISNEROS | ATTN: YOLANDA CISNEROS |

Desc (2) January 2014

Desc (3) PCT 2

| Qty | Description | Loc | Unit Price | Total |
|---|---|---|---|---|
| 44.00 | UNITS ON SITE MCALLEN | | 15.0000 | 660.00 |
| 10.00 | UNITS ON SITE MCALLEN | | 19.9900 | 199.90 |
| 1.00 | UNITS ON SITE MCALLEN | | 16.0000 | 16.00 |

2014 JAN 31 AM 10 23
RECEIVED BY COUNTY AUDITOR

PO # 703249
4-1200-431-00-122-006-0-532
Req # 249010

INVOICE RECEIVED BY: Alay ON 1/9/14
GOODS/SERVICES RECEIVED BY: Enlla Zamora ON 1/1/14

| | |
|---|---|
| Subtotal : | 875.90 |
| Freight : | 0.00 |
| **Total Amount Due:** | 875.90 |

**QUESTIONS? CALL: (956)682-5224**

**AI-43402** **Precinct #2 13. E.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Commissioner Hector Palacios **Submitted By:** Erika Zamora, COMM. PCT. #2

**Department:** COMM. PCT. #2

## Information

**CAPTION**

Pct 2 Road & Bridge (1200):
Approval of 2014 appropriation of funds into Various Precinct 2 Road & Bridge Projects in the amount of $650,000.00 to fund project expenditures from (1200) fund balance.

**BACKGROUND**

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1200-431-00-122-0XX-0-XX1

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funding available from Pct 2 R&B Fund Balance.

## Attachments

Appropriation

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Erika Zamora (Originator) | Erika Zamora | 02/28/2014 03:56 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 04:05 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 04:25 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Erika Zamora Started On: 02/28/2014 03:20 PM

Final Approval Date: 02/28/2014

**DATE:** March 5, 2014

**DEPARTMENT HEAD:** Raul Silguero

**DEPARTMENT NAME:** Hidalgo County Precinct 2

**ACCOUNT NUMBER:** 4-1200-431-00-122-0XX-0-XX1

**Contact Person:** Erika Zamora **Ph#** 956-787-1891

# 2014
**Appropriation**

**SUBJECT:** **Budget Amendments** (increase (decrease)) in accordance with Local Government Code, Chapter 111, § 111.070, Item C (2).

Honorable Commissioners' Court of Hidalgo County:

I would like to request the following Budget Amendments (increase (decrease)) in accordance with Local Government Code, Chapter 111, § 111.070, Item C (2).

| INCREASE ACCOUNT NUMBER(S) | ACCOUNT (OBJECT) NAME | AMOUNT |
|---|---|---|
| | | |
| 4-1200-431-00-122-092-0-731 | Pct 2 Gearhart Dr Road & Drainage Impr- Roads | 50,000.00 |
| | | |
| 4-1200-431-00-122-093-0-731 | Pct 2 S "I" Rd (Rancho Blanco-Juan Balli) - Roads | 360,000.00 |
| | | |
| 4-1200-431-00-122-063-0-731 | Pct 2 Border Rd - Roads | 232,500.00 |
| | | |
| 4-1200-431-00-122-090-0-841 | Pct 2 ICA W/SJ-C.Chvz(Carroll-Bus83)-Aid to Govt Agency | 3,500.00 |
| | | |
| 4-1200-431-00-122-083-0-731 | Pct 2 Thomas Rd(McColl-Jackson) - Roads | 4,000.00 |
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| | **TOTAL BUDGET INCREASE (DECREASE)** | $ 650,000.00 |

REASON: Appropriation of monies from Pct 2 R&B Fund Balance into Various Pct 2 Projects.

DEPARTMENT HEAD SIGNATURE

APPROVED COMMISSIONERS' COURT

/ /
DATE

ATTEST COUNTY CLERK

**AI-43328** **Budget and Management 14. A.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Monica Badillo, EXECUTIVE OFFICE

**Department:** EXECUTIVE OFFICE

## Information

### CAPTION

1. Presentation, discussion, and direction on Sanitation Program.
2. Presentation and discussion of Tire Shredding Project.
3. Presentation, discussion and status update of various budget initiatives.

### BACKGROUND

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/25/2014 04:28 PM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 11:31 AM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Monica Badillo Started On: 02/25/2014

Final Approval Date: 02/28/2014

**AI-43364** **Budget and Management 14. B.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Precinct No.4 **Submitted By:** Rolando Garcia, BUDGET & MANAGEMENT

**Department:** BUDGET & MANAGEMENT

## Information

**CAPTION**

Precinct No.4 TxDOT Projects:
1. Approval of Advance Funding Agreement (AFA) between Hidalgo County and Texas Department of Transportation from FM 1925 (Kenyon Road to FM907) CSJ: 1803-02-028 with authority for the County Judge to sign required documentation.

2. Approval of Agreement for Right of Way Procurement for FM 1925 (from Kenyon Road to FM 907) CSJ: 1803-02-033 with authority for the County Judge to sign required documentation.

3. Approval of Agreement for Right of Way Procurement for FM 2220 (from Mile 5 to FM 1924) CSJ: 2094-01-044.

**BACKGROUND**

(2) Originals for FM 1925 (Kenyon-FM 907)
(3) Originals for FM 1925 ROW Agreement (Kenyon-FM 907)
(3) Originals for FM 2220 ROW Agreement (Mile 5-FM 1924)

## Fiscal Impact

**FISCAL YEAR:** 14 **ACCT. #:** 4-13XX-431-00-124-076-0-841

**FUNDS AVAILABLE Y/N?:** YES **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

FM 1925 Local Participation as per AFA is 100% for Hidalgo County and is evidenced by WA#1 (PO 663995) and WA#2 (PO 684964)

**FISCAL YEAR:** 14 **ACCT. #:** 4-1336-431-00-124-076-0-841

**FUNDS AVAILABLE Y/N?:** Y/Pending **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

ROW Agreement FM 1925: $8,690.00 Local Participation.

pending carryover, the available balance will be $46,174.82 to cover the local participation for this agreement.

**FISCAL YEAR:** 14 **ACCT. #:** 4-1315-431-00-124-135-0-841

**FUNDS AVAILABLE Y/N?:** Y/Pending **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

ROW Agreement FM 2220

Reference: AI-43389 for funding transfer of $19,465.00

## Attachments

FM1925(Kenyon-FM907)
FM2220 ROW Agreement
letter

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Roland Garcia (Originator) | Rolando Garcia | 02/28/2014 02:36 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:39 PM |
| Glinda Pacheco | Glinda Pacheco | 02/28/2014 03:00 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Rolando Garcia Started On: 02/27/2014 10:00 AM

Final Approval Date: 02/28/2014

Texas Department of Transportation
PO BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

January 17, 2014

Honorable Ramon Garcia
Hidalgo County Judge
P.O. Box 1356
Edinburg, Texas 78540

**RE: Advance Funding Agreement**
**Voluntary Local Government Contributions**
**FM 1925 from Kenyon Road to FM 907**
**CSJ: 1803-02-028**

Dear Judge Garcia:

Attached for your signature please find two originals of the Advance Funding Agreement for Voluntary Local Government Contributions. This agreement addresses the County's commitment to donate the project's schematic, surveying, environmental document and plans, specifications and estimate (PS&E) for the widening of FM 1925 from Kenyon Road to FM 907.

Thank you for the County's proactive efforts and partnership approach in helping with the improvements to FM 1925. Please sign and return both signed originals to the attention of Mr. Homer Bazan, Jr., our Director of Transportation Planning and Development, at the above address for further processing. We will return one original once executed. Please contact Mr. Bazan or me at 702-6100 if you have any questions regarding this submission.

Sincerely,

Toribio Garza, Jr., P.E.
Pharr District Engineer

Attachments

cc: Pedro R. Alvarez, P.E., Deputy District Engineer
Homero Bazan, Jr., P.E., Director of Transportation Planning and Development
Valente Olivarez, P.E., Pharr Area Engineer
Margil Maldonado, P.E., Project Manager
Project File

HIDALGO COUNTY
BUDGET OFFICE
2014 FEB 4 PM 4 35

CSJ # **1803-02-028**
District # **21 - Pharr**
Code Chart 64 # **50109**
Project: **FM 1925 from Kenyon Road to FM 907**

**STATE OF TEXAS** §

**COUNTY OF TRAVIS** §

# ADVANCE FUNDING AGREEMENT FOR VOLUNTARY LOCAL GOVERNMENT CONTRIBUTIONS TO TRANSPORTATION IMPROVEMENT PROJECTS WITH NO REQUIRED MATCH

**THIS AGREEMENT** is made by and between the State of Texas, acting by and through the Texas Department of Transportation, called the "State", and the **Hidalgo County,** acting by and through its duly authorized officials, called the "Local Government."

## WITNESSETH

**WHEREAS,** Transportation Code, Chapters 201, 221, and 361, authorize the State to lay out, construct, maintain, and operate a system of streets, roads, and highways that comprise the State Highway System; and,

**WHEREAS,** Government Code, Chapter 791, and Transportation Code, §201.209 and Chapter 221, authorize the State to contract with municipalities and political subdivisions; and,

**WHEREAS,** Commission Minute Order Number 113675 authorizes the State to undertake and complete a highway improvement generally described as the widening of FM 1925 to four lanes; and,

**WHEREAS,** the Local Government has requested that the State allow the Local Government to participate in said improvement by funding that portion of the improvement described as **schematic, surveying, environmental document, plans, specifications and estimate (PS&E) for the widening of FM 1925 to a four lane divided urban facility from Kenyon Road to FM 907**, called the "Project"; and,

**WHEREAS,** the State has determined that such participation is in the best interest of the citizens of the State;

**NOW, THEREFORE**, in consideration of the premises and of the mutual covenants and agreements of the parties hereto, to be by them respectively kept and performed as hereinafter set forth, the State and the Local Government do agree as follows:

## AGREEMENT

1. **Time Period Covered**
   This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed, and the State and the Local Government will consider it to be in full force and effect until the Project described in this agreement has been completed and accepted by all parties or unless terminated, as provided for by this agreement.

2. **Project Funding and Work Responsibilities**
   **A.** The State will authorize the performance of only those Project items of work which the Local Government has requested and has agreed to pay for as described in Attachment A, Payment Provision and Work Responsibilities which is attached to and made a part of this contract. In addition to identifying those items of work paid for by payments to the State, Attachment A,

Payment Provision and Work Responsibilities, also specifies those Project items of work that are the responsibility of the Local Government and will be carried out and completed by the Local Government, at no cost to the State.

**B.** At least sixty (60) days prior to the date set for receipt of the construction bids, the Local Government shall remit its remaining financial share for the State's estimated construction oversight and construction costs.

**C.** In the event that the State determines that additional funding by the Local Government is required at any time during the Project, the State will notify the Local Government in writing. The Local Government shall make payment to the State within thirty (30) days from receipt of the State's written notification.

**D.** Whenever funds are paid by the Local Government to the State under this agreement, the Local Government shall remit a check or warrant made payable to the "Texas Department of Transportation Trust Fund." The check or warrant shall be deposited by the State in an escrow account to be managed by the State. Funds in the escrow account may only be applied by the State to the Project. If, after final Project accounting, excess funds remain in the escrow account, those funds may be applied by the State to the Local Government's contractual obligations to the State under another advance funding agreement with approval by appropriate personnel of the Local Government.

**3. Right of Access**

If the Local Government is the owner of any part of the Project site, the Local Government shall permit the State or its authorized representative access to the site to perform any activities required to execute the work.

**4. Adjustments Outside the Project Site**

The Local Government will provide for all necessary right of way and utility adjustments needed for performance of the work on sites not owned or to be acquired by the State.

**5. Responsibilities of the Parties**

The State and the Local Government agree that neither party is an agent, servant, or employee of the other party and each party agrees it is responsible for its individual acts and deeds as well as the acts and deeds of its contractors, employees, representatives, and agents.

**6. Document and Information Exchange**

The Local Government agrees to electronically deliver to the State all general notes, specifications, contract provision requirements and related documentation in a Microsoft® Word or similar document. If requested by the State, the Local Government will use the State's document template. The Local Government shall also provide a detailed construction time estimate including types of activities and month in the format required by the State. This requirement applies whether the local government creates the documents with its own forces or by hiring a consultant or professional provider. At the request of the State, the Local Government shall submit any information required by the State in the format directed by the State.

**7. Interest**

The State will not pay interest on funds provided by the Local Government. Funds provided by the Local Government will be deposited into, and retained in, the State Treasury.

**8. Inspection and Conduct of Work**

Unless otherwise specifically stated in Attachment A, Payment Provision and Work Responsibilities, to this contract, the State will supervise and inspect all work performed hereunder and provide such engineering inspection and testing services as may be required to ensure that the Project is accomplished in accordance with the approved plans and specifications. All correspondence and instructions to the contractor performing the work will be the sole responsibility of the State. Unless otherwise specifically stated in Attachment A to this contract, all work will be performed in accordance with the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges adopted by the State and incorporated in this agreement by reference, or special specifications approved by the State.

**9. Increased Costs**

**A.** In the event it is determined that the funding provided by the Local Government will be insufficient to cover the State's cost for performance of the Local Government's requested work, the Local Government will pay to the State the additional funds necessary to cover the anticipated additional cost. The State shall send the Local Government a written notification stating the amount of additional funding needed and stating the reasons for the needed additional funds. The Local Government shall pay the funds to the State within thirty (30) days of the written notification, unless otherwise agreed to by all parties to this agreement. If the Local Government cannot pay the additional funds, this contract shall be mutually terminated in accordance with Article 11 – Termination. If this is a fixed price agreement as specified in Attachment A, Payment Provision and Work Responsibilities, this provision shall only apply in the event changed site conditions are discovered or as mutually agreed upon by the State and the Local Government.

**B.** If any existing or future local ordinances, commissioners court orders, rules, policies, or other directives, including but not limited to outdoor advertising billboards and storm water drainage facility requirements, are more restrictive than State or Federal Regulations, or if any other locally proposed changes, including but not limited to plats or replats, result in increased costs, then any increased costs associated with the ordinances or changes will be paid by the Local Government. The cost of providing right of way acquired by the State shall mean the total expenses in acquiring the property interests either through negotiations or eminent domain proceedings, including but not limited to expenses related to relocation, removal, and adjustment of eligible utilities.

**10. Maintenance**

Upon completion of the Project, the State will assume responsibility for the maintenance of the completed Project unless otherwise specified in Attachment A to this agreement.

**11. Termination**

**A.** This agreement may be terminated in the following manner:

1. By mutual written agreement and consent of both parties;
2. By either party upon the failure of the other party to fulfill the obligations set forth in this agreement; or
3. By the State if it determines that the performance of the Project is not in the best interest of the State.

B. If the agreement is terminated in accordance with the above provisions, the Local Government will be responsible for the payment of Project costs incurred by the State on behalf of the Local Government up to the time of termination.
C. Upon completion of the Project, the State will perform an audit of the Project costs. Any funds due to the Local Government, the State, or the Federal Government will be promptly paid by the owing party.

**12. Notices**

All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid or sent by electronic mail, (electronic notice being permitted to the extent permitted by law but only after a separate written consent of the parties), addressed to such party at the following addresses:

| **Local Government:** | **State:** |
|---|---|
| Judge | Director of Contract Services Office |
| Hidalgo County | Texas Department of Transportation |
| PO Box 1356 | 125 E. 11th Street |
| Edinburg, Texas 78540 | Austin, Texas 78701 |

All notices shall be deemed given on the date so delivered or so deposited in the mail, unless otherwise provided in this agreement. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that such notices shall be delivered personally or by certified U.S. mail and such request shall be honored and carried out by the other party.

**13. Sole Agreement**

In the event the terms of the agreement are in conflict with the provisions of any other existing agreements between the Local Government and the State, the latest agreement shall take precedence over the other agreements in matters related to the Project.

**14. Successors and Assigns**

The State and the Local Government each binds itself, its successors, executors, assigns, and administrators to the other party to this agreement and to the successors, executors, assigns, and administrators of such other party in respect to all covenants of this agreement.

**15. Amendments**

By mutual written consent of the parties, this agreement may be amended prior to its expiration.

**16. State Auditor**

The state auditor may conduct an audit or investigation of any entity receiving funds from the State directly under the contract or indirectly through a subcontract under the contract. Acceptance of funds directly under the contract or indirectly through a subcontract under this contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds.

An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

**17. Insurance**

If this agreement authorizes the Local Government or its contractor to perform any work on State right of way, before beginning work the entity performing the work shall provide the State with a fully executed copy of the State's Form 1560 Certificate of Insurance verifying the existence of coverage in the amounts and types specified on the Certificate of Insurance for all persons and entities working on State right of way. This coverage shall be maintained until all work on the State right of way is complete. If coverage is not maintained, all work on State right of way shall cease immediately and the State may recover damages and all costs of completing the work.

**18. Signatory Warranty**

Each signatory warrants that the signatory has necessary authority to execute this agreement on behalf of the entity represented.

**THIS AGREEMENT IS EXECUTED** by the State and the Local Government in duplicate.

**THE LOCAL GOVERNMENT**

_____
Signature

_____
Typed or Printed Name

_____
Title

_____
Date

**THE STATE OF TEXAS**

_____
District Engineer

_____
Date

CSJ # **1803-02-028**
District # **21 - Pharr**
Code Chart 64 # **50109**
Project: **FM 1925 from Kenyon Road to FM 907**

# ATTACHMENT A
## PAYMENT PROVISION AND WORK RESPONSIBILITIES

**A. Scope of Work**

The Local Government will perform the schematic, surveying, environmental document and PS&E for the widening of FM 1925 to a four lane divided urban facility from Kenyon Road to FM 907.

**B. Payment Provision**

The Local Government's participation will be limited to performing the schematic, surveying, environmental document and PS&E. The State will be responsible for the cost of the preliminary engineering and environmental direct and indirect state costs. The State has estimated the Project cost to be as follows:

| Description | Total Estimated Cost | Federal Participation | | State Participation | | Local Participation | |
|---|---|---|---|---|---|---|---|
| | | % | Cost | % | Cost | % | Cost |
| Preliminary Engineering (by LG) | $ 817,100 | 0% | $ 0 | 0% | $ 0 | 100% | $ 817,100 |
| Environmental (by LG) | $ 55,000 | 0% | $ 0 | 0% | $ 0 | 100% | $ 55,000 |
| **Subtotal** | **$ 872,100** | | **$ 0** | | **$ 0** | | **$ 872,100** |
| Preliminary Engineering Direct State Costs (7%) | $ 57,197 | 0% | $ 0 | 100% | $ 57,197 | 0% | $ 0 |
| Environmental Direct State Costs (7%) | $ 3,850 | 0% | $ 0 | 100% | $ 3,850 | 0% | $ 0 |
| Indirect State Costs (7.27%) | $ 87,022 | 0% | $ 0 | 100% | $ 87,022 | 0% | $ 0 |
| **Subtotal** | **$ 148,069** | | **$ 0** | | **$148,069** | | **$ 0** |
| **TOTAL** | **$ 1,020,169** | | **$ 0** | | **$148,069** | | **$ 872,100** |

**C. Work Responsibilities**

**1. Architectural and Engineering Services**

The Local Government has responsibility for the performance of architectural and engineering services. The engineering plans shall be developed in accordance with the applicable *State's Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges* and the special specifications and special provisions related to it. For projects on the state highway system, the design shall, at a minimum conform to applicable State manuals. For projects not on the state highway system, the design shall, at a minimum, conform to applicable *American Association of State Highway and Transportation Officials* design standards. In procuring professional services, the parties to this agreement must comply with federal requirements cited in 23 CFR Part 172 if the project is federally funded and with Texas

Government Code 2254, Subchapter A, in all cases. Professional contracts for federally funded projects must conform to federal requirements, specifically including the provision for participation by Disadvantaged Business Enterprises (DBEs), ADA, and environmental matters.

2. **Environmental Assessment and Mitigation**
Development of a transportation project must comply with the National Environmental Policy Act and the National Historic Preservation Act of 1966, which require environmental clearance of federal-aid projects.
   - **A.** The Local Government is responsible for the identification and assessment of any environmental problems associated with the development of a local project governed by this agreement.
   - **B.** The Local Government is responsible for the cost of any environmental problem's mitigation and remediation.
   - **C.** The Local Government is responsible for providing any public meetings or public hearings required for development of the environmental assessment. Public hearings will not be held prior to the approval of project schematic.
   - **D.** The Local Government is responsible for the preparation of the NEPA documents required for the environmental clearance of this Project.
   - **E.** Before the advertisement for bids, the Local Government shall provide to the State written documentation from the appropriate regulatory agency or agencies that all environmental clearances have been obtained.

# Texas Department of Transportation

P. O. BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

February 10, 2014

RECEIVED
FEB 12 2014
COUNTY JUDGE
2014 FEB 18 AM 10 57
HIDALGO COUNTY
BUDGET OFFICE

The Honorable Ramon Garcia
Judge, Hidalgo County
PO Box 1356
Edinburg, TX 78540

REF: Submission of Agreement For Right of Way Procurement

| | |
|---|---|
| County: | Hidalgo County |
| Project: | FM 2220 |
| Limits: | From Mile 5 to FM 1924 |
| ROW CSJ: | 2094-01-044 |
| CONST CSJ: | 2094-01-038 |

Honorable Judge Garcia,

Enclosed find three (3) originals of an Agreement for Right of Way Procurement-Local Government for the above referenced right of way acquisition project.

The agreement has been modified to reflect the County's request and award of an Economically Disadvantage County (EDC) Program adjustment. The Texas Transportation Commission granted the adjustment via Minute Order No. 113345. Enclosed find a separate letter from Toribio Garza, P.E., Pharr District Engineer to your attention, which awards the County an Eighty Three Percent (83%) adjustment to the required 10% cost participation thereby resulting in a Local Government cost participation of One Point Seven Percent (1.7%) and State cost participation of Ninety Eight Point Three Percent (98.3%) for this project.

We are herein respectfully requesting that agenda action items be presented at the next most available County Commissioners meeting to consider the execution of the enclosed agreement. Once presented, approved and executed, please forward the three original executed agreements and a copy of the resolution or ordinance approving the project back to the Texas Department of Transportation. Your cost participation is $19,465.00 and is calculated by applying the 83% EDC adjustment award to the 10% Hidalgo County cost participation requirement resulting in a cost participation breakdown of 98.3 % State and 1.7% Hidalgo County. The 1.7% is then applied to the estimated cost of right of way acquisition of One Million One Hundred and Forty Five Thousand Dollars ($ 1,145,000.00).

Upon receipt of the three (3) fully executed agreements and a copy of the resolution or ordinance approving the project, we will forward the three copies of the signed and executed

agreements to our Right of Way Division Director in Austin for his review, approval and execution. We will also request that the ROW acquisition project be released.

Once we obtain the official release from the ROW Division, we will issue a written Notice of Project Release to advise Hidalgo County that the county may commence with the acquisition of the needed parcels for this project.

Your continued cooperative efforts towards the improvement of the Highway System in the State of Texas are most certainly appreciated.

Sincerely,

Nelda R. Eureste

Nelda R. Eureste
South ROW
Project Delivery Manager

Cc: Joseph Palacios, Hidalgo County Commissioner Precinct No. 4
Homer Bazan, P.E., Director of Transportation Planning and Development
Margil Maldonado, P.E. Project Manager
Jesus Esquierdo, South R/W P/D Supervisor

Enclosures: Three (3)

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**STATE OF TEXAS** §

**COUNTY OF TRAVIS** §

## AGREEMENT FOR RIGHT OF WAY PROCUREMENT

**THIS AGREEMENT** is made by and between the State of Texas, acting through the Texas Department of Transportation, called the "State", and **Hidalgo County**, Texas, acting through its duly authorized officials, called the "Local Government."

## WITNESSETH

**WHEREAS**, Texas Transportation Code §§ 201.103 and 222.052 establish that the State shall design, construct, and operate a system of highways in cooperation with local governments; and

**WHEREAS**, Texas Transportation Code § 201.209 authorizes the State and a Local Government to enter into agreements in accordance with Texas Government Code, Chapter 791; and

**WHEREAS**, the State has deemed it necessary to make certain highway improvements on Highway No. **FM 2220** from **Mile 5 Road** to **FM 1924**, and this section of highway improvements will necessitate the acquisition of certain right of way and the relocating and adjusting of utilities, called the "Project"; and

**WHEREAS**, 43 Texas Administrative Code §15.55 defines the Local Government's cost participation in acquiring the right of way and relocating or adjusting eligible utilities for the proper improvement of the State Highway System; and

**WHEREAS**, the Governing Body of the Local Government has approved entering into this agreement by resolution or ordinance dated _____, 2013, which is attached to and made a part of this agreement as Attachment A. A map showing the Project location appears in Attachment B, which is attached to and made a part of this agreement.

**NOW THEREFORE,** the State and the Local Government do agree as follows:

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

## AGREEMENT

1. **Agreement Period**
   This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed. This agreement shall remain in effect until the Project is completed or unless terminated as provided below.

2. **Termination**
   This agreement shall remain in effect until the project is completed and accepted by all parties, unless:
   - **A.** The agreement is terminated in writing with the mutual consent of the parties;
   - **B.** The agreement is terminated by one party because of a breach, in which case any cost incurred because of the breach shall be paid by the breaching party; or
   - **C.** The Project is inactive for thirty-six (36) months or longer and no expenditures have been charged against federal funds, in which case the State may in its discretion terminate this agreement.

3. **General**
   - **A.** The Local Government agrees to proceed with acquisition of right of way and the State agrees to reimburse the Local Government for its share of the cost of the right of way, providing the acquisition and reimbursement are accomplished according to the provisions outlined in this agreement.
   - **B.** The State and the Local Government agree that acquisition of this right of way shall be in accordance with the *Texas Department of Transportation Right of Way Manual* and all applicable federal and state laws governing the acquisition of real property.
   - **C.** It is understood that the terms of this agreement shall apply to new right of way, authorized and requested by the State, which is needed and not yet dedicated, in use, or previously acquired in the name of the State or Local Government for highway, street, or road purposes. This agreement shall also apply, with regard to any existing right of way, to outstanding property interests not previously acquired and to eligible utility adjustments not previously made, as authorized and requested by the State.
   - **D.** It is further understood that if unusual circumstances develop in the right of way acquisition and they are not clearly covered by the terms of this agreement, those unusual circumstances or problems will be resolved by mutual agreement between the State and the Local Government.

4. **Local Project Sources and Uses of Funds**
   - **A.** The total estimated cost of the Project is shown in Attachment C, Project Budget Estimate, which is attached to and made a part of this agreement. The expected cash contributions from the Federal or State government, the Local Governments, or other parties are shown in Attachment C. The State will pay for only those project costs that have been approved by the Texas Transportation Commission. If Federal funding is

included, the State and the Federal Government will not reimburse the Local Government for any work performed before the federal spending authority is formally obligated to the Project by the Federal Highway Administration. After federal funds have been obligated, the State will send to the Local Government a copy of the formal documentation showing the obligation of funds including federal award information. The Local Government is responsible for 100% of the cost of any work performed under its direction or control before the federal spending authority is formally obligated.

**B.** If the Local Government will perform any work under this contract for which reimbursement will be provided by or through the State, the Local Government must complete training before federal spending authority is obligated. Training is complete when at least one individual who is working actively and directly on the Project successfully completes and receives a certificate for the course entitled *Local Government Project Procedures Qualification for the Texas Department of Transportation.* The Local Government shall provide the certificate of qualification to the State. The individual who receives the training certificate may be an employee of the Local Government or an employee of a firm that has been contracted by the Local Government to perform oversight of the Project. The State in its discretion may deny reimbursement if the Local Government has not designated a qualified individual to oversee the Project.

**C.** The Project cost estimate in Attachment C shows how necessary resources for completing the Project will be provided by major cost categories. These categories may include but are not limited to: (1) costs of real property and (2) costs of utility work.

**D.** The State will be responsible for securing the Federal and State share of the funding required for the development of the local Project. If the Local Government is due funds for expenses incurred, these funds will be reimbursed to the Local Government on a cost basis.

**E.** The Local Government will be responsible for all non-federal or non-state participation costs associated with the Project, including any overruns in excess of the approved local project budget unless otherwise provided for in this agreement or approved otherwise in an amendment to this agreement.

**F.** In the event any existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive, including, but not limited to, outdoor advertising or storm water drainage facility requirements, is more restrictive than State or federal regulations, or any other locally proposed change, including, but not limited to, plats or re-plats, results in any increased costs to the State, then the Local Government will pay one hundred percent (100%) of all those increased costs, even if the applicable county qualifies as an Economically Disadvantaged County (EDC). The amount of the increased costs associated with the existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive will be determined by the State at its sole discretion.

**G.** If the Local government is an EDC and if the State has approved adjustments to the standard financing arrangement, this agreement reflects those adjustments.

H. Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

I. The Local Government is authorized to submit requests for reimbursement by submitting the original of an itemized invoice in a form and containing all items required by the State no more frequently than monthly, and no later than ninety (90) days after costs are incurred. If the Local Government submits invoices more than ninety (90) days after the costs are incurred, and if federal funding is reduced as a result, the State shall have no responsibility to reimburse the Local Government for those costs.

**5. Location Surveys and Preparation of Right of Way Data**

The State, without cost to the Local Government, will perform the necessary preliminary engineering and title investigation in order to supply to the Local Government the data and instruments necessary to obtain acceptable title to the desired right of way.

**6. Determination of Right of Way Values**

The Local Government agrees to make a determination of property values for each right of way parcel by methods acceptable to the State and to submit to the State a tabulation of those values, signed by the appropriate Local Government representative. The tabulation shall list the parcel numbers, ownership, acreage, and recommended compensation. Compensation shall be shown in the component parts of land taken, itemization of improvements taken, damages (if any), and the amounts by which the total compensation will be reduced if the owner retains improvements. This tabulation shall be accompanied by an explanation to support the determined values, together with a copy of information or reports used in arriving at all determined values. This work will be performed by the Local Government at its expense without cost participation by the State. The State will review the data submitted and may base its reimbursement on the values that are determined by this review. The State, however, reserves the right to perform at its own expense any additional investigation, including supplemental appraisal work by State employees or by employment of fee appraisers, deemed necessary for determination of values to constitute the basis for State reimbursement. The parties may waive the requirement that the Local Government submit to the State property value determinations for any part of the required right of way by a writing signed by both parties. In instances of a waiver, the State, in its discretion, will make a determination of values to constitute the basis for State reimbursement.

**7. Negotiations**

The State will notify the Local Government as soon as possible as to the State's determination of value. Negotiation and settlement with the property owner will be the responsibility of the Local Government without participation by the State; however, the Local Government will notify the State immediately prior to closing the transaction so that a current title investigation may be made to determine if there has been any change in the title. The Local Government will deliver properly executed instruments of conveyance that,

together with any curative instruments found to be necessary as a result of the State's title investigation, will properly vest good and indefeasible title in the State for each right of way parcel involved. The Local Government will also deliver to the State an owner's policy of title insurance for each parcel, except as otherwise specifically approved by the State. Upon payment to the property owner of the agreed purchase price, the Local Government is authorized and directed to secure for the State possession of each parcel in accordance with all applicable Federal and State laws governing relocation assistance, notices to vacate, and forcible detainer. The costs incidental to negotiation, recording the right of way instruments, and securing possession of the parcels will be the responsibility of the Local Government. The cost of title insurance, closing services, and all costs of relocation assistance as authorized by applicable Federal and State laws will be the responsibility of the State.

8. **Administrative Settlements**
After the offer has been delivered to the property owner, and prior to the Special Commissioners' Hearing, the property owner may deliver one written counteroffer ("Administrative Settlement Proposal") to the Local Government. The Local Government will evaluate the Administrative Settlement Proposal and make a recommendation of approval or disapproval to the State. The State will consider the Administrative Settlement Proposal and the Local Government's recommendation and make a final determination of approval or disapproval in accordance with current State procedures. The State's approval of the Administrative Settlement Proposal is only for purposes of closing the purchase of the property prior to the Special Commissioners' Hearing. If a closing of the purchase does not occur prior to the hearing, the State's approval is automatically, without further action, withdrawn, and the State will participate only in the original approved value. In the event the State does not approve the Administrative Settlement Proposal, and the Local Government elects to purchase the property at a value greater than the original approved value, the State's participation in the purchase price will apply only to the original approved value, and the Local Government will pay one hundred percent (100%) of the costs that exceed the original approved value, even if the applicable county qualifies as an EDC.

9. **Condemnation**
Condemnation proceedings will be initiated at a time selected by the Local Government and will be the Local Government's responsibility at its own expense except as follows. The Local Government will obtain from the State without cost current title information and engineering data at the time condemnation is to be initiated. Except as set forth elsewhere in this agreement, the Local Government will concurrently file condemnation proceedings and a notice of lis pendens for each case in the name of the State, and in each case the judgment of the court will decree title and possession to the property condemned to the State. The Local Government may, as set forth in Article 11 (Excess Takings) and where it is determined to be necessary, enter condemnation proceedings in its own name. Property acquired in the Local Government's name for the State must comply with requirements set

forth in the engineering data and title investigation previously furnished to the Local Government by the State when the Local Government conveys the property to the State.

10. **Court Costs, Costs of Special Commissioners' Hearings and Appraisal Expense**
Court costs and costs of Special Commissioners' Hearings assessed against the State or Local Government in condemnation proceedings conducted on behalf of the State and fees incident to those hearings will be paid by the Local Government. Those costs and fees, with the exception of recording fees, will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under the established reimbursement procedure, provided that they are eligible for payment by the State under existing law. Where the Local Government uses the State's appraisers employed on a fee basis in Special Commissioners' Hearings or subsequent appeals, the cost of the appraiser for updating the report, preparing new reports, preparing for court testimony, and appearing in court to testify in support of the appraisal will be paid direct by the Local Government, but will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under established procedure provided prior approval for the appraiser has been obtained from the State. The fee paid to the appraiser by the Local Government shall be in accordance with the fee schedule set forth in the appraiser's contract for appraisal services with the State.

11. **Excess Takings**
In the event the Local Government desires to acquire land in excess of that requested by the State for right of way purposes, the State's cost participation will be limited to the property needed for its purposes. If the Local Government elects to acquire the entire property, including the excess taking, by a single instrument of conveyance or in one eminent domain proceeding, the property involved will be acquired in the name of the Local Government and that portion requested by the State for right of way will be separately conveyed to the State by the Local Government. When the property is acquired by negotiation, the State's participation will be based on the State's approved value of that part of the property requested for right of way purposes, provided that the approved value does not exceed the actual payment made by the Local Government. When the property is acquired by condemnation, the State's participation will be in the proportionate part of the final judgment amount computed on the basis of the relationship of the State's approved value to the State's predetermined value for the whole property.

12. **Improvements**
    **A.** Property owners will be afforded an opportunity in the negotiations to retain any or all of their improvements in the right of way taking. In anticipation of the owner's desiring to retain improvements, the State's approved value will include the amounts by which the upper limit of State participation will be reduced for the retention. It is further agreed that the upper limit for the State's participation in the Local Government's cost for an improved parcel will be reduced as shown in the State's approved value where the owner retains an improvement that is to be moved by either the Local Government or

the owner. If improvements are, in whole or part, a part of the right of way taking and are not retained by the owner, title is to be secured in the name of the State.

**B.** The State will participate in the acquisition of a structure severed by the right of way line if the part of the house, building, or similar structure that lies outside the right of way cannot be reconstructed adequately or there is nothing but salvage left, provided that the State's value is established on this basis and provided that title to the entire structure is taken in the name of the State. The State shall dispose of all improvements acquired. The net revenue derived by the State from the disposition of any improvements sold will be credited to the cost of the right of way procured and shared with the Local Government.

**13. Relocation of Utilities**

If the required right of way encroaches on an existing utility located on its own right of way and the proposed highway construction requires the adjustment, removal, or relocation of the utility facility, the State will establish the necessity for the utility work. State participation in the cost of making the necessary change, less any resulting increase in the value to the utility and less any salvage value obtainable, may be obtained by either the "actual cost" or "lump sum" procedures. Reimbursement under "actual cost" will be made subsequent to the Local Government's certification that the work has been completed and will be made in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the eligible items of cost as paid to the utility owner after the completion of an audit. The "lump sum" procedure requires that the State establish the eligibility of the utility work and enter into a three-party agreement with the owners of the utility facilities and the Local Government. This agreement must set forth the exact lump sum amount of reimbursement. The utility will be reimbursed by the Local Government after proper certification by the utility that the work has been done, and the reimbursement will be based on the prior lump sum agreement. The State will reimburse the Local Government in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the firm commitment as paid to the utility owner. Reimbursement is subject to the provision that the individual lump sum agreement approved value shall not exceed $20,000, except as specifically approved by the State. In those cases where a single operation is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based upon the circumstances involved. The firm commitment to the utility will be an appropriate item of right of way. The adjustment, removal, or relocation of any utility line on publicly owned right of way by sufferance or permit will not be eligible for State reimbursement. The term "utility" under this agreement shall include publicly, privately, and cooperatively owned utilities.

**14. Fencing Requirements**

**A.** The Local Government may handle fencing through one of the following methods.

1. The Local Government may pay the property owner for existing right of way fences based on the value those fences contribute to the part taken and damages for an unfenced condition resulting from the right of way taking, in which case the estimated

value of those right of way fences and damages will be included in the recommended value and the approved value; or

2. The Local Government may perform the fencing on the property owner's remaining property.

**B.** When the Local Government performs right of way fencing as a part of the total right of way consideration, neither the value of existing right of way fences nor damages for an unfenced condition will be included in the recommended value or the approved value. State participation in the Local Government's cost of constructing right of way fencing on the property owner's remainder may be based on either the actual cost of the fencing or on a predetermined lump sum amount. The State will be given credit for any salvaged fencing material and will not participate in any overhead costs of the Local Government.

**C.** If State participation is to be requested on the lump sum basis, the State and the Local Government will reach an agreement prior to the actual accomplishment of the work as to the necessity, eligibility, and a firm commitment as to the cost of the entire fencing work to be performed. This is subject to the provision that the lump sum approved cost shall not exceed $20,000, except as specifically approved by the State. In the event the cost of the fencing is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based on the circumstances involved.

**15. Basis for Reimbursement Calculation**

**A.** The State will reimburse the Local Government for right of way acquired after the date of this agreement in an amount not to exceed ninety percent (90%), or the applicable EDC-adjusted percent, of the cost of the right of way acquired in accordance with the terms and provisions of this agreement. The State's reimbursement will be in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the State's predetermined value of each parcel, or the net cost of each parcel, whichever is less. All requests by the Local Government for reimbursement shall comply with the then current reimbursement submission requirements set forth in the *Texas Department of Transportation Right of Way Manual.*

**B.** If condemnation is necessary and title is taken under Article 9 (Condemnation), the participation by the State shall be based on the final judgment, conditioned on the State having been notified in writing prior to the filing of the suit and on prompt notice being given as to all action taken under the suit. The State shall have the right to become a party to the suit at any time for all purposes, including the right of appeal at any stage of the proceedings. All other items of cost shall be borne by the State and the Local Government as provided in other sections of this agreement.

**C.** If a lump sum fencing or utility adjustment agreement has been executed, the State will reimburse the Local Government in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the predetermined lump sum cost of the right of way fencing or utility adjustment.

**D.** If the Local Government prefers not to execute a lump sum agreement for either fencing or utility adjustments, the State will reimburse on the actual cost of that fencing or those adjustments. The Local Government's request for reimbursement will be supported by a breakdown of the labor, materials, and equipment used.

**16. Amendments**

Amendments to this agreement due to changes in the character of the work, terms of the agreement, or responsibilities of the parties relating to the Project may be enacted through a mutually agreed upon, written supplemental agreement.

**17. Notices**

All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, to the following addresses:

| **Local Government:** | **State:** |
|---|---|
| Honorable Ramon Garcia | Director of Right of Way Division |
| Judge, Hidalgo County | Texas Department of Transportation |
| P.O. Box 1356 | 125 E. 11th Street |
| Edinburg, TX 78540 | Austin, Texas 78701 |

All notices shall be deemed given on the date delivered or deposited in the mail, unless otherwise provided by this agreement. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that notices shall be delivered personally or by certified U.S. mail and that request shall be honored and carried out by the other party.

**18. Remedies**

This agreement shall not be considered as specifying the exclusive remedy for any agreement default, but all remedies existing at law and in equity may be availed of by either party to this agreement and shall be cumulative.

**19. Legal Construction**

If one or more of the provisions contained in this agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, that invalidity, illegality, or unenforceability shall not affect any other provisions and this agreement shall be construed as if it did not contain the invalid, illegal, or unenforceable provision.

**20. Responsibilities of the Parties**

The State and the Local Government agree that neither party is an agent, servant, or employee of the other party and each party agrees it is responsible for its individual acts and deeds as well as the acts and deeds of its contractors, employees, representatives, and agents.

**21. Compliance with Laws**

The parties shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of this agreement. When required, the Local Government shall furnish the State with satisfactory proof of this compliance.

**22. Sole Agreement**

This agreement constitutes the sole and only agreement between the parties and supersedes any prior understandings or written or oral agreements respecting the subject matter of this agreement.

**23. Ownership of Documents**

Upon completion or termination of this agreement, all documents prepared by the State shall remain the property of the State. All data prepared under this agreement shall be made available to the State without restriction or limitation on their further use. All documents produced or approved or otherwise created by the Local Government shall be transmitted to the State in the form of photocopy reproduction on a monthly basis as required by the State. The originals shall remain the property of the Local Government. At the request of the State, the Local Government shall submit any information required by the State in the format directed by the State.

**24. Inspection of Books and Records**

The Local Government shall maintain all books, papers, accounting records, and other documentation relating to costs incurred under this agreement and shall make those materials available to the State and, if federally funded, the Federal Highway Administration (FHWA) or their duly authorized representatives for review and inspection at its office during the contract period and for four (4) years from the date of completion of work defined under this agreement or until any impending litigation, or claims are resolved. Additionally, the State and FHWA and their duly authorized representatives shall have access to all the governmental records that are directly applicable to this agreement for the purpose of making audits, examinations, excerpts, and transcriptions.

**25. State Auditor**

The state auditor may conduct an audit or investigation of any entity receiving funds from the State directly under this agreement or indirectly through a subcontract under this agreement. Acceptance of funds directly under this agreement or indirectly through a

subcontract under this agreement acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

**26. Procurement and Property Management Standards**

The parties shall adhere to the procurement standards established in Title 49 CFR §18.36 and with the property management standard established in Title 49 CFR §18.32.

**27. Civil Rights Compliance**

The parties to this agreement shall comply with the regulations of the U.S. Department of Transportation as they relate to nondiscrimination (49 CFR Part 21 and 23 CFR Part 200), and Executive Order 11246 titled "Equal Employment Opportunity," as amended by Executive Order 11375 and supplemented in the Department of Labor Regulations (41 CFR Part 60).

**28. Applicability of Federal Provisions**

Articles 29 through 34 only apply if Federal funding is used in the acquisition of right of way or the adjustment of utilities.

**29. Office of Management and Budget (OMB) Cost Principles**

In order to be reimbursed with federal funds, the parties shall comply with the Cost Principles established in OMB Circular A-87 that specify that all reimbursed costs are allowable, reasonable, and allocable to the Project.

**30. Disadvantaged Business Enterprise (DBE) Program Requirements**

**A.** The parties shall comply with the DBE Program requirements established in 49 CFR Part 26.

**B.** The Local Government shall adopt, in its totality, the State's federally approved DBE program.

**C.** The Local Government shall set an appropriate DBE goal consistent with the State's DBE guidelines and in consideration of the local market, project size, and nature of the goods or services to be acquired. The Local Government shall have final decision-making authority regarding the DBE goal and shall be responsible for documenting its actions.

**D.** The Local Government shall follow all other parts of the State's DBE program referenced in TxDOT Form 2395, Memorandum of Understanding Regarding the Adoption of the Texas Department of Transportation's Federally -Approved Disadvantaged Business Enterprise by Entity and attachments found at web address http://txdot.gov/business/business_outreach/mou.htm.

**E.** The Local Government shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any U.S. Department of Transportation (DOT)-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The Local Government shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure non-discrimination in award and administration of DOT-assisted contracts. The State's DBE program, as required by 49 CFR Part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the Local Government of its failure to carry out its approved program, the State may impose sanctions as provided for under 49 CFR Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 USC 1001 and the Program Fraud Civil Remedies Act of 1986 (31 USC 3801 et seq.).

**F.** Each contract the Local Government signs with a contractor (and each subcontract the prime contractor signs with a sub-contractor) must include the following assurance: *The contractor, sub-recipient, or sub-contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this agreement, which may result in the termination of this agreement or such other remedy as the recipient deems appropriate.*

**31. Debarment Certification**

The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Local Government certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549 and further certifies that it will not do business with any party that is currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this contract shall require any party to a subcontract or purchase order awarded under this contract to certify its eligibility to receive federal funds and, when requested by the State, to furnish a copy of the certification.

**32. Lobbying Certification**

In executing this agreement, each signatory certifies to the best of that signatory's knowledge and belief, that:

**A.** No federal appropriated funds have been paid or will be paid by or on behalf of the parties to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal

contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

**B.** If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with federal contracts, grants, loans, or cooperative agreements, the signatory for the Local Government shall complete and submit the Federal Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

**C.** The parties shall require that the language of this certification shall be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and all sub-recipients shall certify and disclose accordingly. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Title 31 USC §1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

**33. Federal Funding Accountability and Transparency Act Requirements**

**A.** Any recipient of funds under this agreement agrees to comply with the Federal Funding Accountability and Transparency Act and implementing regulations at 2 CFR Part 170, including Appendix A. This agreement is subject to the following award terms: http://edocket.access.gpo.gov/2010/pdf/2010-22705.pdf and http://edocket.access.gpo.gov/2010/pdf/2010-22706.pdf.

**B.** The Local Government agrees that it shall:

1. Obtain and provide to the State a Central Contracting Registry (CCR) number (Federal Acquisition Regulation, Part 4, Sub-part 4.1100) if this award provides for more than $25,000 in Federal funding. The CCR number may be obtained by visiting the CCR web-site whose address is: https://www.bpn.gov/ccr/default.aspx;
2. Obtain and provide to the State a Data Universal Numbering System (DUNS) number, a unique nine-character number that allows the Federal government to track the distribution of federal money. The DUNS number may be requested free of charge for all businesses and entities required to do so by visiting the Dun & Bradstreet on-line registration website http://fedgov.dnb.com/webform; and
3. Report the total compensation and names of its top five (5) executives to the State if:
   i. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than $25,000,000; and
   ii. The compensation information is not already available through reporting to the U.S. Securities and Exchange Commission.

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**34. Single Audit Report**

**A.** The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in OMB Circular A-133.

**B.** If threshold expenditures of $500,000 or more are met during the Local Government's fiscal year, the Local Government must submit a Single Audit Report and Management Letter (if applicable) to TxDOT's Audit Office, 125 E. 11th Street, Austin, TX 78701 or contact TxDOT's Audit Office at http://www.txdot.gov/contact_us/audit.htm.

**C.** If expenditures are less than $500,000 during the Local Government's fiscal year, the Local Government must submit a statement to TxDOT's Audit Office as follows: "We did not meet the $500,000 expenditure threshold and therefore, are not required to have a single audit performed for FY _____."

**D.** For each year the project remains open for federal funding expenditures, the Local Government will be responsible for filing a report or statement as described above. The required annual filing shall extend throughout the life of the agreement, unless otherwise amended or the project has been formally closed out and no charges have been incurred within the current fiscal year.

**35. Signatory Warranty**

Each signatory warrants that the signatory has necessary authority to execute this agreement on behalf of the entity represented.

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
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Federal Project #
Federal Highway Administration
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Not Research and Development

**THIS AGREEMENT IS EXECUTED** by the State and the Local Government in duplicate.

**THE LOCAL GOVERNMENT**

_____
Signature

Honorable Judge Ramon Garcia
Typed or Printed Name

Judge, Hidalgo County
Title

_____
Date

**THE STATE OF TEXAS**

_____
John P. Campbell, P.E.
Director, Right of Way Division
Texas Department of Transportation

_____
Date

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
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Federal Project #
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# ATTACHMENT A
# RESOLUTION OR ORDINANCE

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
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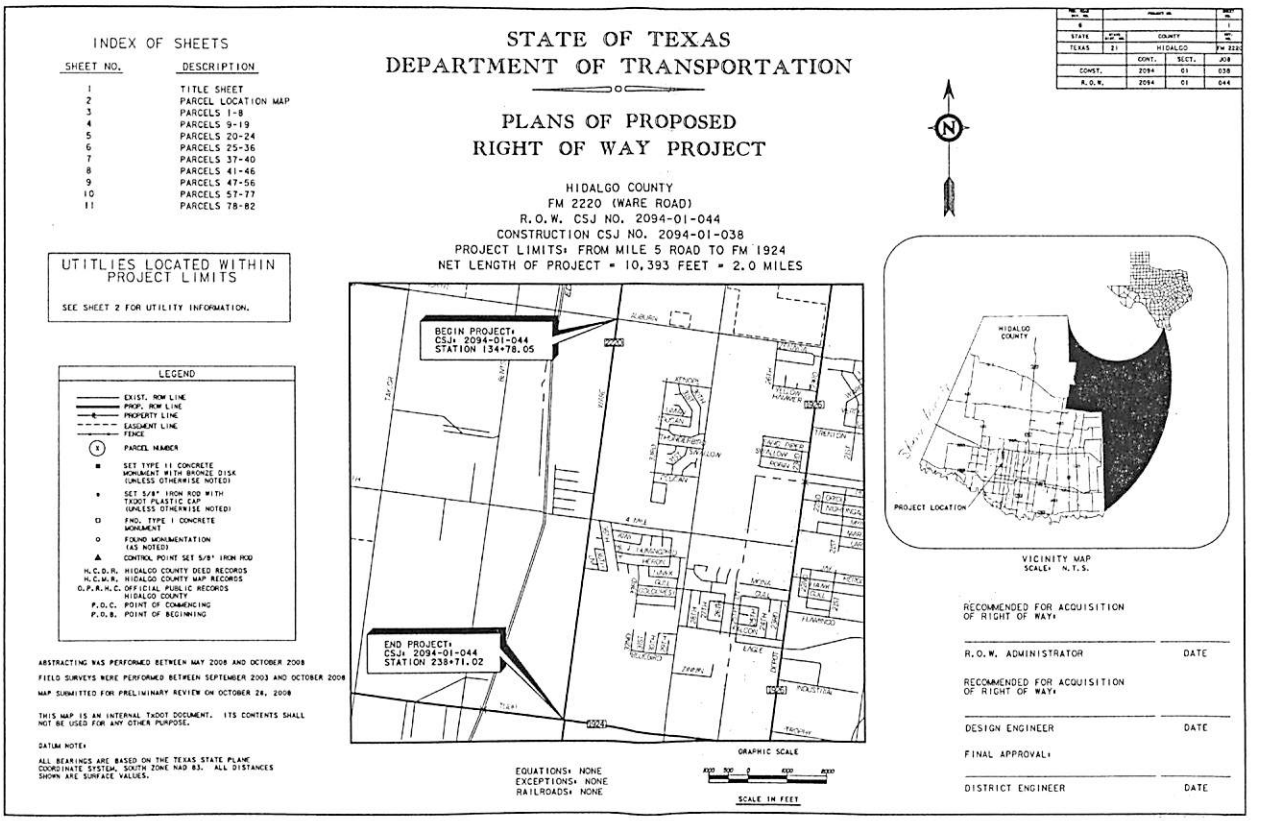
# ATTACHMENT B
# LOCATION MAP SHOWING PROJECT



INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2 | PARCEL LOCATION MAP |
| 3 | PARCELS 1-8 |
| 4 | PARCELS 9-19 |
| 5 | PARCELS 20-24 |
| 6 | PARCELS 25-36 |
| 7 | PARCELS 37-40 |
| 8 | PARCELS 41-46 |
| 9 | PARCELS 47-56 |
| 10 | PARCELS 57-77 |
| 11 | PARCELS 78-82 |

UTITLIES LOCATED WITHIN PROJECT LIMITS

SEE SHEET 2 FOR UTILITY INFORMATION.

LEGEND

EXIST. ROW LINE
PROP. ROW LINE
PROPERTY LINE
EASEMENT LINE
FENCE
(X) PARCEL NUMBER
SET TYPE II CONCRETE MONUMENT WITH BRONZE DISK (UNLESS OTHERWISE NOTED)
SET 5/8" IRON ROD WITH TXDOT PLASTIC CAP (UNLESS OTHERWISE NOTED)
FND. TYPE I CONCRETE MONUMENT
FOUND MONUMENTATION (AS NOTED)
CONTROL POINT SET 5/8" IRON ROD
H.C.D.R. HIDALGO COUNTY DEED RECORDS
H.C.M.R. HIDALGO COUNTY MAP RECORDS
O.P.R.H.C. OFFICIAL PUBLIC RECORDS HIDALGO COUNTY
P.O.C. POINT OF COMMENCING
P.O.B. POINT OF BEGINNING

ABSTRACTING WAS PERFORMED BETWEEN MAY 2008 AND OCTOBER 2008

FIELD SURVEYS WERE PERFORMED BETWEEN SEPTEMBER 2003 AND OCTOBER 2008

MAP SUBMITTED FOR PRELIMINARY REVIEW ON OCTOBER 24, 2008

THIS MAP IS AN INTERNAL TxDOT DOCUMENT. ITS CONTENTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.

DATUM NOTE:

ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD 83. ALL DISTANCES SHOWN ARE SURFACE VALUES.

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
RIGHT OF WAY PROJECT

HIDALGO COUNTY
FM 2220 (WARE ROAD)
R.O.W. CSJ NO. 2094-01-044
CONSTRUCTION CSJ NO. 2094-01-038
PROJECT LIMITS: FROM MILE 5 ROAD TO FM 1924
NET LENGTH OF PROJECT = 10,393 FEET = 2.0 MILES

| STATE | DIST. NO. | COUNTY | SHEET NO. |
|---|---|---|---|
| TEXAS | 21 | HIDALGO | FM 2220 |
| | CONT. | SECT. | JOB |
| CONST. | 2094 | 01 | 038 |
| R.O.W. | 2094 | 01 | 044 |

BEGIN PROJECT:
CSJ: 2094-01-044
STATION 134+78.05

END PROJECT:
CSJ: 2094-01-044
STATION 238+71.02

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROADS: NONE

GRAPHIC SCALE
SCALE IN FEET

HIDALGO COUNTY
PROJECT LOCATION

VICINITY MAP
SCALE: N.T.S.

RECOMMENDED FOR ACQUISITION OF RIGHT OF WAY:

R.O.W. ADMINISTRATOR DATE

RECOMMENDED FOR ACQUISITION OF RIGHT OF WAY:

DESIGN ENGINEER DATE

FINAL APPROVAL:

DISTRICT ENGINEER DATE

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

# ATTACHMENT C
# Standard Contractual Agreement
# Local Government Performs Work
# EDC Adjustment

| Description | Total Estimated Cost | State Participation | | | Local Participation | | |
|---|---|---|---|---|---|---|---|
| | | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. |
| Right of Way Acquisition | $1,145,000 | 90% | 98.3% | $1,125,535 | 10% | 1.7% | $19,465 |
| Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| Joint Bid Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| TOTAL | $1,145,000 | 90% | 98.3% | $1,125,535 | 10% | 1.7% | $19,465 |

Local Government requested and has been granted an Economically Disadvantaged County Adjustment from the Texas Transportation Commission on **October 25, 2012** by virtue of attached Minute Order No. **113345**, and approved a **83%** percent adjustment to the required **10%** percent local participation for this project. Also attached are completed Affidavit and EDC Program Information Sheet.

This is an estimate. The final amount of Local Government participation will be based on actual costs.

Texas Department of Transportation
PO BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

July 18, 2013

The Honorable Ramon Garcia
County Judge, Hidalgo County
P.O. Box 1356
Edinburg, Texas 78540

**RE: Approved Economically Disadvantaged County (EDC) Program Application**
**FM 2220 from Mile 5 to FM 1924**
**CSJ: 2094-01-038**

Dear Judge Garcia:

Your attached application for an Economically Disadvantaged County (EDC) Program adjustment to the required local participation for the referenced project has been approved. The adjustment is detailed below. This adjusted local participation percentage will be reflected in the Right of Way Agreement.

| Project Component | Usual Local Participation | Adjustment Percentage | Adjusted Local Participation |
|---|---|---|---|
| Right of Way | 10% | 83% | 1.7% |

Should you have any questions regarding this reduction please contact Homero Bazan, Jr., P.E., our Director of Transportation Planning and Development, or myself at (956)702-6100. As always, we look forward to working with you toward the implementation of this project.

Sincerely,

Mario R. Jorge, P.E.
Pharr District Engineer

Attachments

cc: Homer Bazan, Jr., P.E., Director of Transportation Planning and Development
Valente Olivarez, P.E, Pharr Area Engineer
Atidio Garza, P.E., Project Manager
Project File

## FY 2013 ECONOMICALLY DISADVANTAGED COUNTIES PROGRAM
## INFORMATION SHEET

**COUNTY** Hidalgo **APPLICANT** Hidalgo County

**District Contact Information**

**Name:** Maricela Salinas **Telephone:** 956.702.6352

If the project is an "**OFF-SYSTEM**" project, is the project in the Unified Transportation Program (UTP) and have a local funding agreement in place, or in a District Bank Balance Program?

**(Circle as appropriate)** YES or NO

If the applicant is a **CITY** within an eligible county, please answer the two following questions:

# 1 Economic Development Sales Tax? **(Circle as appropriate)** YES or NO

# 2 Population ( **2010** Census)? _____

**PROJECT INFORMATION**

| | |
|---|---|
| UTP PRIORITY STATUS: | CON |
| CSJ: | 2094-01-038 |
| ESTIMATED LETTING DATE | Nov. 2014 |

On-System? ( Circle as appropriate) YES or NO

**LOCATION AND LIMITS - Give highway number with limits from and to**

FM 2220 from Mile 5 to FM 1924

**PROJECT SCOPE- Give type of work**

Widen to 4 Lane

**ADJUSTMENT RATIONAL- Give reason why the adjustment is needed**

Hidalgo County is marked with high unemployment & proverty rates, the highest in the state of Texas. Meeting the basic needs of the County along with addressing the infrastructure demands place a heavy burden on the County budget. We therefore are requesting a reduction in the required match for this project.

**ANTICIPATED PROJECT COST BREAKDOWN OF ELIGIBLE COMPONENTS**

Total Adjustment - 83

| 1. Project Component | 2. Est. Total Cost ($) | 3. Local Participation (%) | | 4. Est. Required Local Match ($) | 5. Local Participation After Adjustment ($) |
|---|---|---|---|---|---|
| Right of Way | $1,145,000 | 10% | | $114,500 | $19,465 |
| | | | | $0 | $0 |
| | | | | $0 | $0 |
| | | | | $0 | $0 |
| TOTAL | $1,145,000 | | | $114,500 | $19,465 |

Approved by _____ Date 7/29/13

Texas Department of Transportation

# AFFIDAVIT

The State of Texas,
County of Hidalgo

Before me, Monica Badillo, a notary public in and for the State of Texas, on this day personally appeared Ramon Garcia, who being by me duly sworn, upon oath says:

I, Ramon Garcia, representing the city / county of Hidalgo, having been duly elected on 1-1-11 and having served continuously since that time, certify in my official capacity that, to the best of my knowledge, the information contained in this application is true and correct.

Ramon Garcia — Signature

7/9/13 — Date

Subscribed and sworn to before me, by the said Ramon Garcia, this 9th day of July, 2013, to certify which witness my hand and seal of office.

My commission expires April 21, 2015.

MONICA BADILLO NOTARY PUBLIC STATE OF TEXAS EXPIRES 04-21-2015

Monica Badillo
Official Signature

Monica Badillo
Printed or stamped name of Notary

FY 2013

APPROVED BY COMMISSIONERS' COURT ON: 7/9/13

EDCP

**TEXAS TRANSPORTATION COMMISSION**

VARIOUS Counties

VARIOUS Districts

**MINUTE ORDER**



Transportation Code, §222.053(a), defines an "economically disadvantaged county" as a county that has, in comparison to other counties in the state: (1) below average per capita taxable property value; (2) below average per capita income; and (3) above average unemployment.

Transportation Code, §222.053(c), directs the Texas Transportation Commission (commission), when evaluating a proposal for a highway project in a political subdivision that consists of all or a portion of an economically disadvantaged county, to adjust the minimum local matching funds requirement after evaluating the political subdivision's effort and ability to meet the requirement.

Transportation Code, §222.053(f), requires the commission to certify a county as economically disadvantaged on an annual basis as soon as possible after the Comptroller of Public Accounts (comptroller) provides reports on the economic indicators listed above.

43 TAC §15.55(b)(2) provides that, in determining the adjustment to the local matching funds requirement, and the local government's efforts and ability to meet the requirement, the commission will consider a local government's: (A) population level; (B) bonded indebtedness; (C) tax base; (D) tax rate; (E) extent of in-kind resources available; and (F) economic development sales tax.

The comptroller has provided the data needed to determine the counties eligible for the Economically Disadvantaged Counties Program for 2013. The counties' efforts and ability to provide a local match have been considered using the criteria set forth in 43 TAC §15.55. Exhibit A lists the eligible counties and the respective recommended local match adjustments. Exhibit B establishes additional local match adjustments for cities within these counties participating in the program.

IT IS THEREFORE ORDERED by the commission that the list of counties eligible for the 2013 Economically Disadvantaged Counties Program is certified and the local match adjustment for each county is established, as shown in Exhibit A, as well as additional adjustments for cities participating in the program, as shown in Exhibit B.

Submitted and reviewed by:

Director of Planning

Recommended by:

Executive Director

113345 OCT25 12

Minute Number

Date Passed

# EXHIBIT A

## Economically Disadvantaged Counties
## FY 2013

| FY 2013 Eligible Counties | Adjustment % |
|---|---|
| Anderson County | 70 |
| Angelina County | 61 |
| Atascosa County | 78 |
| Bastrop County | 74 |
| Bee County | 72 |
| Bosque County | 61 |
| Brooks County | 79 |
| Caldwell County | 81 |
| Calhoun County | 62 |
| Cameron County | 70 |
| Camp County | 58 |
| Cass County | 62 |
| Cherokee County | 71 |
| Concho County | 84 |
| Dawson County | 68 |
| Delta County | 92 |
| DeWitt County | 71 |
| Dickens County | 68 |
| Dimmit County | 79 |
| Duval County | 91 |
| El Paso County | 61 |
| Ellis County | 57 |
| Falls County | 86 |
| Fannin County | 74 |
| Frio County | 81 |
| Grayson County | 64 |
| Grimes County | 69 |
| Hall County | 78 |
| Henderson County | 64 |
| Hidalgo County | 83 |
| Hill County | 63 |
| Houston County | 61 |
| Hunt County | 65 |
| Jasper County | 73 |
| Johnson County | 58 |
| Karnes County | 71 |
| Kaufman County | 67 |
| Kinney County | 73 |

| FY 2013 Eligible Counties | Adjustment % |
|---|---|
| La Salle County | 87 |
| Lamar County | 61 |
| Leon County | 59 |
| Liberty County | 66 |
| Madison County | 76 |
| Marion County | 66 |
| Matagorda County | 51 |
| Maverick County | 71 |
| Milam County | 71 |
| Mitchell County | 67 |
| Morris County | 50 |
| Navarro County | 71 |
| Newton County | 78 |
| Palo Pinto County | 53 |
| Presidio County | 80 |
| Rains County | 73 |
| Red River County | 78 |
| Reeves County | 68 |
| Runnels County | 70 |
| Sabine County | 61 |
| San Augustine County | 73 |
| San Jacinto County | 72 |
| Schleicher County | 83 |
| Starr County | 88 |
| Titus County | 60 |
| Trinity County | 77 |
| Tyler County | 74 |
| Upshur County | 61 |
| Uvalde County | 78 |
| Val Verde County | 65 |
| Waller County | 77 |
| Webb County | 69 |
| Wharton County | 65 |
| Wichita County | 64 |
| Willacy County | 81 |
| Wood County | 67 |
| Zavala County | 89 |

Cities within an Economically Disadvantaged County may receive higher percentage adjustments beyond their respective county's adjustment under two conditions: if they have a local economic development sales tax and their population is less than 5000. An adjustment can not exceed 95 percent or be less than 15 percent.

# EXHIBIT B

## Additional Adjustments for Cities Within an Economically Disadvantaged County FY 2013

Every eligible county receives an adjustment to its local match requirement ranging from 15 (minimum) to 95 (maximum) percent. A city within an economically disadvantaged county receives an adjustment equal to the adjustment for the county in which it is located, with the possibility of up to 10 additional percentage points based on its population and the existence of an economic development sales tax.

**The two following tables depict the additional percentage points that cities may be granted.**

***Economic Development Sales Tax:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| YES | *5%* |
| NO | *0%* |

***Population:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| x < 1,000 | 5% |
| 1,000 < x < 2,000 | 4% |
| 2,000 < x < 3,000 | 3% |
| 3,000 < x < 4,000 | 2% |
| 4,000 < x < 5,000 | 1% |
| x > 5,000 | 0% |

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**STATE OF TEXAS** §

**COUNTY OF TRAVIS** §

## AGREEMENT FOR RIGHT OF WAY PROCUREMENT

**THIS AGREEMENT** is made by and between the State of Texas, acting through the Texas Department of Transportation, called the "State", and **Hidalgo County**, Texas, acting through its duly authorized officials, called the "Local Government."

## WITNESSETH

**WHEREAS**, Texas Transportation Code §§ 201.103 and 222.052 establish that the State shall design, construct, and operate a system of highways in cooperation with local governments; and

**WHEREAS**, Texas Transportation Code § 201.209 authorizes the State and a Local Government to enter into agreements in accordance with Texas Government Code, Chapter 791; and

**WHEREAS**, the State has deemed it necessary to make certain highway improvements on Highway No. **FM 2220** from **Mile 5 Road** to **FM 1924**, and this section of highway improvements will necessitate the acquisition of certain right of way and the relocating and adjusting of utilities, called the "Project"; and

**WHEREAS**, 43 Texas Administrative Code §15.55 defines the Local Government's cost participation in acquiring the right of way and relocating or adjusting eligible utilities for the proper improvement of the State Highway System; and

**WHEREAS**, the Governing Body of the Local Government has approved entering into this agreement by resolution or ordinance dated _____, 2013, which is attached to and made a part of this agreement as Attachment A. A map showing the Project location appears in Attachment B, which is attached to and made a part of this agreement.

**NOW THEREFORE,** the State and the Local Government do agree as follows:

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

## AGREEMENT

1. **Agreement Period**
   This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed. This agreement shall remain in effect until the Project is completed or unless terminated as provided below.

2. **Termination**
   This agreement shall remain in effect until the project is completed and accepted by all parties, unless:
   **A.** The agreement is terminated in writing with the mutual consent of the parties;
   **B.** The agreement is terminated by one party because of a breach, in which case any cost incurred because of the breach shall be paid by the breaching party; or
   **C.** The Project is inactive for thirty-six (36) months or longer and no expenditures have been charged against federal funds, in which case the State may in its discretion terminate this agreement.

3. **General**
   **A.** The Local Government agrees to proceed with acquisition of right of way and the State agrees to reimburse the Local Government for its share of the cost of the right of way, providing the acquisition and reimbursement are accomplished according to the provisions outlined in this agreement.
   **B.** The State and the Local Government agree that acquisition of this right of way shall be in accordance with the *Texas Department of Transportation Right of Way Manual* and all applicable federal and state laws governing the acquisition of real property.
   **C.** It is understood that the terms of this agreement shall apply to new right of way, authorized and requested by the State, which is needed and not yet dedicated, in use, or previously acquired in the name of the State or Local Government for highway, street, or road purposes. This agreement shall also apply, with regard to any existing right of way, to outstanding property interests not previously acquired and to eligible utility adjustments not previously made, as authorized and requested by the State.
   **D.** It is further understood that if unusual circumstances develop in the right of way acquisition and they are not clearly covered by the terms of this agreement, those unusual circumstances or problems will be resolved by mutual agreement between the State and the Local Government.

4. **Local Project Sources and Uses of Funds**
   **A.** The total estimated cost of the Project is shown in Attachment C, Project Budget Estimate, which is attached to and made a part of this agreement. The expected cash contributions from the Federal or State government, the Local Governments, or other parties are shown in Attachment C. The State will pay for only those project costs that have been approved by the Texas Transportation Commission. If Federal funding is

included, the State and the Federal Government will not reimburse the Local Government for any work performed before the federal spending authority is formally obligated to the Project by the Federal Highway Administration. After federal funds have been obligated, the State will send to the Local Government a copy of the formal documentation showing the obligation of funds including federal award information. The Local Government is responsible for 100% of the cost of any work performed under its direction or control before the federal spending authority is formally obligated.

**B.** If the Local Government will perform any work under this contract for which reimbursement will be provided by or through the State, the Local Government must complete training before federal spending authority is obligated. Training is complete when at least one individual who is working actively and directly on the Project successfully completes and receives a certificate for the course entitled *Local Government Project Procedures Qualification for the Texas Department of Transportation*. The Local Government shall provide the certificate of qualification to the State. The individual who receives the training certificate may be an employee of the Local Government or an employee of a firm that has been contracted by the Local Government to perform oversight of the Project. The State in its discretion may deny reimbursement if the Local Government has not designated a qualified individual to oversee the Project.

**C.** The Project cost estimate in Attachment C shows how necessary resources for completing the Project will be provided by major cost categories. These categories may include but are not limited to: (1) costs of real property and (2) costs of utility work.

**D.** The State will be responsible for securing the Federal and State share of the funding required for the development of the local Project. If the Local Government is due funds for expenses incurred, these funds will be reimbursed to the Local Government on a cost basis.

**E.** The Local Government will be responsible for all non-federal or non-state participation costs associated with the Project, including any overruns in excess of the approved local project budget unless otherwise provided for in this agreement or approved otherwise in an amendment to this agreement.

**F.** In the event any existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive, including, but not limited to, outdoor advertising or storm water drainage facility requirements, is more restrictive than State or federal regulations, or any other locally proposed change, including, but not limited to, plats or re-plats, results in any increased costs to the State, then the Local Government will pay one hundred percent (100%) of all those increased costs, even if the applicable county qualifies as an Economically Disadvantaged County (EDC). The amount of the increased costs associated with the existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive will be determined by the State at its sole discretion.

**G.** If the Local government is an EDC and if the State has approved adjustments to the standard financing arrangement, this agreement reflects those adjustments.

H. Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

I. The Local Government is authorized to submit requests for reimbursement by submitting the original of an itemized invoice in a form and containing all items required by the State no more frequently than monthly, and no later than ninety (90) days after costs are incurred. If the Local Government submits invoices more than ninety (90) days after the costs are incurred, and if federal funding is reduced as a result, the State shall have no responsibility to reimburse the Local Government for those costs.

**5. Location Surveys and Preparation of Right of Way Data**

The State, without cost to the Local Government, will perform the necessary preliminary engineering and title investigation in order to supply to the Local Government the data and instruments necessary to obtain acceptable title to the desired right of way.

**6. Determination of Right of Way Values**

The Local Government agrees to make a determination of property values for each right of way parcel by methods acceptable to the State and to submit to the State a tabulation of those values, signed by the appropriate Local Government representative. The tabulation shall list the parcel numbers, ownership, acreage, and recommended compensation. Compensation shall be shown in the component parts of land taken, itemization of improvements taken, damages (if any), and the amounts by which the total compensation will be reduced if the owner retains improvements. This tabulation shall be accompanied by an explanation to support the determined values, together with a copy of information or reports used in arriving at all determined values. This work will be performed by the Local Government at its expense without cost participation by the State. The State will review the data submitted and may base its reimbursement on the values that are determined by this review. The State, however, reserves the right to perform at its own expense any additional investigation, including supplemental appraisal work by State employees or by employment of fee appraisers, deemed necessary for determination of values to constitute the basis for State reimbursement. The parties may waive the requirement that the Local Government submit to the State property value determinations for any part of the required right of way by a writing signed by both parties. In instances of a waiver, the State, in its discretion, will make a determination of values to constitute the basis for State reimbursement.

**7. Negotiations**

The State will notify the Local Government as soon as possible as to the State's determination of value. Negotiation and settlement with the property owner will be the responsibility of the Local Government without participation by the State; however, the Local Government will notify the State immediately prior to closing the transaction so that a current title investigation may be made to determine if there has been any change in the title. The Local Government will deliver properly executed instruments of conveyance that,

together with any curative instruments found to be necessary as a result of the State's title investigation, will properly vest good and indefeasible title in the State for each right of way parcel involved. The Local Government will also deliver to the State an owner's policy of title insurance for each parcel, except as otherwise specifically approved by the State. Upon payment to the property owner of the agreed purchase price, the Local Government is authorized and directed to secure for the State possession of each parcel in accordance with all applicable Federal and State laws governing relocation assistance, notices to vacate, and forcible detainer. The costs incidental to negotiation, recording the right of way instruments, and securing possession of the parcels will be the responsibility of the Local Government. The cost of title insurance, closing services, and all costs of relocation assistance as authorized by applicable Federal and State laws will be the responsibility of the State.

**8. Administrative Settlements**

After the offer has been delivered to the property owner, and prior to the Special Commissioners' Hearing, the property owner may deliver one written counteroffer ("Administrative Settlement Proposal") to the Local Government. The Local Government will evaluate the Administrative Settlement Proposal and make a recommendation of approval or disapproval to the State. The State will consider the Administrative Settlement Proposal and the Local Government's recommendation and make a final determination of approval or disapproval in accordance with current State procedures. The State's approval of the Administrative Settlement Proposal is only for purposes of closing the purchase of the property prior to the Special Commissioners' Hearing. If a closing of the purchase does not occur prior to the hearing, the State's approval is automatically, without further action, withdrawn, and the State will participate only in the original approved value. In the event the State does not approve the Administrative Settlement Proposal, and the Local Government elects to purchase the property at a value greater than the original approved value, the State's participation in the purchase price will apply only to the original approved value, and the Local Government will pay one hundred percent (100%) of the costs that exceed the original approved value, even if the applicable county qualifies as an EDC.

**9. Condemnation**

Condemnation proceedings will be initiated at a time selected by the Local Government and will be the Local Government's responsibility at its own expense except as follows. The Local Government will obtain from the State without cost current title information and engineering data at the time condemnation is to be initiated. Except as set forth elsewhere in this agreement, the Local Government will concurrently file condemnation proceedings and a notice of lis pendens for each case in the name of the State, and in each case the judgment of the court will decree title and possession to the property condemned to the State. The Local Government may, as set forth in Article 11 (Excess Takings) and where it is determined to be necessary, enter condemnation proceedings in its own name. Property acquired in the Local Government's name for the State must comply with requirements set

forth in the engineering data and title investigation previously furnished to the Local Government by the State when the Local Government conveys the property to the State.

10. **Court Costs, Costs of Special Commissioners' Hearings and Appraisal Expense**
Court costs and costs of Special Commissioners' Hearings assessed against the State or Local Government in condemnation proceedings conducted on behalf of the State and fees incident to those hearings will be paid by the Local Government. Those costs and fees, with the exception of recording fees, will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under the established reimbursement procedure, provided that they are eligible for payment by the State under existing law. Where the Local Government uses the State's appraisers employed on a fee basis in Special Commissioners' Hearings or subsequent appeals, the cost of the appraiser for updating the report, preparing new reports, preparing for court testimony, and appearing in court to testify in support of the appraisal will be paid direct by the Local Government, but will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under established procedure provided prior approval for the appraiser has been obtained from the State. The fee paid to the appraiser by the Local Government shall be in accordance with the fee schedule set forth in the appraiser's contract for appraisal services with the State.

11. **Excess Takings**
In the event the Local Government desires to acquire land in excess of that requested by the State for right of way purposes, the State's cost participation will be limited to the property needed for its purposes. If the Local Government elects to acquire the entire property, including the excess taking, by a single instrument of conveyance or in one eminent domain proceeding, the property involved will be acquired in the name of the Local Government and that portion requested by the State for right of way will be separately conveyed to the State by the Local Government. When the property is acquired by negotiation, the State's participation will be based on the State's approved value of that part of the property requested for right of way purposes, provided that the approved value does not exceed the actual payment made by the Local Government. When the property is acquired by condemnation, the State's participation will be in the proportionate part of the final judgment amount computed on the basis of the relationship of the State's approved value to the State's predetermined value for the whole property.

12. **Improvements**
    **A.** Property owners will be afforded an opportunity in the negotiations to retain any or all of their improvements in the right of way taking. In anticipation of the owner's desiring to retain improvements, the State's approved value will include the amounts by which the upper limit of State participation will be reduced for the retention. It is further agreed that the upper limit for the State's participation in the Local Government's cost for an improved parcel will be reduced as shown in the State's approved value where the owner retains an improvement that is to be moved by either the Local Government or

the owner. If improvements are, in whole or part, a part of the right of way taking and are not retained by the owner, title is to be secured in the name of the State.

**B.** The State will participate in the acquisition of a structure severed by the right of way line if the part of the house, building, or similar structure that lies outside the right of way cannot be reconstructed adequately or there is nothing but salvage left, provided that the State's value is established on this basis and provided that title to the entire structure is taken in the name of the State. The State shall dispose of all improvements acquired. The net revenue derived by the State from the disposition of any improvements sold will be credited to the cost of the right of way procured and shared with the Local Government.

**13. Relocation of Utilities**

If the required right of way encroaches on an existing utility located on its own right of way and the proposed highway construction requires the adjustment, removal, or relocation of the utility facility, the State will establish the necessity for the utility work. State participation in the cost of making the necessary change, less any resulting increase in the value to the utility and less any salvage value obtainable, may be obtained by either the "actual cost" or "lump sum" procedures. Reimbursement under "actual cost" will be made subsequent to the Local Government's certification that the work has been completed and will be made in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the eligible items of cost as paid to the utility owner after the completion of an audit. The "lump sum" procedure requires that the State establish the eligibility of the utility work and enter into a three-party agreement with the owners of the utility facilities and the Local Government. This agreement must set forth the exact lump sum amount of reimbursement. The utility will be reimbursed by the Local Government after proper certification by the utility that the work has been done, and the reimbursement will be based on the prior lump sum agreement. The State will reimburse the Local Government in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the firm commitment as paid to the utility owner. Reimbursement is subject to the provision that the individual lump sum agreement approved value shall not exceed $20,000, except as specifically approved by the State. In those cases where a single operation is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based upon the circumstances involved. The firm commitment to the utility will be an appropriate item of right of way. The adjustment, removal, or relocation of any utility line on publicly owned right of way by sufferance or permit will not be eligible for State reimbursement. The term "utility" under this agreement shall include publicly, privately, and cooperatively owned utilities.

**14. Fencing Requirements**

**A.** The Local Government may handle fencing through one of the following methods.

1. The Local Government may pay the property owner for existing right of way fences based on the value those fences contribute to the part taken and damages for an unfenced condition resulting from the right of way taking, in which case the estimated

value of those right of way fences and damages will be included in the recommended value and the approved value; or

2. The Local Government may perform the fencing on the property owner's remaining property.

**B.** When the Local Government performs right of way fencing as a part of the total right of way consideration, neither the value of existing right of way fences nor damages for an unfenced condition will be included in the recommended value or the approved value. State participation in the Local Government's cost of constructing right of way fencing on the property owner's remainder may be based on either the actual cost of the fencing or on a predetermined lump sum amount. The State will be given credit for any salvaged fencing material and will not participate in any overhead costs of the Local Government.

**C.** If State participation is to be requested on the lump sum basis, the State and the Local Government will reach an agreement prior to the actual accomplishment of the work as to the necessity, eligibility, and a firm commitment as to the cost of the entire fencing work to be performed. This is subject to the provision that the lump sum approved cost shall not exceed $20,000, except as specifically approved by the State. In the event the cost of the fencing is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based on the circumstances involved.

**15. Basis for Reimbursement Calculation**

**A.** The State will reimburse the Local Government for right of way acquired after the date of this agreement in an amount not to exceed ninety percent (90%), or the applicable EDC-adjusted percent, of the cost of the right of way acquired in accordance with the terms and provisions of this agreement. The State's reimbursement will be in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the State's predetermined value of each parcel, or the net cost of each parcel, whichever is less. All requests by the Local Government for reimbursement shall comply with the then current reimbursement submission requirements set forth in the *Texas Department of Transportation Right of Way Manual.*

**B.** If condemnation is necessary and title is taken under Article 9 (Condemnation), the participation by the State shall be based on the final judgment, conditioned on the State having been notified in writing prior to the filing of the suit and on prompt notice being given as to all action taken under the suit. The State shall have the right to become a party to the suit at any time for all purposes, including the right of appeal at any stage of the proceedings. All other items of cost shall be borne by the State and the Local Government as provided in other sections of this agreement.

**C.** If a lump sum fencing or utility adjustment agreement has been executed, the State will reimburse the Local Government in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the predetermined lump sum cost of the right of way fencing or utility adjustment.

**D.** If the Local Government prefers not to execute a lump sum agreement for either fencing or utility adjustments, the State will reimburse on the actual cost of that fencing or those adjustments. The Local Government's request for reimbursement will be supported by a breakdown of the labor, materials, and equipment used.

**16. Amendments**

Amendments to this agreement due to changes in the character of the work, terms of the agreement, or responsibilities of the parties relating to the Project may be enacted through a mutually agreed upon, written supplemental agreement.

**17. Notices**

All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, to the following addresses:

| **Local Government:** | **State:** |
|---|---|
| Honorable Ramon Garcia | Director of Right of Way Division |
| Judge, Hidalgo County | Texas Department of Transportation |
| P.O. Box 1356 | 125 E. 11th Street |
| Edinburg, TX 78540 | Austin, Texas 78701 |

All notices shall be deemed given on the date delivered or deposited in the mail, unless otherwise provided by this agreement. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that notices shall be delivered personally or by certified U.S. mail and that request shall be honored and carried out by the other party.

**18. Remedies**

This agreement shall not be considered as specifying the exclusive remedy for any agreement default, but all remedies existing at law and in equity may be availed of by either party to this agreement and shall be cumulative.

**19. Legal Construction**

If one or more of the provisions contained in this agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, that invalidity, illegality, or unenforceability shall not affect any other provisions and this agreement shall be construed as if it did not contain the invalid, illegal, or unenforceable provision.

**20. Responsibilities of the Parties**

The State and the Local Government agree that neither party is an agent, servant, or employee of the other party and each party agrees it is responsible for its individual acts and deeds as well as the acts and deeds of its contractors, employees, representatives, and agents.

**21. Compliance with Laws**

The parties shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of this agreement. When required, the Local Government shall furnish the State with satisfactory proof of this compliance.

**22. Sole Agreement**

This agreement constitutes the sole and only agreement between the parties and supersedes any prior understandings or written or oral agreements respecting the subject matter of this agreement.

**23. Ownership of Documents**

Upon completion or termination of this agreement, all documents prepared by the State shall remain the property of the State. All data prepared under this agreement shall be made available to the State without restriction or limitation on their further use. All documents produced or approved or otherwise created by the Local Government shall be transmitted to the State in the form of photocopy reproduction on a monthly basis as required by the State. The originals shall remain the property of the Local Government. At the request of the State, the Local Government shall submit any information required by the State in the format directed by the State.

**24. Inspection of Books and Records**

The Local Government shall maintain all books, papers, accounting records, and other documentation relating to costs incurred under this agreement and shall make those materials available to the State and, if federally funded, the Federal Highway Administration (FHWA) or their duly authorized representatives for review and inspection at its office during the contract period and for four (4) years from the date of completion of work defined under this agreement or until any impending litigation, or claims are resolved. Additionally, the State and FHWA and their duly authorized representatives shall have access to all the governmental records that are directly applicable to this agreement for the purpose of making audits, examinations, excerpts, and transcriptions.

**25. State Auditor**

The state auditor may conduct an audit or investigation of any entity receiving funds from the State directly under this agreement or indirectly through a subcontract under this agreement. Acceptance of funds directly under this agreement or indirectly through a

subcontract under this agreement acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

**26. Procurement and Property Management Standards**
The parties shall adhere to the procurement standards established in Title 49 CFR §18.36 and with the property management standard established in Title 49 CFR §18.32.

**27. Civil Rights Compliance**
The parties to this agreement shall comply with the regulations of the U.S. Department of Transportation as they relate to nondiscrimination (49 CFR Part 21 and 23 CFR Part 200), and Executive Order 11246 titled "Equal Employment Opportunity," as amended by Executive Order 11375 and supplemented in the Department of Labor Regulations (41 CFR Part 60).

**28. Applicability of Federal Provisions**
Articles 29 through 34 only apply if Federal funding is used in the acquisition of right of way or the adjustment of utilities.

**29. Office of Management and Budget (OMB) Cost Principles**
In order to be reimbursed with federal funds, the parties shall comply with the Cost Principles established in OMB Circular A-87 that specify that all reimbursed costs are allowable, reasonable, and allocable to the Project.

**30. Disadvantaged Business Enterprise (DBE) Program Requirements**

**A.** The parties shall comply with the DBE Program requirements established in 49 CFR Part 26.

**B.** The Local Government shall adopt, in its totality, the State's federally approved DBE program.

**C.** The Local Government shall set an appropriate DBE goal consistent with the State's DBE guidelines and in consideration of the local market, project size, and nature of the goods or services to be acquired. The Local Government shall have final decision-making authority regarding the DBE goal and shall be responsible for documenting its actions.

**D.** The Local Government shall follow all other parts of the State's DBE program referenced in TxDOT Form 2395, Memorandum of Understanding Regarding the Adoption of the Texas Department of Transportation's Federally -Approved Disadvantaged Business Enterprise by Entity and attachments found at web address http://txdot.gov/business/business_outreach/mou.htm.

**E.** The Local Government shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any U.S. Department of Transportation (DOT)-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The Local Government shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure non-discrimination in award and administration of DOT-assisted contracts. The State's DBE program, as required by 49 CFR Part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the Local Government of its failure to carry out its approved program, the State may impose sanctions as provided for under 49 CFR Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 USC 1001 and the Program Fraud Civil Remedies Act of 1986 (31 USC 3801 et seq.).

**F.** Each contract the Local Government signs with a contractor (and each subcontract the prime contractor signs with a sub-contractor) must include the following assurance: *The contractor, sub-recipient, or sub-contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this agreement, which may result in the termination of this agreement or such other remedy as the recipient deems appropriate.*

**31. Debarment Certification**

The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Local Government certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549 and further certifies that it will not do business with any party that is currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this contract shall require any party to a subcontract or purchase order awarded under this contract to certify its eligibility to receive federal funds and, when requested by the State, to furnish a copy of the certification.

**32. Lobbying Certification**

In executing this agreement, each signatory certifies to the best of that signatory's knowledge and belief, that:

**A.** No federal appropriated funds have been paid or will be paid by or on behalf of the parties to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal

contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

**B.** If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with federal contracts, grants, loans, or cooperative agreements, the signatory for the Local Government shall complete and submit the Federal Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

**C.** The parties shall require that the language of this certification shall be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and all sub-recipients shall certify and disclose accordingly. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Title 31 USC §1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

**33. Federal Funding Accountability and Transparency Act Requirements**

**A.** Any recipient of funds under this agreement agrees to comply with the Federal Funding Accountability and Transparency Act and implementing regulations at 2 CFR Part 170, including Appendix A. This agreement is subject to the following award terms: http://edocket.access.gpo.gov/2010/pdf/2010-22705.pdf and http://edocket.access.gpo.gov/2010/pdf/2010-22706.pdf.

**B.** The Local Government agrees that it shall:

1. Obtain and provide to the State a Central Contracting Registry (CCR) number (Federal Acquisition Regulation, Part 4, Sub-part 4.1100) if this award provides for more than $25,000 in Federal funding. The CCR number may be obtained by visiting the CCR web-site whose address is: https://www.bpn.gov/ccr/default.aspx;
2. Obtain and provide to the State a Data Universal Numbering System (DUNS) number, a unique nine-character number that allows the Federal government to track the distribution of federal money. The DUNS number may be requested free of charge for all businesses and entities required to do so by visiting the Dun & Bradstreet on-line registration website http://fedgov.dnb.com/webform; and
3. Report the total compensation and names of its top five (5) executives to the State if:
   i. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than $25,000,000; and
   ii. The compensation information is not already available through reporting to the U.S. Securities and Exchange Commission.

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
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**34. Single Audit Report**

**A.** The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in OMB Circular A-133.

**B.** If threshold expenditures of $500,000 or more are met during the Local Government's fiscal year, the Local Government must submit a Single Audit Report and Management Letter (if applicable) to TxDOT's Audit Office, 125 E. 11th Street, Austin, TX 78701 or contact TxDOT's Audit Office at http://www.txdot.gov/contact_us/audit.htm.

**C.** If expenditures are less than $500,000 during the Local Government's fiscal year, the Local Government must submit a statement to TxDOT's Audit Office as follows: "We did not meet the $500,000 expenditure threshold and therefore, are not required to have a single audit performed for FY _____."

**D.** For each year the project remains open for federal funding expenditures, the Local Government will be responsible for filing a report or statement as described above. The required annual filing shall extend throughout the life of the agreement, unless otherwise amended or the project has been formally closed out and no charges have been incurred within the current fiscal year.

**35. Signatory Warranty**

Each signatory warrants that the signatory has necessary authority to execute this agreement on behalf of the entity represented.

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
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Federal Project #
Federal Highway Administration
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Not Research and Development

**THIS AGREEMENT IS EXECUTED** by the State and the Local Government in duplicate.

**THE LOCAL GOVERNMENT**

_____
Signature

Honorable Judge Ramon Garcia
Typed or Printed Name

Judge, Hidalgo County
Title

_____
Date

**THE STATE OF TEXAS**

_____
John P. Campbell, P.E.
Director, Right of Way Division
Texas Department of Transportation

_____
Date

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
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# ATTACHMENT A
# RESOLUTION OR ORDINANCE

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
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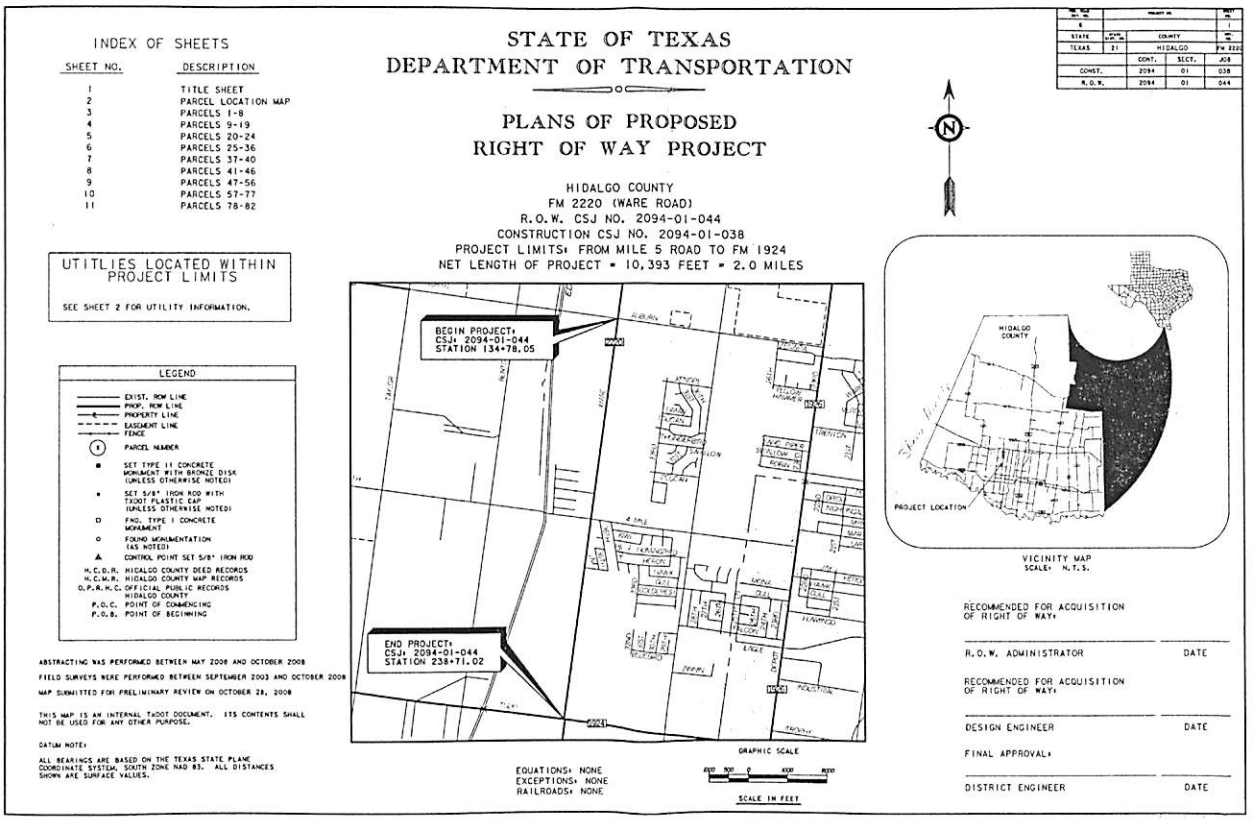
# ATTACHMENT B
# LOCATION MAP SHOWING PROJECT



INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2 | PARCEL LOCATION MAP |
| 3 | PARCELS 1-8 |
| 4 | PARCELS 9-19 |
| 5 | PARCELS 20-24 |
| 6 | PARCELS 25-36 |
| 7 | PARCELS 37-40 |
| 8 | PARCELS 41-46 |
| 9 | PARCELS 47-56 |
| 10 | PARCELS 57-77 |
| 11 | PARCELS 78-82 |

UTITLIES LOCATED WITHIN PROJECT LIMITS

SEE SHEET 2 FOR UTILITY INFORMATION.

LEGEND

EXIST. ROW LINE
PROP. ROW LINE
PROPERTY LINE
EASEMENT LINE
FENCE
(1) PARCEL NUMBER
SET TYPE II CONCRETE MONUMENT WITH BRONZE DISK (UNLESS OTHERWISE NOTED)
SET 5/8" IRON ROD WITH TXDOT PLASTIC CAP (UNLESS OTHERWISE NOTED)
FND. TYPE I CONCRETE MONUMENT
FOUND MONUMENTATION (AS NOTED)
CONTROL POINT SET 5/8" IRON ROD
H.C.D.R. HIDALGO COUNTY DEED RECORDS
H.C.M.R. HIDALGO COUNTY MAP RECORDS
O.P.R.H.C. OFFICIAL PUBLIC RECORDS HIDALGO COUNTY
P.O.C. POINT OF COMMENCING
P.O.B. POINT OF BEGINNING

ABSTRACTING WAS PERFORMED BETWEEN MAY 2008 AND OCTOBER 2008

FIELD SURVEYS WERE PERFORMED BETWEEN SEPTEMBER 2003 AND OCTOBER 2008

MAP SUBMITTED FOR PRELIMINARY REVIEW ON OCTOBER 28, 2008

THIS MAP IS AN INTERNAL TXDOT DOCUMENT. ITS CONTENTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.

DATUM NOTE:

ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD 83. ALL DISTANCES SHOWN ARE SURFACE VALUES.

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
RIGHT OF WAY PROJECT

HIDALGO COUNTY
FM 2220 (WARE ROAD)
R.O.W. CSJ NO. 2094-01-044
CONSTRUCTION CSJ NO. 2094-01-038
PROJECT LIMITS: FROM MILE 5 ROAD TO FM 1924
NET LENGTH OF PROJECT = 10,393 FEET = 2.0 MILES

| | | | |
|---|---|---|---|
| STATE | COUNTY | | |
| TEXAS | HIDALGO | | FM 2220 |
| | CONT. | SECT. | JOB |
| CONST. | 2094 | 01 | 038 |
| R.O.W. | 2094 | 01 | 044 |

BEGIN PROJECT:
CSJ: 2094-01-044
STATION 134+78.05

END PROJECT:
CSJ: 2094-01-044
STATION 238+71.02

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROADS: NONE

GRAPHIC SCALE
SCALE IN FEET

HIDALGO COUNTY
PROJECT LOCATION

VICINITY MAP
SCALE: N.T.S.

RECOMMENDED FOR ACQUISITION OF RIGHT OF WAY:

R.O.W. ADMINISTRATOR DATE

RECOMMENDED FOR ACQUISITION OF RIGHT OF WAY:

DESIGN ENGINEER DATE

FINAL APPROVAL:

DISTRICT ENGINEER DATE

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

# ATTACHMENT C
# Standard Contractual Agreement
# Local Government Performs Work
# EDC Adjustment

| Description | Total Estimated Cost | State Participation | | | Local Participation | | |
|---|---|---|---|---|---|---|---|
| | | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. |
| Right of Way Acquisition | $1,145,000 | 90% | 98.3% | $1,125,535 | 10% | 1.7% | $19,465 |
| Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| Joint Bid Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| TOTAL | $1,145,000 | 90% | 98.3% | $1,125,535 | 10% | 1.7% | $19,465 |

Local Government requested and has been granted an Economically Disadvantaged County Adjustment from the Texas Transportation Commission on **October 25, 2012** by virtue of attached Minute Order No. **113345**, and approved a **83%** percent adjustment to the required **10%** percent local participation for this project. Also attached are completed Affidavit and EDC Program Information Sheet.

This is an estimate. The final amount of Local Government participation will be based on actual costs.

Texas Department of Transportation
PO BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

July 18, 2013

The Honorable Ramon Garcia
County Judge, Hidalgo County
P.O. Box 1356
Edinburg, Texas 78540

**RE: Approved Economically Disadvantaged County (EDC) Program Application**
**FM 2220 from Mile 5 to FM 1924**
**CSJ: 2094-01-038**

Dear Judge Garcia:

Your attached application for an Economically Disadvantaged County (EDC) Program adjustment to the required local participation for the referenced project has been approved. The adjustment is detailed below. This adjusted local participation percentage will be reflected in the Right of Way Agreement.

| Project Component | Usual Local Participation | Adjustment Percentage | Adjusted Local Participation |
|---|---|---|---|
| Right of Way | 10% | 83% | 1.7% |

Should you have any questions regarding this reduction please contact Homero Bazan, Jr., P.E., our Director of Transportation Planning and Development, or myself at (956)702-6100. As always, we look forward to working with you toward the implementation of this project.

Sincerely,

Mario R. Jorge, P.E.
Pharr District Engineer

Attachments

cc: Homer Bazan, Jr., P.E., Director of Transportation Planning and Development
Valente Olivarez, P.E, Pharr Area Engineer
Atidio Garza, P.E., Project Manager
Project File

## FY 2013 ECONOMICALLY DISADVANTAGED COUNTIES PROGRAM
## INFORMATION SHEET

**COUNTY** Hidalgo **APPLICANT** Hidalgo County

**District Contact Information**

**Name:** Maricela Salinas **Telephone:** 956.702.6352

If the project is an **"OFF-SYSTEM"** project, is the project in the Unified Transportation Program (UTP) and have a local funding agreement in place, or in a District Bank Balance Program?

**(Circle as appropriate)** YES or NO

If the applicant is a **CITY** within an eligible county, please answer the two following questions:

# 1 Economic Development Sales Tax? **(Circle as appropriate)** YES or NO

# 2 Population ( **2010** Census)? _____

**PROJECT INFORMATION**

| | |
|---|---|
| UTP PRIORITY STATUS: | CON |
| CSJ: | 2094-01-038 |
| ESTIMATED LETTING DATE | Nov. 2014 |

On-System? ( Circle as appropriate) YES or NO

**LOCATION AND LIMITS - Give highway number with limits from and to**

FM 2220 from Mile 5 to FM 1924

**PROJECT SCOPE- Give type of work**

Widen to 4 Lane

**ADJUSTMENT RATIONAL- Give reason why the adjustment is needed**

Hidalgo County is marked with high unemployment & proverty rates, the highest in the state of Texas. Meeting the basic needs of the County along with addressing the infrastructure demands place a heavy burden on the County budget. We therefore are requesting a reduction in the required match for this project.

**ANTICIPATED PROJECT COST BREAKDOWN OF ELIGIBLE COMPONENTS**

Total Adjustment - 83

| 1. Project Component | 2. Est. Total Cost ($) | 3. Local Participation (%) | | 4. Est. Required Local Match ($) | 5. Local Participation After Adjustment ($) |
|---|---|---|---|---|---|
| Right of Way | $1,145,000 | 10% | | $114,500 | $19,465 |
| | | | | $0 | $0 |
| | | | | $0 | $0 |
| | | | | $0 | $0 |
| TOTAL | $1,145,000 | | | $114,500 | $19,465 |

Approved by _____ Date 7/29/13

Texas Department of Transportation

# AFFIDAVIT

The State of Texas, County of Hidalgo

Before me, Monica Badillo, a notary public in and for the State of Texas, on this day personally appeared Ramon Garcia, who being by me duly sworn, upon oath says:

I, Ramon Garcia, representing the city / county of Hidalgo, having been duly elected on 1-1-11 and having served continuously since that time, certify in my official capacity that, to the best of my knowledge, the information contained in this application is true and correct.

Ramon Garcia — Signature

7/9/13 — Date

Subscribed and sworn to before me, by the said Ramon Garcia, this 9th day of July, 2013, to certify which witness my hand and seal of office.

My commission expires April 21, 2015.

MONICA BADILLO NOTARY PUBLIC STATE OF TEXAS 04-21-2015

Monica Badillo
Official Signature

Monica Badillo
Printed or stamped name of Notary

FY 2013

APPROVED BY COMMISSIONERS' COURT ON: 7/9/13

EDCP

**TEXAS TRANSPORTATION COMMISSION**

VARIOUS Counties

VARIOUS Districts

**MINUTE ORDER**



Transportation Code, §222.053(a), defines an "economically disadvantaged county" as a county that has, in comparison to other counties in the state: (1) below average per capita taxable property value; (2) below average per capita income; and (3) above average unemployment.

Transportation Code, §222.053(c), directs the Texas Transportation Commission (commission), when evaluating a proposal for a highway project in a political subdivision that consists of all or a portion of an economically disadvantaged county, to adjust the minimum local matching funds requirement after evaluating the political subdivision's effort and ability to meet the requirement.

Transportation Code, §222.053(f), requires the commission to certify a county as economically disadvantaged on an annual basis as soon as possible after the Comptroller of Public Accounts (comptroller) provides reports on the economic indicators listed above.

43 TAC §15.55(b)(2) provides that, in determining the adjustment to the local matching funds requirement, and the local government's efforts and ability to meet the requirement, the commission will consider a local government's: (A) population level; (B) bonded indebtedness; (C) tax base; (D) tax rate; (E) extent of in-kind resources available; and (F) economic development sales tax.

The comptroller has provided the data needed to determine the counties eligible for the Economically Disadvantaged Counties Program for 2013. The counties' efforts and ability to provide a local match have been considered using the criteria set forth in 43 TAC §15.55. Exhibit A lists the eligible counties and the respective recommended local match adjustments. Exhibit B establishes additional local match adjustments for cities within these counties participating in the program.

IT IS THEREFORE ORDERED by the commission that the list of counties eligible for the 2013 Economically Disadvantaged Counties Program is certified and the local match adjustment for each county is established, as shown in Exhibit A, as well as additional adjustments for cities participating in the program, as shown in Exhibit B.

Submitted and reviewed by:

Director of Planning

Recommended by:

Executive Director

113345 OCT25 12

Minute Number

Date Passed

# EXHIBIT A

## Economically Disadvantaged Counties
## FY 2013

| FY 2013 Eligible Counties | Adjustment % |
|---|---|
| Anderson County | 70 |
| Angelina County | 61 |
| Atascosa County | 78 |
| Bastrop County | 74 |
| Bee County | 72 |
| Bosque County | 61 |
| Brooks County | 79 |
| Caldwell County | 81 |
| Calhoun County | 62 |
| Cameron County | 70 |
| Camp County | 58 |
| Cass County | 62 |
| Cherokee County | 71 |
| Concho County | 84 |
| Dawson County | 68 |
| Delta County | 92 |
| DeWitt County | 71 |
| Dickens County | 68 |
| Dimmit County | 79 |
| Duval County | 91 |
| El Paso County | 61 |
| Ellis County | 57 |
| Falls County | 86 |
| Fannin County | 74 |
| Frio County | 81 |
| Grayson County | 64 |
| Grimes County | 69 |
| Hall County | 78 |
| Henderson County | 64 |
| Hidalgo County | 83 |
| Hill County | 63 |
| Houston County | 61 |
| Hunt County | 65 |
| Jasper County | 73 |
| Johnson County | 58 |
| Karnes County | 71 |
| Kaufman County | 67 |
| Kinney County | 73 |

| FY 2013 Eligible Counties | Adjustment % |
|---|---|
| La Salle County | 87 |
| Lamar County | 61 |
| Leon County | 59 |
| Liberty County | 66 |
| Madison County | 76 |
| Marion County | 66 |
| Matagorda County | 51 |
| Maverick County | 71 |
| Milam County | 71 |
| Mitchell County | 67 |
| Morris County | 50 |
| Navarro County | 71 |
| Newton County | 78 |
| Palo Pinto County | 53 |
| Presidio County | 80 |
| Rains County | 73 |
| Red River County | 78 |
| Reeves County | 68 |
| Runnels County | 70 |
| Sabine County | 61 |
| San Augustine County | 73 |
| San Jacinto County | 72 |
| Schleicher County | 83 |
| Starr County | 88 |
| Titus County | 60 |
| Trinity County | 77 |
| Tyler County | 74 |
| Upshur County | 61 |
| Uvalde County | 78 |
| Val Verde County | 65 |
| Waller County | 77 |
| Webb County | 69 |
| Wharton County | 65 |
| Wichita County | 64 |
| Willacy County | 81 |
| Wood County | 67 |
| Zavala County | 89 |

Cities within an Economically Disadvantaged County may receive higher percentage adjustments beyond their respective county's adjustment under two conditions: if they have a local economic development sales tax and their population is less than 5000. An adjustment can not exceed 95 percent or be less than 15 percent.

# EXHIBIT B

## Additional Adjustments for Cities Within an Economically Disadvantaged County FY 2013

Every eligible county receives an adjustment to its local match requirement ranging from 15 (minimum) to 95 (maximum) percent. A city within an economically disadvantaged county receives an adjustment equal to the adjustment for the county in which it is located, with the possibility of up to 10 additional percentage points based on its population and the existence of an economic development sales tax.

**The two following tables depict the additional percentage points that cities may be granted.**

***Economic Development Sales Tax:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| YES | *5%* |
| NO | *0%* |

***Population:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| x < 1,000 | 5% |
| 1,000 < x < 2,000 | 4% |
| 2,000 < x < 3,000 | 3% |
| 3,000 < x < 4,000 | 2% |
| 4,000 < x < 5,000 | 1% |
| x > 5,000 | 0% |

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**STATE OF TEXAS** §

**COUNTY OF TRAVIS** §

## AGREEMENT FOR RIGHT OF WAY PROCUREMENT

**THIS AGREEMENT** is made by and between the State of Texas, acting through the Texas Department of Transportation, called the "State", and **Hidalgo County**, Texas, acting through its duly authorized officials, called the "Local Government."

## WITNESSETH

**WHEREAS**, Texas Transportation Code §§ 201.103 and 222.052 establish that the State shall design, construct, and operate a system of highways in cooperation with local governments; and

**WHEREAS**, Texas Transportation Code § 201.209 authorizes the State and a Local Government to enter into agreements in accordance with Texas Government Code, Chapter 791; and

**WHEREAS**, the State has deemed it necessary to make certain highway improvements on Highway No. **FM 2220** from **Mile 5 Road** to **FM 1924**, and this section of highway improvements will necessitate the acquisition of certain right of way and the relocating and adjusting of utilities, called the "Project"; and

**WHEREAS**, 43 Texas Administrative Code §15.55 defines the Local Government's cost participation in acquiring the right of way and relocating or adjusting eligible utilities for the proper improvement of the State Highway System; and

**WHEREAS**, the Governing Body of the Local Government has approved entering into this agreement by resolution or ordinance dated _____, 2013, which is attached to and made a part of this agreement as Attachment A. A map showing the Project location appears in Attachment B, which is attached to and made a part of this agreement.

**NOW THEREFORE,** the State and the Local Government do agree as follows:

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

## AGREEMENT

1. **Agreement Period**
   This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed. This agreement shall remain in effect until the Project is completed or unless terminated as provided below.

2. **Termination**
   This agreement shall remain in effect until the project is completed and accepted by all parties, unless:
   **A.** The agreement is terminated in writing with the mutual consent of the parties;
   **B.** The agreement is terminated by one party because of a breach, in which case any cost incurred because of the breach shall be paid by the breaching party; or
   **C.** The Project is inactive for thirty-six (36) months or longer and no expenditures have been charged against federal funds, in which case the State may in its discretion terminate this agreement.

3. **General**
   **A.** The Local Government agrees to proceed with acquisition of right of way and the State agrees to reimburse the Local Government for its share of the cost of the right of way, providing the acquisition and reimbursement are accomplished according to the provisions outlined in this agreement.
   **B.** The State and the Local Government agree that acquisition of this right of way shall be in accordance with the *Texas Department of Transportation Right of Way Manual* and all applicable federal and state laws governing the acquisition of real property.
   **C.** It is understood that the terms of this agreement shall apply to new right of way, authorized and requested by the State, which is needed and not yet dedicated, in use, or previously acquired in the name of the State or Local Government for highway, street, or road purposes. This agreement shall also apply, with regard to any existing right of way, to outstanding property interests not previously acquired and to eligible utility adjustments not previously made, as authorized and requested by the State.
   **D.** It is further understood that if unusual circumstances develop in the right of way acquisition and they are not clearly covered by the terms of this agreement, those unusual circumstances or problems will be resolved by mutual agreement between the State and the Local Government.

4. **Local Project Sources and Uses of Funds**
   **A.** The total estimated cost of the Project is shown in Attachment C, Project Budget Estimate, which is attached to and made a part of this agreement. The expected cash contributions from the Federal or State government, the Local Governments, or other parties are shown in Attachment C. The State will pay for only those project costs that have been approved by the Texas Transportation Commission. If Federal funding is

included, the State and the Federal Government will not reimburse the Local Government for any work performed before the federal spending authority is formally obligated to the Project by the Federal Highway Administration. After federal funds have been obligated, the State will send to the Local Government a copy of the formal documentation showing the obligation of funds including federal award information. The Local Government is responsible for 100% of the cost of any work performed under its direction or control before the federal spending authority is formally obligated.

**B.** If the Local Government will perform any work under this contract for which reimbursement will be provided by or through the State, the Local Government must complete training before federal spending authority is obligated. Training is complete when at least one individual who is working actively and directly on the Project successfully completes and receives a certificate for the course entitled *Local Government Project Procedures Qualification for the Texas Department of Transportation*. The Local Government shall provide the certificate of qualification to the State. The individual who receives the training certificate may be an employee of the Local Government or an employee of a firm that has been contracted by the Local Government to perform oversight of the Project. The State in its discretion may deny reimbursement if the Local Government has not designated a qualified individual to oversee the Project.

**C.** The Project cost estimate in Attachment C shows how necessary resources for completing the Project will be provided by major cost categories. These categories may include but are not limited to: (1) costs of real property and (2) costs of utility work.

**D.** The State will be responsible for securing the Federal and State share of the funding required for the development of the local Project. If the Local Government is due funds for expenses incurred, these funds will be reimbursed to the Local Government on a cost basis.

**E.** The Local Government will be responsible for all non-federal or non-state participation costs associated with the Project, including any overruns in excess of the approved local project budget unless otherwise provided for in this agreement or approved otherwise in an amendment to this agreement.

**F.** In the event any existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive, including, but not limited to, outdoor advertising or storm water drainage facility requirements, is more restrictive than State or federal regulations, or any other locally proposed change, including, but not limited to, plats or re-plats, results in any increased costs to the State, then the Local Government will pay one hundred percent (100%) of all those increased costs, even if the applicable county qualifies as an Economically Disadvantaged County (EDC). The amount of the increased costs associated with the existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive will be determined by the State at its sole discretion.

**G.** If the Local government is an EDC and if the State has approved adjustments to the standard financing arrangement, this agreement reflects those adjustments.

H. Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

I. The Local Government is authorized to submit requests for reimbursement by submitting the original of an itemized invoice in a form and containing all items required by the State no more frequently than monthly, and no later than ninety (90) days after costs are incurred. If the Local Government submits invoices more than ninety (90) days after the costs are incurred, and if federal funding is reduced as a result, the State shall have no responsibility to reimburse the Local Government for those costs.

**5. Location Surveys and Preparation of Right of Way Data**

The State, without cost to the Local Government, will perform the necessary preliminary engineering and title investigation in order to supply to the Local Government the data and instruments necessary to obtain acceptable title to the desired right of way.

**6. Determination of Right of Way Values**

The Local Government agrees to make a determination of property values for each right of way parcel by methods acceptable to the State and to submit to the State a tabulation of those values, signed by the appropriate Local Government representative. The tabulation shall list the parcel numbers, ownership, acreage, and recommended compensation. Compensation shall be shown in the component parts of land taken, itemization of improvements taken, damages (if any), and the amounts by which the total compensation will be reduced if the owner retains improvements. This tabulation shall be accompanied by an explanation to support the determined values, together with a copy of information or reports used in arriving at all determined values. This work will be performed by the Local Government at its expense without cost participation by the State. The State will review the data submitted and may base its reimbursement on the values that are determined by this review. The State, however, reserves the right to perform at its own expense any additional investigation, including supplemental appraisal work by State employees or by employment of fee appraisers, deemed necessary for determination of values to constitute the basis for State reimbursement. The parties may waive the requirement that the Local Government submit to the State property value determinations for any part of the required right of way by a writing signed by both parties. In instances of a waiver, the State, in its discretion, will make a determination of values to constitute the basis for State reimbursement.

**7. Negotiations**

The State will notify the Local Government as soon as possible as to the State's determination of value. Negotiation and settlement with the property owner will be the responsibility of the Local Government without participation by the State; however, the Local Government will notify the State immediately prior to closing the transaction so that a current title investigation may be made to determine if there has been any change in the title. The Local Government will deliver properly executed instruments of conveyance that,

together with any curative instruments found to be necessary as a result of the State's title investigation, will properly vest good and indefeasible title in the State for each right of way parcel involved. The Local Government will also deliver to the State an owner's policy of title insurance for each parcel, except as otherwise specifically approved by the State. Upon payment to the property owner of the agreed purchase price, the Local Government is authorized and directed to secure for the State possession of each parcel in accordance with all applicable Federal and State laws governing relocation assistance, notices to vacate, and forcible detainer. The costs incidental to negotiation, recording the right of way instruments, and securing possession of the parcels will be the responsibility of the Local Government. The cost of title insurance, closing services, and all costs of relocation assistance as authorized by applicable Federal and State laws will be the responsibility of the State.

**8. Administrative Settlements**

After the offer has been delivered to the property owner, and prior to the Special Commissioners' Hearing, the property owner may deliver one written counteroffer ("Administrative Settlement Proposal") to the Local Government. The Local Government will evaluate the Administrative Settlement Proposal and make a recommendation of approval or disapproval to the State. The State will consider the Administrative Settlement Proposal and the Local Government's recommendation and make a final determination of approval or disapproval in accordance with current State procedures. The State's approval of the Administrative Settlement Proposal is only for purposes of closing the purchase of the property prior to the Special Commissioners' Hearing. If a closing of the purchase does not occur prior to the hearing, the State's approval is automatically, without further action, withdrawn, and the State will participate only in the original approved value. In the event the State does not approve the Administrative Settlement Proposal, and the Local Government elects to purchase the property at a value greater than the original approved value, the State's participation in the purchase price will apply only to the original approved value, and the Local Government will pay one hundred percent (100%) of the costs that exceed the original approved value, even if the applicable county qualifies as an EDC.

**9. Condemnation**

Condemnation proceedings will be initiated at a time selected by the Local Government and will be the Local Government's responsibility at its own expense except as follows. The Local Government will obtain from the State without cost current title information and engineering data at the time condemnation is to be initiated. Except as set forth elsewhere in this agreement, the Local Government will concurrently file condemnation proceedings and a notice of lis pendens for each case in the name of the State, and in each case the judgment of the court will decree title and possession to the property condemned to the State. The Local Government may, as set forth in Article 11 (Excess Takings) and where it is determined to be necessary, enter condemnation proceedings in its own name. Property acquired in the Local Government's name for the State must comply with requirements set

forth in the engineering data and title investigation previously furnished to the Local Government by the State when the Local Government conveys the property to the State.

10. **Court Costs, Costs of Special Commissioners' Hearings and Appraisal Expense**
Court costs and costs of Special Commissioners' Hearings assessed against the State or Local Government in condemnation proceedings conducted on behalf of the State and fees incident to those hearings will be paid by the Local Government. Those costs and fees, with the exception of recording fees, will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under the established reimbursement procedure, provided that they are eligible for payment by the State under existing law. Where the Local Government uses the State's appraisers employed on a fee basis in Special Commissioners' Hearings or subsequent appeals, the cost of the appraiser for updating the report, preparing new reports, preparing for court testimony, and appearing in court to testify in support of the appraisal will be paid direct by the Local Government, but will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under established procedure provided prior approval for the appraiser has been obtained from the State. The fee paid to the appraiser by the Local Government shall be in accordance with the fee schedule set forth in the appraiser's contract for appraisal services with the State.

11. **Excess Takings**
In the event the Local Government desires to acquire land in excess of that requested by the State for right of way purposes, the State's cost participation will be limited to the property needed for its purposes. If the Local Government elects to acquire the entire property, including the excess taking, by a single instrument of conveyance or in one eminent domain proceeding, the property involved will be acquired in the name of the Local Government and that portion requested by the State for right of way will be separately conveyed to the State by the Local Government. When the property is acquired by negotiation, the State's participation will be based on the State's approved value of that part of the property requested for right of way purposes, provided that the approved value does not exceed the actual payment made by the Local Government. When the property is acquired by condemnation, the State's participation will be in the proportionate part of the final judgment amount computed on the basis of the relationship of the State's approved value to the State's predetermined value for the whole property.

12. **Improvements**
    **A.** Property owners will be afforded an opportunity in the negotiations to retain any or all of their improvements in the right of way taking. In anticipation of the owner's desiring to retain improvements, the State's approved value will include the amounts by which the upper limit of State participation will be reduced for the retention. It is further agreed that the upper limit for the State's participation in the Local Government's cost for an improved parcel will be reduced as shown in the State's approved value where the owner retains an improvement that is to be moved by either the Local Government or

the owner. If improvements are, in whole or part, a part of the right of way taking and are not retained by the owner, title is to be secured in the name of the State.

**B.** The State will participate in the acquisition of a structure severed by the right of way line if the part of the house, building, or similar structure that lies outside the right of way cannot be reconstructed adequately or there is nothing but salvage left, provided that the State's value is established on this basis and provided that title to the entire structure is taken in the name of the State. The State shall dispose of all improvements acquired. The net revenue derived by the State from the disposition of any improvements sold will be credited to the cost of the right of way procured and shared with the Local Government.

**13. Relocation of Utilities**

If the required right of way encroaches on an existing utility located on its own right of way and the proposed highway construction requires the adjustment, removal, or relocation of the utility facility, the State will establish the necessity for the utility work. State participation in the cost of making the necessary change, less any resulting increase in the value to the utility and less any salvage value obtainable, may be obtained by either the "actual cost" or "lump sum" procedures. Reimbursement under "actual cost" will be made subsequent to the Local Government's certification that the work has been completed and will be made in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the eligible items of cost as paid to the utility owner after the completion of an audit. The "lump sum" procedure requires that the State establish the eligibility of the utility work and enter into a three-party agreement with the owners of the utility facilities and the Local Government. This agreement must set forth the exact lump sum amount of reimbursement. The utility will be reimbursed by the Local Government after proper certification by the utility that the work has been done, and the reimbursement will be based on the prior lump sum agreement. The State will reimburse the Local Government in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the firm commitment as paid to the utility owner. Reimbursement is subject to the provision that the individual lump sum agreement approved value shall not exceed $20,000, except as specifically approved by the State. In those cases where a single operation is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based upon the circumstances involved. The firm commitment to the utility will be an appropriate item of right of way. The adjustment, removal, or relocation of any utility line on publicly owned right of way by sufferance or permit will not be eligible for State reimbursement. The term "utility" under this agreement shall include publicly, privately, and cooperatively owned utilities.

**14. Fencing Requirements**

**A.** The Local Government may handle fencing through one of the following methods.

1. The Local Government may pay the property owner for existing right of way fences based on the value those fences contribute to the part taken and damages for an unfenced condition resulting from the right of way taking, in which case the estimated

value of those right of way fences and damages will be included in the recommended value and the approved value; or

2. The Local Government may perform the fencing on the property owner's remaining property.

**B.** When the Local Government performs right of way fencing as a part of the total right of way consideration, neither the value of existing right of way fences nor damages for an unfenced condition will be included in the recommended value or the approved value. State participation in the Local Government's cost of constructing right of way fencing on the property owner's remainder may be based on either the actual cost of the fencing or on a predetermined lump sum amount. The State will be given credit for any salvaged fencing material and will not participate in any overhead costs of the Local Government.

**C.** If State participation is to be requested on the lump sum basis, the State and the Local Government will reach an agreement prior to the actual accomplishment of the work as to the necessity, eligibility, and a firm commitment as to the cost of the entire fencing work to be performed. This is subject to the provision that the lump sum approved cost shall not exceed $20,000, except as specifically approved by the State. In the event the cost of the fencing is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based on the circumstances involved.

**15. Basis for Reimbursement Calculation**

**A.** The State will reimburse the Local Government for right of way acquired after the date of this agreement in an amount not to exceed ninety percent (90%), or the applicable EDC-adjusted percent, of the cost of the right of way acquired in accordance with the terms and provisions of this agreement. The State's reimbursement will be in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the State's predetermined value of each parcel, or the net cost of each parcel, whichever is less. All requests by the Local Government for reimbursement shall comply with the then current reimbursement submission requirements set forth in the *Texas Department of Transportation Right of Way Manual.*

**B.** If condemnation is necessary and title is taken under Article 9 (Condemnation), the participation by the State shall be based on the final judgment, conditioned on the State having been notified in writing prior to the filing of the suit and on prompt notice being given as to all action taken under the suit. The State shall have the right to become a party to the suit at any time for all purposes, including the right of appeal at any stage of the proceedings. All other items of cost shall be borne by the State and the Local Government as provided in other sections of this agreement.

**C.** If a lump sum fencing or utility adjustment agreement has been executed, the State will reimburse the Local Government in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the predetermined lump sum cost of the right of way fencing or utility adjustment.

**D.** If the Local Government prefers not to execute a lump sum agreement for either fencing or utility adjustments, the State will reimburse on the actual cost of that fencing or those adjustments. The Local Government's request for reimbursement will be supported by a breakdown of the labor, materials, and equipment used.

**16. Amendments**

Amendments to this agreement due to changes in the character of the work, terms of the agreement, or responsibilities of the parties relating to the Project may be enacted through a mutually agreed upon, written supplemental agreement.

**17. Notices**

All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, to the following addresses:

| **Local Government:** | **State:** |
|---|---|
| Honorable Ramon Garcia | Director of Right of Way Division |
| Judge, Hidalgo County | Texas Department of Transportation |
| P.O. Box 1356 | 125 E. 11th Street |
| Edinburg, TX 78540 | Austin, Texas 78701 |

All notices shall be deemed given on the date delivered or deposited in the mail, unless otherwise provided by this agreement. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that notices shall be delivered personally or by certified U.S. mail and that request shall be honored and carried out by the other party.

**18. Remedies**

This agreement shall not be considered as specifying the exclusive remedy for any agreement default, but all remedies existing at law and in equity may be availed of by either party to this agreement and shall be cumulative.

**19. Legal Construction**

If one or more of the provisions contained in this agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, that invalidity, illegality, or unenforceability shall not affect any other provisions and this agreement shall be construed as if it did not contain the invalid, illegal, or unenforceable provision.

**20. Responsibilities of the Parties**

The State and the Local Government agree that neither party is an agent, servant, or employee of the other party and each party agrees it is responsible for its individual acts and deeds as well as the acts and deeds of its contractors, employees, representatives, and agents.

**21. Compliance with Laws**

The parties shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of this agreement. When required, the Local Government shall furnish the State with satisfactory proof of this compliance.

**22. Sole Agreement**

This agreement constitutes the sole and only agreement between the parties and supersedes any prior understandings or written or oral agreements respecting the subject matter of this agreement.

**23. Ownership of Documents**

Upon completion or termination of this agreement, all documents prepared by the State shall remain the property of the State. All data prepared under this agreement shall be made available to the State without restriction or limitation on their further use. All documents produced or approved or otherwise created by the Local Government shall be transmitted to the State in the form of photocopy reproduction on a monthly basis as required by the State. The originals shall remain the property of the Local Government. At the request of the State, the Local Government shall submit any information required by the State in the format directed by the State.

**24. Inspection of Books and Records**

The Local Government shall maintain all books, papers, accounting records, and other documentation relating to costs incurred under this agreement and shall make those materials available to the State and, if federally funded, the Federal Highway Administration (FHWA) or their duly authorized representatives for review and inspection at its office during the contract period and for four (4) years from the date of completion of work defined under this agreement or until any impending litigation, or claims are resolved. Additionally, the State and FHWA and their duly authorized representatives shall have access to all the governmental records that are directly applicable to this agreement for the purpose of making audits, examinations, excerpts, and transcriptions.

**25. State Auditor**

The state auditor may conduct an audit or investigation of any entity receiving funds from the State directly under this agreement or indirectly through a subcontract under this agreement. Acceptance of funds directly under this agreement or indirectly through a

subcontract under this agreement acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

**26. Procurement and Property Management Standards**
The parties shall adhere to the procurement standards established in Title 49 CFR §18.36 and with the property management standard established in Title 49 CFR §18.32.

**27. Civil Rights Compliance**
The parties to this agreement shall comply with the regulations of the U.S. Department of Transportation as they relate to nondiscrimination (49 CFR Part 21 and 23 CFR Part 200), and Executive Order 11246 titled "Equal Employment Opportunity," as amended by Executive Order 11375 and supplemented in the Department of Labor Regulations (41 CFR Part 60).

**28. Applicability of Federal Provisions**
Articles 29 through 34 only apply if Federal funding is used in the acquisition of right of way or the adjustment of utilities.

**29. Office of Management and Budget (OMB) Cost Principles**
In order to be reimbursed with federal funds, the parties shall comply with the Cost Principles established in OMB Circular A-87 that specify that all reimbursed costs are allowable, reasonable, and allocable to the Project.

**30. Disadvantaged Business Enterprise (DBE) Program Requirements**

**A.** The parties shall comply with the DBE Program requirements established in 49 CFR Part 26.

**B.** The Local Government shall adopt, in its totality, the State's federally approved DBE program.

**C.** The Local Government shall set an appropriate DBE goal consistent with the State's DBE guidelines and in consideration of the local market, project size, and nature of the goods or services to be acquired. The Local Government shall have final decision-making authority regarding the DBE goal and shall be responsible for documenting its actions.

**D.** The Local Government shall follow all other parts of the State's DBE program referenced in TxDOT Form 2395, Memorandum of Understanding Regarding the Adoption of the Texas Department of Transportation's Federally -Approved Disadvantaged Business Enterprise by Entity and attachments found at web address http://txdot.gov/business/business_outreach/mou.htm.

**E.** The Local Government shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any U.S. Department of Transportation (DOT)-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The Local Government shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure non-discrimination in award and administration of DOT-assisted contracts. The State's DBE program, as required by 49 CFR Part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the Local Government of its failure to carry out its approved program, the State may impose sanctions as provided for under 49 CFR Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 USC 1001 and the Program Fraud Civil Remedies Act of 1986 (31 USC 3801 et seq.).

**F.** Each contract the Local Government signs with a contractor (and each subcontract the prime contractor signs with a sub-contractor) must include the following assurance: *The contractor, sub-recipient, or sub-contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this agreement, which may result in the termination of this agreement or such other remedy as the recipient deems appropriate.*

**31. Debarment Certification**

The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Local Government certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549 and further certifies that it will not do business with any party that is currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this contract shall require any party to a subcontract or purchase order awarded under this contract to certify its eligibility to receive federal funds and, when requested by the State, to furnish a copy of the certification.

**32. Lobbying Certification**

In executing this agreement, each signatory certifies to the best of that signatory's knowledge and belief, that:

**A.** No federal appropriated funds have been paid or will be paid by or on behalf of the parties to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal

contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

**B.** If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with federal contracts, grants, loans, or cooperative agreements, the signatory for the Local Government shall complete and submit the Federal Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

**C.** The parties shall require that the language of this certification shall be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and all sub-recipients shall certify and disclose accordingly. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Title 31 USC §1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

**33. Federal Funding Accountability and Transparency Act Requirements**

**A.** Any recipient of funds under this agreement agrees to comply with the Federal Funding Accountability and Transparency Act and implementing regulations at 2 CFR Part 170, including Appendix A. This agreement is subject to the following award terms: http://edocket.access.gpo.gov/2010/pdf/2010-22705.pdf and http://edocket.access.gpo.gov/2010/pdf/2010-22706.pdf.

**B.** The Local Government agrees that it shall:

1. Obtain and provide to the State a Central Contracting Registry (CCR) number (Federal Acquisition Regulation, Part 4, Sub-part 4.1100) if this award provides for more than $25,000 in Federal funding. The CCR number may be obtained by visiting the CCR web-site whose address is: https://www.bpn.gov/ccr/default.aspx;
2. Obtain and provide to the State a Data Universal Numbering System (DUNS) number, a unique nine-character number that allows the Federal government to track the distribution of federal money. The DUNS number may be requested free of charge for all businesses and entities required to do so by visiting the Dun & Bradstreet on-line registration website http://fedgov.dnb.com/webform; and
3. Report the total compensation and names of its top five (5) executives to the State if:
   i. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than $25,000,000; and
   ii. The compensation information is not already available through reporting to the U.S. Securities and Exchange Commission.

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**34. Single Audit Report**

**A.** The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in OMB Circular A-133.

**B.** If threshold expenditures of $500,000 or more are met during the Local Government's fiscal year, the Local Government must submit a Single Audit Report and Management Letter (if applicable) to TxDOT's Audit Office, 125 E. 11th Street, Austin, TX 78701 or contact TxDOT's Audit Office at http://www.txdot.gov/contact_us/audit.htm.

**C.** If expenditures are less than $500,000 during the Local Government's fiscal year, the Local Government must submit a statement to TxDOT's Audit Office as follows: "We did not meet the $500,000 expenditure threshold and therefore, are not required to have a single audit performed for FY _____."

**D.** For each year the project remains open for federal funding expenditures, the Local Government will be responsible for filing a report or statement as described above. The required annual filing shall extend throughout the life of the agreement, unless otherwise amended or the project has been formally closed out and no charges have been incurred within the current fiscal year.

**35. Signatory Warranty**

Each signatory warrants that the signatory has necessary authority to execute this agreement on behalf of the entity represented.

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**THIS AGREEMENT IS EXECUTED** by the State and the Local Government in duplicate.

**THE LOCAL GOVERNMENT**

_____
Signature

Honorable Judge Ramon Garcia
Typed or Printed Name

Judge, Hidalgo County
Title

_____
Date

**THE STATE OF TEXAS**

_____
John P. Campbell, P.E.
Director, Right of Way Division
Texas Department of Transportation

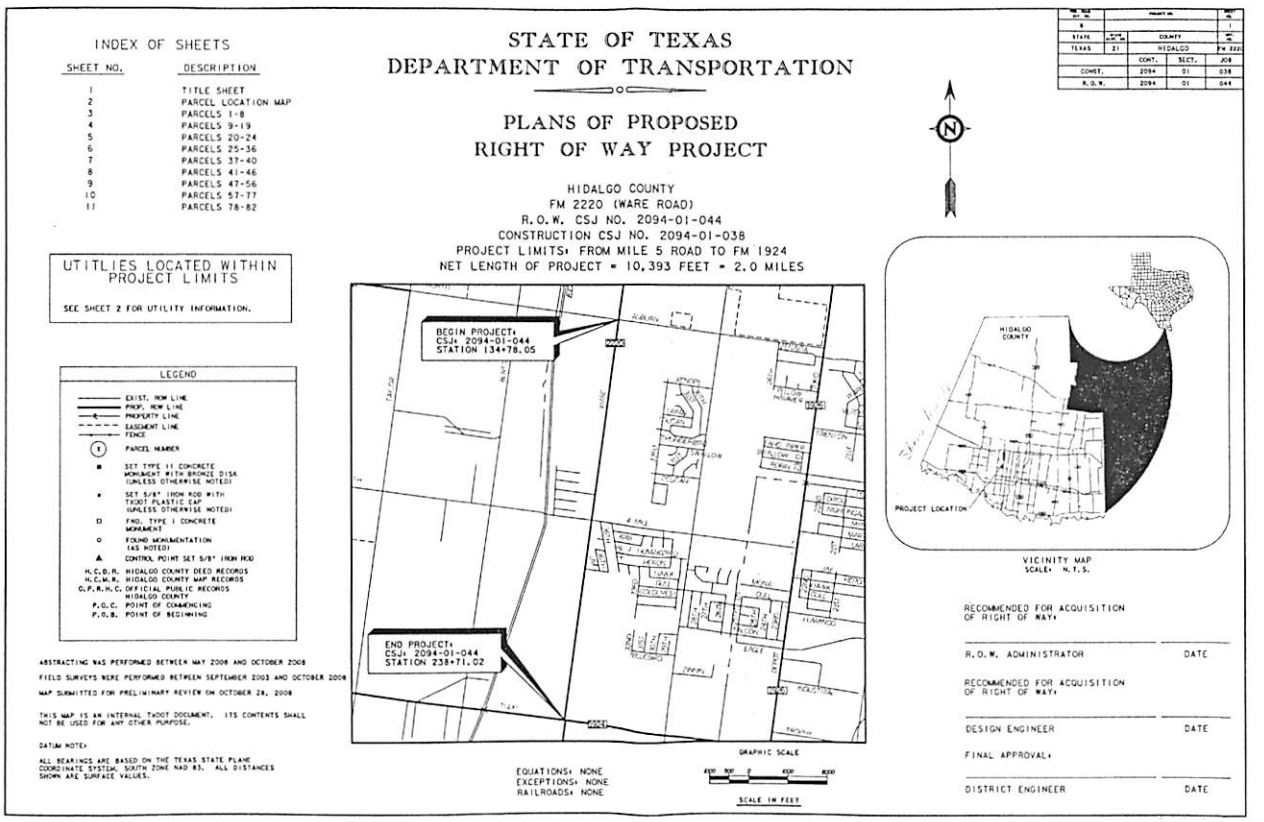
_____
Date

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

# ATTACHMENT A
# RESOLUTION OR ORDINANCE

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

# ATTACHMENT B
# LOCATION MAP SHOWING PROJECT



INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 2 | PARCEL LOCATION MAP |
| 3 | PARCELS 1-8 |
| 4 | PARCELS 9-19 |
| 5 | PARCELS 20-24 |
| 6 | PARCELS 25-36 |
| 7 | PARCELS 37-40 |
| 8 | PARCELS 41-46 |
| 9 | PARCELS 47-56 |
| 10 | PARCELS 57-77 |
| 11 | PARCELS 78-82 |

UTITLIES LOCATED WITHIN PROJECT LIMITS

SEE SHEET 2 FOR UTILITY INFORMATION.

LEGEND

EXIST. ROW LINE
PROP. ROW LINE
PROPERTY LINE
EASEMENT LINE
FENCE
(1) PARCEL NUMBER
SET TYPE II CONCRETE MONUMENT WITH BRONZE DISK (UNLESS OTHERWISE NOTED)
SET 5/8" IRON ROD WITH TXDOT PLASTIC CAP (UNLESS OTHERWISE NOTED)
EXIST. TYPE I CONCRETE MONUMENT
FOUND MONUMENTATION (AS NOTED)
CONTROL POINT SET 5/8" IRON ROD
H.C.D.R. HIDALGO COUNTY DEED RECORDS
H.C.M.R. HIDALGO COUNTY MAP RECORDS
O.P.R.H.C. OFFICIAL PUBLIC RECORDS HIDALGO COUNTY
P.O.C. POINT OF COMMENCING
P.O.B. POINT OF BEGINNING

ABSTRACTING WAS PERFORMED BETWEEN MAY 2008 AND OCTOBER 2008
FIELD SURVEYS WERE PERFORMED BETWEEN SEPTEMBER 2003 AND OCTOBER 2008
MAP SUBMITTED FOR PRELIMINARY REVIEW ON OCTOBER 28, 2008

THIS MAP IS AN INTERNAL TXDOT DOCUMENT. ITS CONTENTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.

DATUM NOTE:
ALL BEARINGS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD 83. ALL DISTANCES SHOWN ARE SURFACE VALUES.

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
RIGHT OF WAY PROJECT

HIDALGO COUNTY
FM 2220 (WARE ROAD)
R.O.W. CSJ NO. 2094-01-044
CONSTRUCTION CSJ NO. 2094-01-038
PROJECT LIMITS: FROM MILE 5 ROAD TO FM 1924
NET LENGTH OF PROJECT = 10,393 FEET = 2.0 MILES

| STATE | COUNTY | |
|---|---|---|
| TEXAS | 21 | HIDALGO |

| | CONT. | SECT. | JOB |
|---|---|---|---|
| CONST. | 2094 | 01 | 038 |
| R.O.W. | 2094 | 01 | 044 |

BEGIN PROJECT:
CSJ: 2094-01-044
STATION 134+78.05

END PROJECT:
CSJ: 2094-01-044
STATION 238+71.02

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROADS: NONE

GRAPHIC SCALE
SCALE IN FEET

HIDALGO COUNTY
PROJECT LOCATION

VICINITY MAP
SCALE: N.T.S.

RECOMMENDED FOR ACQUISITION OF RIGHT OF WAY:

R.O.W. ADMINISTRATOR DATE

RECOMMENDED FOR ACQUISITION OF RIGHT OF WAY:

DESIGN ENGINEER DATE

FINAL APPROVAL:

DISTRICT ENGINEER DATE

County # Hidalgo
District Pharr District 21
ROW CSJ # 2094-01-044
CCSJ # 2094-01-038
Federal Project #
Federal Highway Administration
CFDA # 20.205
Not Research and Development

# ATTACHMENT C
# Standard Contractual Agreement
# Local Government Performs Work
# EDC Adjustment

| Description | Total Estimated Cost | State Participation | | | Local Participation | | |
|---|---|---|---|---|---|---|---|
| | | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. |
| Right of Way Acquisition | $1,145,000 | 90% | 98.3% | $1,125,535 | 10% | 1.7% | $19,465 |
| Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| Joint Bid Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| TOTAL | $1,145,000 | 90% | 98.3% | $1,125,535 | 10% | 1.7% | $19,465 |

Local Government requested and has been granted an Economically Disadvantaged County Adjustment from the Texas Transportation Commission on **October 25, 2012** by virtue of attached Minute Order No. **113345**, and approved a **83%** percent adjustment to the required **10%** percent local participation for this project. Also attached are completed Affidavit and EDC Program Information Sheet.

This is an estimate. The final amount of Local Government participation will be based on actual costs.

Texas Department of Transportation
PO BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

July 18, 2013

The Honorable Ramon Garcia
County Judge, Hidalgo County
P.O. Box 1356
Edinburg, Texas 78540

**RE: Approved Economically Disadvantaged County (EDC) Program Application**
**FM 2220 from Mile 5 to FM 1924**
**CSJ: 2094-01-038**

Dear Judge Garcia:

Your attached application for an Economically Disadvantaged County (EDC) Program adjustment to the required local participation for the referenced project has been approved. The adjustment is detailed below. This adjusted local participation percentage will be reflected in the Right of Way Agreement.

| Project Component | Usual Local Participation | Adjustment Percentage | Adjusted Local Participation |
|---|---|---|---|
| Right of Way | 10% | 83% | 1.7% |

Should you have any questions regarding this reduction please contact Homero Bazan, Jr., P.E., our Director of Transportation Planning and Development, or myself at (956)702-6100. As always, we look forward to working with you toward the implementation of this project.

Sincerely,

Mario R. Jorge, P.E.
Pharr District Engineer

Attachments

cc: Homer Bazan, Jr., P.E., Director of Transportation Planning and Development
Valente Olivarez, P.E, Pharr Area Engineer
Atidio Garza, P.E., Project Manager
Project File

## FY 2013 ECONOMICALLY DISADVANTAGED COUNTIES PROGRAM
## INFORMATION SHEET

**COUNTY** Hidalgo **APPLICANT** Hidalgo County

**District Contact Information**

**Name:** Maricela Salinas **Telephone:** 956.702.6352

If the project is an **"OFF-SYSTEM"** project, is the project in the Unified Transportation Program (UTP) and have a local funding agreement in place, or in a District Bank Balance Program?

**(Circle as appropriate)** YES or NO

If the applicant is a CITY within an eligible county, please answer the two following questions:

# 1 Economic Development Sales Tax? **(Circle as appropriate)** YES or NO

# 2 Population ( 2010 Census)? _____

**PROJECT INFORMATION**

| | |
|---|---|
| UTP PRIORITY STATUS: | CON |
| CSJ: | 2094-01-038 |
| ESTIMATED LETTING DATE | Nov. 2014 |

On-System? ( Circle as appropriate) YES or NO

**LOCATION AND LIMITS - Give highway number with limits from and to**

FM 2220 from Mile 5 to FM 1924

**PROJECT SCOPE- Give type of work**

Widen to 4 Lane

**ADJUSTMENT RATIONAL- Give reason why the adjustment is needed**

Hidalgo County is marked with high unemployment & proverty rates, the highest in the state of Texas. Meeting the basic needs of the County along with addressing the Infrastructure demands place a heavy burden on the County budget. We therefore are requesting a reduction in the required match for this project.

**ANTICIPATED PROJECT COST BREAKDOWN OF ELIGIBLE COMPONENTS**

Total Adjustment - 83

| 1. Project Component | 2. Est. Total Cost ($) | 3. Local Participation (%) | | 4. Est. Required Local Match ($) | 5. Local Participation After Adjustment ($) |
|---|---|---|---|---|---|
| Right of Way | $1,145,000 | 10% | | $114,500 | $19,465 |
| | | | | $0 | $0 |
| | | | | $0 | $0 |
| | | | | $0 | $0 |
| TOTAL | $1,145,000 | | | $114,500 | $19,465 |

Approved by _____ Date 7/29/13

Texas Department of Transportation

# AFFIDAVIT

The State of Texas,
County of Hidalgo

Before me, Monica Badillo, a notary public in and for the State of Texas, on this day personally appeared Ramon Garcia, who being by me duly sworn, upon oath says:

I, Ramon Garcia, representing the city / county of Hidalgo, having been duly elected on 1-1-11 and having served continuously since that time, certify in my official capacity that, to the best of my knowledge, the information contained in this application is true and correct.

Ramon Garcia — Signature

7/9/13 — Date

Subscribed and sworn to before me, by the said Ramon Garcia, this 9th day of July, 2013, to certify which witness my hand and seal of office.

My commission expires April 21, 2015.

MONICA BADILLO NOTARY PUBLIC STATE OF TEXAS EXPIRES 04-21-2015

Monica Badillo
Official Signature

Monica Badillo
Printed or stamped name of Notary

FY 2013

APPROVED BY COMMISSIONERS' COURT ON: 7/9/13

EDCP

**TEXAS TRANSPORTATION COMMISSION**

VARIOUS Counties

VARIOUS Districts

**MINUTE ORDER**



Transportation Code, §222.053(a), defines an "economically disadvantaged county" as a county that has, in comparison to other counties in the state: (1) below average per capita taxable property value; (2) below average per capita income; and (3) above average unemployment.

Transportation Code, §222.053(c), directs the Texas Transportation Commission (commission), when evaluating a proposal for a highway project in a political subdivision that consists of all or a portion of an economically disadvantaged county, to adjust the minimum local matching funds requirement after evaluating the political subdivision's effort and ability to meet the requirement.

Transportation Code, §222.053(f), requires the commission to certify a county as economically disadvantaged on an annual basis as soon as possible after the Comptroller of Public Accounts (comptroller) provides reports on the economic indicators listed above.

43 TAC §15.55(b)(2) provides that, in determining the adjustment to the local matching funds requirement, and the local government's efforts and ability to meet the requirement, the commission will consider a local government's: (A) population level; (B) bonded indebtedness; (C) tax base; (D) tax rate; (E) extent of in-kind resources available; and (F) economic development sales tax.

The comptroller has provided the data needed to determine the counties eligible for the Economically Disadvantaged Counties Program for 2013. The counties' efforts and ability to provide a local match have been considered using the criteria set forth in 43 TAC §15.55. Exhibit A lists the eligible counties and the respective recommended local match adjustments. Exhibit B establishes additional local match adjustments for cities within these counties participating in the program.

IT IS THEREFORE ORDERED by the commission that the list of counties eligible for the 2013 Economically Disadvantaged Counties Program is certified and the local match adjustment for each county is established, as shown in Exhibit A, as well as additional adjustments for cities participating in the program, as shown in Exhibit B.

Submitted and reviewed by:

Director of Planning

Recommended by:

Executive Director

113345 OCT 25 12

Minute Number

Date Passed

# EXHIBIT A

## Economically Disadvantaged Counties
## FY 2013

| FY 2013 Eligible Counties | Adjustment % |
|---|---|
| Anderson County | 70 |
| Angelina County | 61 |
| Atascosa County | 78 |
| Bastrop County | 74 |
| Bee County | 72 |
| Bosque County | 61 |
| Brooks County | 79 |
| Caldwell County | 81 |
| Calhoun County | 62 |
| Cameron County | 70 |
| Camp County | 58 |
| Cass County | 62 |
| Cherokee County | 71 |
| Concho County | 84 |
| Dawson County | 68 |
| Delta County | 92 |
| DeWitt County | 71 |
| Dickens County | 68 |
| Dimmit County | 79 |
| Duval County | 91 |
| El Paso County | 61 |
| Ellis County | 57 |
| Falls County | 86 |
| Fannin County | 74 |
| Frio County | 81 |
| Grayson County | 64 |
| Grimes County | 69 |
| Hall County | 78 |
| Henderson County | 64 |
| Hidalgo County | 83 |
| Hill County | 63 |
| Houston County | 61 |
| Hunt County | 65 |
| Jasper County | 73 |
| Johnson County | 58 |
| Karnes County | 71 |
| Kaufman County | 67 |
| Kinney County | 73 |

| FY 2013 Eligible Counties | Adjustment % |
|---|---|
| La Salle County | 87 |
| Lamar County | 61 |
| Leon County | 59 |
| Liberty County | 66 |
| Madison County | 76 |
| Marion County | 66 |
| Matagorda County | 51 |
| Maverick County | 71 |
| Milam County | 71 |
| Mitchell County | 67 |
| Morris County | 50 |
| Navarro County | 71 |
| Newton County | 78 |
| Palo Pinto County | 53 |
| Presidio County | 80 |
| Rains County | 73 |
| Red River County | 78 |
| Reeves County | 68 |
| Runnels County | 70 |
| Sabine County | 61 |
| San Augustine County | 73 |
| San Jacinto County | 72 |
| Schleicher County | 83 |
| Starr County | 88 |
| Titus County | 60 |
| Trinity County | 77 |
| Tyler County | 74 |
| Upshur County | 61 |
| Uvalde County | 78 |
| Val Verde County | 65 |
| Waller County | 77 |
| Webb County | 69 |
| Wharton County | 65 |
| Wichita County | 64 |
| Willacy County | 81 |
| Wood County | 67 |
| Zavala County | 89 |

Cities within an Economically Disadvantaged County may receive higher percentage adjustments beyond their respective county's adjustment under two conditions: if they have a local economic development sales tax and their population is less than 5000. An adjustment can not exceed 95 percent or be less than 15 percent.

# EXHIBIT B

## Additional Adjustments for Cities Within an Economically Disadvantaged County FY 2013

Every eligible county receives an adjustment to its local match requirement ranging from 15 (minimum) to 95 (maximum) percent. A city within an economically disadvantaged county receives an adjustment equal to the adjustment for the county in which it is located, with the possibility of up to 10 additional percentage points based on its population and the existence of an economic development sales tax.

**The two following tables depict the additional percentage points that cities may be granted.**

***Economic Development Sales Tax:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| YES | *5%* |
| NO | *0%* |

***Population:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| x < 1,000 | 5% |
| 1,000 < x < 2,000 | 4% |
| 2,000 < x < 3,000 | 3% |
| 3,000 < x < 4,000 | 2% |
| 4,000 < x < 5,000 | 1% |
| x > 5,000 | 0% |

# Texas Department of Transportation

P. O. BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

February 3, 2014

The Honorable Ramon Garcia
Hidalgo County Judge
PO Box 1356
Edinburg, TX 78540

HIDALGO COUNTY
BUDGET OFFICE
2014 FEB 12 PM 3 22

REF: Executed Agreement for Right of Way Procurement

County: Hidalgo
Project: FM 1925
Limits: From: Kenyon Road to FM 907
ROW CSJ: 1803-02-033

Honorable Judge Garcia,

Enclosed find three (3) originals of an Agreement for Right of Way Procurement-Local Government for the above referenced right of way acquisition project.

The agreement has been modified to reflect the County's request and award of an Economically Disadvantage County (EDC) Program adjustment. The Texas Transportation Commission granted the adjustment via Minute Order No. 113723. Enclosed find a separate letter from Toribio Garza, Jr., P.E., Pharr District Engineer to your attention, which awards the County an eighty nine percent (89%) adjustment to the required 10% cost participation thereby resulting in a Local Government cost participation of one point one percent (1.1%) and State cost participation of ninety eight point nine percent (98.9%) for this project.

We are herein respectfully requesting that agenda action items be presented at the next most available County Commissioners meeting to consider the execution of the enclosed agreement. Once presented, approved and executed, please forward the three original executed agreements and a copy of the resolution or ordinance approving the project to the Texas Department of Transportation. Your cost participation in the amount of Eight thousand Six Hundred and Ninety Dollars ($ 8,690.00) is calculated by applying the 89% EDC adjustment award to the 10% Hidalgo County cost participation requirement resulting in a cost participation breakdown of 98.9 % State and 1.1% Hidalgo County. The 1.1% is then applied to the estimated cost of right of way acquisition of Seven Hundred and Ninety Thousand Dollars ($ 790,000.00).

Upon receipt of the three (3) fully executed agreements and a copy of the resolution or ordinance approving the project, we will forward the executed agreements to our Right of Way Division Director in Austin for his review, approval and execution. We will also request that the ROW acquisition project be released.

Once we obtain the official release from the ROW Division, we will issue a written Notice of Project Release to advise Hidalgo County that the county may commence with the acquisition of the needed parcels for this project.

Your continued cooperative efforts towards the improvement of the Highway System in the State of Texas are most certainly appreciated.

Sincerely,

Nelda R. Eureste

Nelda R. Eureste
South ROW
Project Delivery Manager

Cc: Joseph Palacios, Hidalgo County Commissioner Precinct No. 4
Homer Bazan, P.E., Director of Transportation Planning and Development
Margil Maldonado, P.E. Project Manager
Jesus Esquierdo, LPA Lead Worker South ROW P/D

Enclosures: Three (3)

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205_____
Not Research and Development

**STATE OF TEXAS** §

**COUNTY OF TRAVIS** §

## AGREEMENT FOR RIGHT OF WAY PROCUREMENT

**THIS AGREEMENT** is made by and between the State of Texas, acting through the Texas Department of Transportation, called the "State", and **Hidalgo County**, Texas, acting through its duly authorized officials, called the "Local Government."

## WITNESSETH

**WHEREAS**, Texas Transportation Code §§ 201.103 and 222.052 establish that the State shall design, construct, and operate a system of highways in cooperation with local governments; and

**WHEREAS**, Texas Transportation Code § 201.209 authorizes the State and a Local Government to enter into agreements in accordance with Texas Government Code, Chapter 791; and

**WHEREAS**, the State has deemed it necessary to make certain highway improvements on Highway No. **1925** from **Kenyon Road** to **FM 907**, and this section of highway improvements will necessitate the acquisition of certain right of way and the relocating and adjusting of utilities, called the "Project"; and

**WHEREAS**, 43 Texas Administrative Code §15.55 defines the Local Government's cost participation in acquiring the right of way and relocating or adjusting eligible utilities for the proper improvement of the State Highway System; and

**WHEREAS**, the Governing Body of the Local Government has approved entering into this agreement by resolution or ordinance dated _____, 20__, which is attached to and made a part of this agreement as Attachment A. A map showing the Project location appears in Attachment B, which is attached to and made a part of this agreement.

**NOW THEREFORE,** the State and the Local Government do agree as follows:

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205_____
Not Research and Development

## AGREEMENT

1. **Agreement Period**
   This agreement becomes effective when signed by the last party whose signing makes the agreement fully executed. This agreement shall remain in effect until the Project is completed or unless terminated as provided below.

2. **Termination**
   This agreement shall remain in effect until the project is completed and accepted by all parties, unless:
   **A.** The agreement is terminated in writing with the mutual consent of the parties;
   **B.** The agreement is terminated by one party because of a breach, in which case any cost incurred because of the breach shall be paid by the breaching party; or
   **C.** The Project is inactive for thirty-six (36) months or longer and no expenditures have been charged against federal funds, in which case the State may in its discretion terminate this agreement.

3. **General**
   **A.** The Local Government agrees to proceed with acquisition of right of way and the State agrees to reimburse the Local Government for its share of the cost of the right of way, providing the acquisition and reimbursement are accomplished according to the provisions outlined in this agreement.
   **B.** The State and the Local Government agree that acquisition of this right of way shall be in accordance with the *Texas Department of Transportation Right of Way Manual* and all applicable federal and state laws governing the acquisition of real property.
   **C.** It is understood that the terms of this agreement shall apply to new right of way, authorized and requested by the State, which is needed and not yet dedicated, in use, or previously acquired in the name of the State or Local Government for highway, street, or road purposes. This agreement shall also apply, with regard to any existing right of way, to outstanding property interests not previously acquired and to eligible utility adjustments not previously made, as authorized and requested by the State.
   **D.** It is further understood that if unusual circumstances develop in the right of way acquisition and they are not clearly covered by the terms of this agreement, those unusual circumstances or problems will be resolved by mutual agreement between the State and the Local Government.

4. **Local Project Sources and Uses of Funds**
   **A.** The total estimated cost of the Project is shown in Attachment C, Project Budget Estimate, which is attached to and made a part of this agreement. The expected cash contributions from the Federal or State government, the Local Governments, or other parties are shown in Attachment C. The State will pay for only those project costs that have been approved by the Texas Transportation Commission. If Federal funding is

included, the State and the Federal Government will not reimburse the Local Government for any work performed before the federal spending authority is formally obligated to the Project by the Federal Highway Administration. After federal funds have been obligated, the State will send to the Local Government a copy of the formal documentation showing the obligation of funds including federal award information. The Local Government is responsible for 100% of the cost of any work performed under its direction or control before the federal spending authority is formally obligated.

**B.** If the Local Government will perform any work under this contract for which reimbursement will be provided by or through the State, the Local Government must complete training before federal spending authority is obligated. Training is complete when at least one individual who is working actively and directly on the Project successfully completes and receives a certificate for the course entitled *Local Government Project Procedures Qualification for the Texas Department of Transportation*. The Local Government shall provide the certificate of qualification to the State. The individual who receives the training certificate may be an employee of the Local Government or an employee of a firm that has been contracted by the Local Government to perform oversight of the Project. The State in its discretion may deny reimbursement if the Local Government has not designated a qualified individual to oversee the Project.

**C.** The Project cost estimate in Attachment C shows how necessary resources for completing the Project will be provided by major cost categories. These categories may include but are not limited to: (1) costs of real property and (2) costs of utility work.

**D.** The State will be responsible for securing the Federal and State share of the funding required for the development of the local Project. If the Local Government is due funds for expenses incurred, these funds will be reimbursed to the Local Government on a cost basis.

**E.** The Local Government will be responsible for all non-federal or non-state participation costs associated with the Project, including any overruns in excess of the approved local project budget unless otherwise provided for in this agreement or approved otherwise in an amendment to this agreement.

**F.** In the event any existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive, including, but not limited to, outdoor advertising or storm water drainage facility requirements, is more restrictive than State or federal regulations, or any other locally proposed change, including, but not limited to, plats or re-plats, results in any increased costs to the State, then the Local Government will pay one hundred percent (100%) of all those increased costs, even if the applicable county qualifies as an Economically Disadvantaged County (EDC). The amount of the increased costs associated with the existing, future, or proposed Local Government ordinance, commissioner's court order, rule, policy, or other directive will be determined by the State at its sole discretion.

**G.** If the Local government is an EDC and if the State has approved adjustments to the standard financing arrangement, this agreement reflects those adjustments.

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205_____
Not Research and Development

**H.** Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

**I.** The Local Government is authorized to submit requests for reimbursement by submitting the original of an itemized invoice in a form and containing all items required by the State no more frequently than monthly, and no later than ninety (90) days after costs are incurred. If the Local Government submits invoices more than ninety (90) days after the costs are incurred, and if federal funding is reduced as a result, the State shall have no responsibility to reimburse the Local Government for those costs.

**5. Location Surveys and Preparation of Right of Way Data**

The State, without cost to the Local Government, will perform the necessary preliminary engineering and title investigation in order to supply to the Local Government the data and instruments necessary to obtain acceptable title to the desired right of way.

**6. Determination of Right of Way Values**

The Local Government agrees to make a determination of property values for each right of way parcel by methods acceptable to the State and to submit to the State a tabulation of those values, signed by the appropriate Local Government representative. The tabulation shall list the parcel numbers, ownership, acreage, and recommended compensation. Compensation shall be shown in the component parts of land taken, itemization of improvements taken, damages (if any), and the amounts by which the total compensation will be reduced if the owner retains improvements. This tabulation shall be accompanied by an explanation to support the determined values, together with a copy of information or reports used in arriving at all determined values. This work will be performed by the Local Government at its expense without cost participation by the State. The State will review the data submitted and may base its reimbursement on the values that are determined by this review. The State, however, reserves the right to perform at its own expense any additional investigation, including supplemental appraisal work by State employees or by employment of fee appraisers, deemed necessary for determination of values to constitute the basis for State reimbursement. The parties may waive the requirement that the Local Government submit to the State property value determinations for any part of the required right of way by a writing signed by both parties. In instances of a waiver, the State, in its discretion, will make a determination of values to constitute the basis for State reimbursement.

**7. Negotiations**

The State will notify the Local Government as soon as possible as to the State's determination of value. Negotiation and settlement with the property owner will be the responsibility of the Local Government without participation by the State; however, the Local Government will notify the State immediately prior to closing the transaction so that a current title investigation may be made to determine if there has been any change in the title. The Local Government will deliver properly executed instruments of conveyance that,

together with any curative instruments found to be necessary as a result of the State's title investigation, will properly vest good and indefeasible title in the State for each right of way parcel involved. The Local Government will also deliver to the State an owner's policy of title insurance for each parcel, except as otherwise specifically approved by the State. Upon payment to the property owner of the agreed purchase price, the Local Government is authorized and directed to secure for the State possession of each parcel in accordance with all applicable Federal and State laws governing relocation assistance, notices to vacate, and forcible detainer. The costs incidental to negotiation, recording the right of way instruments, and securing possession of the parcels will be the responsibility of the Local Government. The cost of title insurance, closing services, and all costs of relocation assistance as authorized by applicable Federal and State laws will be the responsibility of the State.

**8. Administrative Settlements**

After the offer has been delivered to the property owner, and prior to the Special Commissioners' Hearing, the property owner may deliver one written counteroffer ("Administrative Settlement Proposal") to the Local Government. The Local Government will evaluate the Administrative Settlement Proposal and make a recommendation of approval or disapproval to the State. The State will consider the Administrative Settlement Proposal and the Local Government's recommendation and make a final determination of approval or disapproval in accordance with current State procedures. The State's approval of the Administrative Settlement Proposal is only for purposes of closing the purchase of the property prior to the Special Commissioners' Hearing. If a closing of the purchase does not occur prior to the hearing, the State's approval is automatically, without further action, withdrawn, and the State will participate only in the original approved value. In the event the State does not approve the Administrative Settlement Proposal, and the Local Government elects to purchase the property at a value greater than the original approved value, the State's participation in the purchase price will apply only to the original approved value, and the Local Government will pay one hundred percent (100%) of the costs that exceed the original approved value, even if the applicable county qualifies as an EDC.

**9. Condemnation**

Condemnation proceedings will be initiated at a time selected by the Local Government and will be the Local Government's responsibility at its own expense except as follows. The Local Government will obtain from the State without cost current title information and engineering data at the time condemnation is to be initiated. Except as set forth elsewhere in this agreement, the Local Government will concurrently file condemnation proceedings and a notice of lis pendens for each case in the name of the State, and in each case the judgment of the court will decree title and possession to the property condemned to the State. The Local Government may, as set forth in Article 11 (Excess Takings) and where it is determined to be necessary, enter condemnation proceedings in its own name. Property acquired in the Local Government's name for the State must comply with requirements set

forth in the engineering data and title investigation previously furnished to the Local Government by the State when the Local Government conveys the property to the State.

**10. Court Costs, Costs of Special Commissioners' Hearings and Appraisal Expense**

Court costs and costs of Special Commissioners' Hearings assessed against the State or Local Government in condemnation proceedings conducted on behalf of the State and fees incident to those hearings will be paid by the Local Government. Those costs and fees, with the exception of recording fees, will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under the established reimbursement procedure, provided that they are eligible for payment by the State under existing law. Where the Local Government uses the State's appraisers employed on a fee basis in Special Commissioners' Hearings or subsequent appeals, the cost of the appraiser for updating the report, preparing new reports, preparing for court testimony, and appearing in court to testify in support of the appraisal will be paid direct by the Local Government, but will be eligible for ninety percent (90%), or the applicable EDC-adjusted percent, State reimbursement under established procedure provided prior approval for the appraiser has been obtained from the State. The fee paid to the appraiser by the Local Government shall be in accordance with the fee schedule set forth in the appraiser's contract for appraisal services with the State.

**11. Excess Takings**

In the event the Local Government desires to acquire land in excess of that requested by the State for right of way purposes, the State's cost participation will be limited to the property needed for its purposes. If the Local Government elects to acquire the entire property, including the excess taking, by a single instrument of conveyance or in one eminent domain proceeding, the property involved will be acquired in the name of the Local Government and that portion requested by the State for right of way will be separately conveyed to the State by the Local Government. When the property is acquired by negotiation, the State's participation will be based on the State's approved value of that part of the property requested for right of way purposes, provided that the approved value does not exceed the actual payment made by the Local Government. When the property is acquired by condemnation, the State's participation will be in the proportionate part of the final judgment amount computed on the basis of the relationship of the State's approved value to the State's predetermined value for the whole property.

**12. Improvements**

**A.** Property owners will be afforded an opportunity in the negotiations to retain any or all of their improvements in the right of way taking. In anticipation of the owner's desiring to retain improvements, the State's approved value will include the amounts by which the upper limit of State participation will be reduced for the retention. It is further agreed that the upper limit for the State's participation in the Local Government's cost for an improved parcel will be reduced as shown in the State's approved value where the owner retains an improvement that is to be moved by either the Local Government or

the owner. If improvements are, in whole or part, a part of the right of way taking and are not retained by the owner, title is to be secured in the name of the State.

**B.** The State will participate in the acquisition of a structure severed by the right of way line if the part of the house, building, or similar structure that lies outside the right of way cannot be reconstructed adequately or there is nothing but salvage left, provided that the State's value is established on this basis and provided that title to the entire structure is taken in the name of the State. The State shall dispose of all improvements acquired. The net revenue derived by the State from the disposition of any improvements sold will be credited to the cost of the right of way procured and shared with the Local Government.

**13. Relocation of Utilities**

If the required right of way encroaches on an existing utility located on its own right of way and the proposed highway construction requires the adjustment, removal, or relocation of the utility facility, the State will establish the necessity for the utility work. State participation in the cost of making the necessary change, less any resulting increase in the value to the utility and less any salvage value obtainable, may be obtained by either the "actual cost" or "lump sum" procedures. Reimbursement under "actual cost" will be made subsequent to the Local Government's certification that the work has been completed and will be made in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the eligible items of cost as paid to the utility owner after the completion of an audit. The "lump sum" procedure requires that the State establish the eligibility of the utility work and enter into a three-party agreement with the owners of the utility facilities and the Local Government. This agreement must set forth the exact lump sum amount of reimbursement. The utility will be reimbursed by the Local Government after proper certification by the utility that the work has been done, and the reimbursement will be based on the prior lump sum agreement. The State will reimburse the Local Government in an amount equal to ninety percent (90%), or the applicable EDC-adjusted percent, of the firm commitment as paid to the utility owner. Reimbursement is subject to the provision that the individual lump sum agreement approved value shall not exceed $20,000, except as specifically approved by the State. In those cases where a single operation is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based upon the circumstances involved. The firm commitment to the utility will be an appropriate item of right of way. The adjustment, removal, or relocation of any utility line on publicly owned right of way by sufferance or permit will not be eligible for State reimbursement. The term "utility" under this agreement shall include publicly, privately, and cooperatively owned utilities.

**14. Fencing Requirements**

**A.** The Local Government may handle fencing through one of the following methods.

1. The Local Government may pay the property owner for existing right of way fences based on the value those fences contribute to the part taken and damages for an unfenced condition resulting from the right of way taking, in which case the estimated

value of those right of way fences and damages will be included in the recommended value and the approved value; or

2. The Local Government may perform the fencing on the property owner's remaining property.

**B.** When the Local Government performs right of way fencing as a part of the total right of way consideration, neither the value of existing right of way fences nor damages for an unfenced condition will be included in the recommended value or the approved value. State participation in the Local Government's cost of constructing right of way fencing on the property owner's remainder may be based on either the actual cost of the fencing or on a predetermined lump sum amount. The State will be given credit for any salvaged fencing material and will not participate in any overhead costs of the Local Government.

**C.** If State participation is to be requested on the lump sum basis, the State and the Local Government will reach an agreement prior to the actual accomplishment of the work as to the necessity, eligibility, and a firm commitment as to the cost of the entire fencing work to be performed. This is subject to the provision that the lump sum approved cost shall not exceed $20,000, except as specifically approved by the State. In the event the cost of the fencing is estimated to exceed $20,000, the transaction will be brought to the attention of the State for determination of proper handling based on the circumstances involved.

**15. Basis for Reimbursement Calculation**

**A.** The State will reimburse the Local Government for right of way acquired after the date of this agreement in an amount not to exceed ninety percent (90%), or the applicable EDC-adjusted percent, of the cost of the right of way acquired in accordance with the terms and provisions of this agreement. The State's reimbursement will be in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the State's predetermined value of each parcel, or the net cost of each parcel, whichever is less. All requests by the Local Government for reimbursement shall comply with the then current reimbursement submission requirements set forth in the *Texas Department of Transportation Right of Way Manual.*

**B.** If condemnation is necessary and title is taken under Article 9 (Condemnation), the participation by the State shall be based on the final judgment, conditioned on the State having been notified in writing prior to the filing of the suit and on prompt notice being given as to all action taken under the suit. The State shall have the right to become a party to the suit at any time for all purposes, including the right of appeal at any stage of the proceedings. All other items of cost shall be borne by the State and the Local Government as provided in other sections of this agreement.

**C.** If a lump sum fencing or utility adjustment agreement has been executed, the State will reimburse the Local Government in the amount of ninety percent (90%), or the applicable EDC-adjusted percent, of the predetermined lump sum cost of the right of way fencing or utility adjustment.

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
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Federal Project #_____
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**D.** If the Local Government prefers not to execute a lump sum agreement for either fencing or utility adjustments, the State will reimburse on the actual cost of that fencing or those adjustments. The Local Government's request for reimbursement will be supported by a breakdown of the labor, materials, and equipment used.

**16. Amendments**

Amendments to this agreement due to changes in the character of the work, terms of the agreement, or responsibilities of the parties relating to the Project may be enacted through a mutually agreed upon, written supplemental agreement.

**17. Notices**

All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, to the following addresses:

| **Local Government:** | **State:** |
|---|---|
| Honorable Judge, Ramon Garcia<br>**Judge, Hidalgo County**<br>**P.O. Box 1356**<br>**Edinburg, TX 78540** | Director of Right of Way Division<br>Texas Department of Transportation<br>125 E. 11th Street<br>Austin, Texas 78701 |

All notices shall be deemed given on the date delivered or deposited in the mail, unless otherwise provided by this agreement. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that notices shall be delivered personally or by certified U.S. mail and that request shall be honored and carried out by the other party.

**18. Remedies**

This agreement shall not be considered as specifying the exclusive remedy for any agreement default, but all remedies existing at law and in equity may be availed of by either party to this agreement and shall be cumulative.

**19. Legal Construction**

If one or more of the provisions contained in this agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, that invalidity, illegality, or unenforceability shall not affect any other provisions and this agreement shall be construed as if it did not contain the invalid, illegal, or unenforceable provision.

**20. Responsibilities of the Parties**

The State and the Local Government agree that neither party is an agent, servant, or employee of the other party and each party agrees it is responsible for its individual acts and deeds as well as the acts and deeds of its contractors, employees, representatives, and agents.

**21. Compliance with Laws**

The parties shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of this agreement. When required, the Local Government shall furnish the State with satisfactory proof of this compliance.

**22. Sole Agreement**

This agreement constitutes the sole and only agreement between the parties and supersedes any prior understandings or written or oral agreements respecting the subject matter of this agreement.

**23. Ownership of Documents**

Upon completion or termination of this agreement, all documents prepared by the State shall remain the property of the State. All data prepared under this agreement shall be made available to the State without restriction or limitation on their further use. All documents produced or approved or otherwise created by the Local Government shall be transmitted to the State in the form of photocopy reproduction on a monthly basis as required by the State. The originals shall remain the property of the Local Government. At the request of the State, the Local Government shall submit any information required by the State in the format directed by the State.

**24. Inspection of Books and Records**

The Local Government shall maintain all books, papers, accounting records, and other documentation relating to costs incurred under this agreement and shall make those materials available to the State and, if federally funded, the Federal Highway Administration (FHWA) or their duly authorized representatives for review and inspection at its office during the contract period and for four (4) years from the date of completion of work defined under this agreement or until any impending litigation, or claims are resolved. Additionally, the State and FHWA and their duly authorized representatives shall have access to all the governmental records that are directly applicable to this agreement for the purpose of making audits, examinations, excerpts, and transcriptions.

**25. State Auditor**

The state auditor may conduct an audit or investigation of any entity receiving funds from the State directly under this agreement or indirectly through a subcontract under this agreement. Acceptance of funds directly under this agreement or indirectly through a

subcontract under this agreement acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

**26. Procurement and Property Management Standards**

The parties shall adhere to the procurement standards established in Title 49 CFR §18.36 and with the property management standard established in Title 49 CFR §18.32.

**27. Civil Rights Compliance**

The parties to this agreement shall comply with the regulations of the U.S. Department of Transportation as they relate to nondiscrimination (49 CFR Part 21 and 23 CFR Part 200), and Executive Order 11246 titled "Equal Employment Opportunity," as amended by Executive Order 11375 and supplemented in the Department of Labor Regulations (41 CFR Part 60).

**28. Applicability of Federal Provisions**

Articles 29 through 34 only apply if Federal funding is used in the acquisition of right of way or the adjustment of utilities.

**29. Office of Management and Budget (OMB) Cost Principles**

In order to be reimbursed with federal funds, the parties shall comply with the Cost Principles established in OMB Circular A-87 that specify that all reimbursed costs are allowable, reasonable, and allocable to the Project.

**30. Disadvantaged Business Enterprise (DBE) Program Requirements**

**A.** The parties shall comply with the DBE Program requirements established in 49 CFR Part 26.

**B.** The Local Government shall adopt, in its totality, the State's federally approved DBE program.

**C.** The Local Government shall set an appropriate DBE goal consistent with the State's DBE guidelines and in consideration of the local market, project size, and nature of the goods or services to be acquired. The Local Government shall have final decision-making authority regarding the DBE goal and shall be responsible for documenting its actions.

**D.** The Local Government shall follow all other parts of the State's DBE program referenced in TxDOT Form 2395, Memorandum of Understanding Regarding the Adoption of the Texas Department of Transportation's Federally -Approved Disadvantaged Business Enterprise by Entity and attachments found at web address http://txdot.gov/business/business_outreach/mou.htm.

**E.** The Local Government shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any U.S. Department of Transportation (DOT)-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The Local Government shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure non-discrimination in award and administration of DOT-assisted contracts. The State's DBE program, as required by 49 CFR Part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the Local Government of its failure to carry out its approved program, the State may impose sanctions as provided for under 49 CFR Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 USC 1001 and the Program Fraud Civil Remedies Act of 1986 (31 USC 3801 et seq.).

**F.** Each contract the Local Government signs with a contractor (and each subcontract the prime contractor signs with a sub-contractor) must include the following assurance: *The contractor, sub-recipient, or sub-contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this agreement, which may result in the termination of this agreement or such other remedy as the recipient deems appropriate.*

**31. Debarment Certification**

The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Local Government certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549 and further certifies that it will not do business with any party that is currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this contract shall require any party to a subcontract or purchase order awarded under this contract to certify its eligibility to receive federal funds and, when requested by the State, to furnish a copy of the certification.

**32. Lobbying Certification**

In executing this agreement, each signatory certifies to the best of that signatory's knowledge and belief, that:

**A.** No federal appropriated funds have been paid or will be paid by or on behalf of the parties to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal

contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

**B.** If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with federal contracts, grants, loans, or cooperative agreements, the signatory for the Local Government shall complete and submit the Federal Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

**C.** The parties shall require that the language of this certification shall be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and all sub-recipients shall certify and disclose accordingly. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Title 31 USC §1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each failure.

**33. Federal Funding Accountability and Transparency Act Requirements**

**A.** Any recipient of funds under this agreement agrees to comply with the Federal Funding Accountability and Transparency Act and implementing regulations at 2 CFR Part 170, including Appendix A. This agreement is subject to the following award terms: http://edocket.access.gpo.gov/2010/pdf/2010-22705.pdf and http://edocket.access.gpo.gov/2010/pdf/2010-22706.pdf.

**B.** The Local Government agrees that it shall:

1. Obtain and provide to the State a Central Contracting Registry (CCR) number (Federal Acquisition Regulation, Part 4, Sub-part 4.1100) if this award provides for more than $25,000 in Federal funding. The CCR number may be obtained by visiting the CCR web-site whose address is: https://www.bpn.gov/ccr/default.aspx;
2. Obtain and provide to the State a Data Universal Numbering System (DUNS) number, a unique nine-character number that allows the Federal government to track the distribution of federal money. The DUNS number may be requested free of charge for all businesses and entities required to do so by visiting the Dun & Bradstreet on-line registration website http://fedgov.dnb.com/webform; and
3. Report the total compensation and names of its top five (5) executives to the State if:
   i. More than 80% of annual gross revenues are from the Federal government, and those revenues are greater than $25,000,000; and
   ii. The compensation information is not already available through reporting to the U.S. Securities and Exchange Commission.

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**34. Single Audit Report**

**A.** The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in OMB Circular A-133.

**B.** If threshold expenditures of $500,000 or more are met during the Local Government's fiscal year, the Local Government must submit a Single Audit Report and Management Letter (if applicable) to TxDOT's Audit Office, 125 E. 11th Street, Austin, TX 78701 or contact TxDOT's Audit Office at http://www.txdot.gov/contact_us/audit.htm.

**C.** If expenditures are less than $500,000 during the Local Government's fiscal year, the Local Government must submit a statement to TxDOT's Audit Office as follows: "We did not meet the $500,000 expenditure threshold and therefore, are not required to have a single audit performed for FY _____."

**D.** For each year the project remains open for federal funding expenditures, the Local Government will be responsible for filing a report or statement as described above. The required annual filing shall extend throughout the life of the agreement, unless otherwise amended or the project has been formally closed out and no charges have been incurred within the current fiscal year.

**35. Signatory Warranty**

Each signatory warrants that the signatory has necessary authority to execute this agreement on behalf of the entity represented.

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**THIS AGREEMENT IS EXECUTED** by the State and the Local Government in duplicate.

**THE LOCAL GOVERNMENT**

_____
Signature

_____Ramon Garcia _____
Typed or Printed Name

___Honorable Judge of Hidalgo County___
Title

_____
Date

**THE STATE OF TEXAS**

_____
John P. Campbell, P.E.
Director, Right of Way Division
Texas Department of Transportation

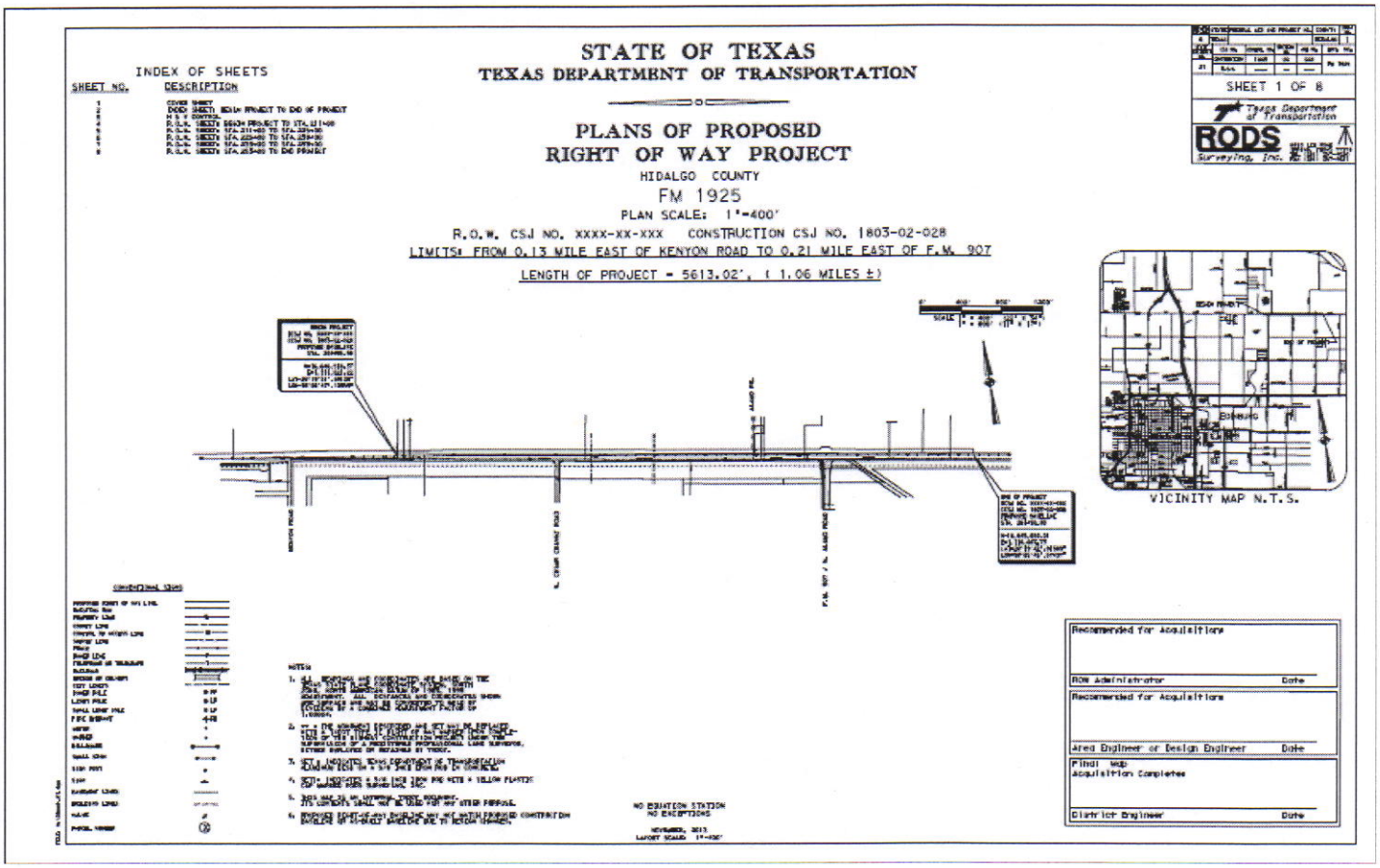
_____
Date

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205_____
Not Research and Development

# ATTACHMENT A
# RESOLUTION OR ORDINANCE

County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205
Not Research and Development

# ATTACHMENT B
# LOCATION MAP SHOWING PROJECT



County #____Hidalgo_____
District _____Pharr District_____
ROW CSJ #_1803-02-033_____
CCSJ #_____1803-02-028_____
Federal Project #_____
Federal Highway Administration
CFDA # 20.205
Not Research and Development

**ATTACHMENT C**
**PROJECT BUDGET ESTIMATE**

# Standard Contractual Agreement
# Local Government Performs Work
# Attachment C

| Description | Total Estimated Cost | State Participation | | | Local Participation | | |
|---|---|---|---|---|---|---|---|
| | | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. | % Before EDC Adj. | % After EDC Adj. | Cost After EDC Adj. |
| Right of Way Acquisition | $ 790,000 | 90% | 98.9% | $ 781,310 | 10% | 1.1% | $ 8,690 |
| Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| Joint Bid Reimbursable Utility Adjustments | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| | $0 | 0% | 0% | $0 | 0% | 0% | $0 |
| TOTAL | $ 790,000 | 90% | 98.9% | $ 781,310 | 10% | 1.1% | $ 8,690 |

Local Government requested and has been granted an Economically Disadvantaged County Adjustment from the Texas Transportation Commission on **September 26, 2013** by virtue of attached Minute Order No. **113723**, and approved a **89** percent adjustment to the required **10** percent local participation for this project. Also attached are completed Affidavit and EDC Program Information Sheet.

This is an estimate. The final amount of Local Government participation will be based on actual costs.

Texas Department of Transportation
PO BOX 1717 • PHARR TEXAS 78577-1717 • (956) 702-6100

December 6, 2013

The Honorable Ramon Garcia
County Judge, Hidalgo County
P.O. Box 1356
Edinburg, Texas 78540

**RE: Approved Economically Disadvantaged County (EDC) Program Application**
**FM 1925 from Kenyon Road to FM 907**
**CSJ: 1803-02-028**

Dear Judge Garcia:

Your attached application for an Economically Disadvantaged County (EDC) Program adjustment to the required local participation for the referenced project has been approved. The adjustment is detailed below. This adjusted local participation percentage will be reflected in the Right of Way Agreement.

| Project Component | Usual Local Participation | Adjustment Percentage | Adjusted Local Participation |
|---|---|---|---|
| Right of Way | 10% | 89% | 1.1% |

Should you have any questions regarding this reduction please contact Homero Bazan, Jr., P.E., our Director of Transportation Planning and Development, or myself at (956)702-6100. As always, we look forward to working with you toward the implementation of this project.

Sincerely,

Toribio Garza, Jr., P.E.
Pharr District Engineer

Attachments

cc: Pedro R. Alvarez, P.E., Deputy District Engineer
Homero Bazan, Jr., P.E., Director of Transportation Planning and Development
Valente Olivarez, P.E., Pharr Area Engineer
Margil Maldonado, P.E., Project Manager
Project File

Texas Department of Transportation

# AFFIDAVIT

The State of Texas,
County of Hidalgo

Before me, Monica Badillo, a notary public in and for the State of of Texas, on this day personally appeared Ramon Garcia, who being by me duly sworn, upon oath says:

I, Ramon Garcia, representing the city / county of Hidalgo, having been duly elected on 1-1-11 and having served continuously since that time, certify in my official capacity that, to the best of my knowledge, the information contained in this application is true and correct.

Ramon Garcia — Signature

11/26/13 — Date

Subscribed and sworn to before me, by the said Ramon Garcia, this 26th day of November, 2013, to certify which witness my hand and seal of office.

My commission expires 4-21, 2015

MONICA BADILLO NOTARY PUBLIC STATE OF TEXAS 04-21-2015

Monica Badillo
Official Signature

Monica Badillo
Printed or stamped name of Notary

FY 2014

EDCP

TEXAS DEPARTMENT OF TRANSPORTATION

# ECONOMICALLY DISADVANTAGED COUNTIES PROGRAM INFORMATION SHEET

COUNTY Hidalgo

APPLICANT Hidalgo County

District Contact Information

NAME: Maricela Salinas

TELEPHONE: 956.702.6352

* If the project is an "OFF-SYSTEM" project, is the project in the Unified Transportation Program (UTP) and have a local funding agreement in place, or in a District Bank Balance Program?

(Circle as appropriate) YES or NO

* If the applicant is a CITY within an eligible county, please answer the two following questions:

# 1 Economic Development Sales Tax? (Circle as appropriate) YES or NO

# 2 Population ( 2010 Census)?

PROJECT INFORMATION

| | |
|---|---|
| UTP PRIORITY STATUS: | CON |
| CSJ: | 1803-02-028 |
| ESTIMATED LETTING DATE | October-17 |

On-System? ( Circle as appropriate) YES or NO

LOCATION AND LIMITS - Give highway number with limits to and from.

FM 1925 from Kenyon Road to FM 907

PROJECT SCOPE- Give type of work.

Widen to 4 lane divided urban

ADJUSTMENT RATIONAL- Give reason why the adjustment is needed.

Hidalgo County is marked with high unemployement and povery rates. Addressing the infrastructure demands places a heavy burden on the County's budget so we request a reduction in the required match for this project.

ANTICIPATED PROJECT COST BREAKDOWN OF ELIGIBLE COMPONENTS

TOTAL ADJUSTMENT- 89

| 1. Project Component | 2. Est. Total Cost ($) | 3. Local Participation (%) | 4. Est. Required Local Match ($) | 5. Local Participation After Adjustment ($) |
|---|---|---|---|---|
| Right of Way | $790,000.00 | 10% | $79,000.00 | $8,690.00 |
| | | | $0.00 | $0.00 |
| | | | $0.00 | $0.00 |
| | | | $0.00 | $0.00 |
| TOTAL | $790,000.00 | | $79,000 | $8,690 |

Approved by: _____ Date: 12/10/13

**TEXAS TRANSPORTATION COMMISSION**

VARIOUS Counties

VARIOUS Districts

**MINUTE ORDER**



Transportation Code, §222.053(a), defines an "economically disadvantaged county" as a county that has, in comparison to other counties in the state: (1) below average per capita taxable property value; (2) below average per capita income; and (3) above average unemployment.

Transportation Code, §222.053(c), directs the Texas Transportation Commission (commission), when evaluating a proposal for a highway project in a political subdivision that consists of all or a portion of an economically disadvantaged county, to adjust the minimum local matching funds requirement after evaluating the political subdivision's effort and ability to meet the requirement.

Transportation Code, §222.053(f), requires the commission to certify a county as economically disadvantaged on an annual basis as soon as possible after the Comptroller of Public Accounts (comptroller) provides reports on the economic indicators listed above.

43 TAC §15.55(b)(2) provides that, in determining the adjustment to the local matching funds requirement, and the local government's efforts and ability to meet the requirement, the commission will consider a local government's: (A) population level; (B) bonded indebtedness; (C) tax base; (D) tax rate; (E) extent of in-kind resources available; and (F) economic development sales tax.

The comptroller has provided the data needed to determine the counties eligible for the Economically Disadvantaged Counties Program for 2014. The counties' efforts and ability to provide a local match have been considered using the criteria set forth in 43 TAC §15.55. Exhibit A lists the eligible counties and the respective recommended local match adjustments. Exhibit B establishes additional local match adjustments for cities within these counties participating in the program.

IT IS THEREFORE ORDERED by the commission that the list of counties eligible for the 2014 Economically Disadvantaged Counties Program is certified and the local match adjustment for each county is established, as shown in Exhibit A, as well as additional adjustments for cities participating in the program, as shown in Exhibit B.

Submitted and reviewed by:

Director of Planning

Recommended by:

Executive Director

113723 SEP 26 13

Minute Number | Date Passed

# EXHIBIT A

## Economically Disadvantaged Counties
## FY 2014

| FY 2014 Eligible Counties | Adjustment % |
|---|---|
| Anderson | 65 |
| Angelina | 52 |
| Atascosa | 66 |
| Bastrop | 68 |
| Bee | 74 |
| Bosque | 42 |
| Bowie | 38 |
| Brooks | 68 |
| Caldwell | 81 |
| Calhoun | 31 |
| Cameron | 75 |
| Camp | 40 |
| Cass | 55 |
| Cherokee | 64 |
| Concho | 84 |
| Crosby | 52 |
| Dawson | 58 |
| Delta | 77 |
| Dickens | 45 |
| Duval | 77 |
| El Paso | 56 |
| Ellis | 42 |
| Falls | 87 |
| Fannin | 64 |
| Floyd | 52 |
| Grayson | 52 |
| Grimes | 48 |
| Hall | 84 |
| Henderson | 48 |
| Hidalgo | 89 |
| Hill | 53 |
| Houston | 54 |
| Hunt | 55 |
| Jasper | 62 |
| Johnson | 40 |
| Jones | 78 |
| Karnes | 58 |
| Kaufman | 53 |
| Kinney | 61 |

| FY 2014 Eligible Counties | Adjustment % |
|---|---|
| Lamar | 47 |
| Leon | 26 |
| Liberty | 53 |
| Madison | 75 |
| Marion | 51 |
| Matagorda | 21 |
| Maverick | 77 |
| McLennan | 49 |
| Medina | 54 |
| Milam | 55 |
| Mitchell | 49 |
| Morris | 25 |
| Navarro | 55 |
| Newton | 34 |
| Presidio | 77 |
| Rains | 61 |
| Red River | 68 |
| Reeves | 58 |
| Runnels | 64 |
| Sabine | 48 |
| San Augustine | 39 |
| San Jacinto | 35 |
| San Saba | 66 |
| Shelby | 54 |
| Starr | 94 |
| Titus | 49 |
| Trinity | 72 |
| Tyler | 63 |
| Uvalde | 69 |
| Val Verde | 60 |
| Walker | 76 |
| Waller | 65 |
| Webb | 66 |
| Wharton | 42 |
| Willacy | 76 |
| Wood | 50 |
| Zapata | 60 |
| Zavala | 95 |
| | |

# EXHIBIT B

## Additional Adjustments for Cities Within an Economically Disadvantaged County FY 2014

Every eligible county receives an adjustment to its local match requirement ranging from 15 (minimum) to 95 (maximum) percent. A city within an economically disadvantaged county receives an adjustment equal to the adjustment for the county in which it is located, with the possibility of up to 10 additional percentage points based on its population and the existence of an economic development sales tax.

**The two following tables depict the additional percentage points that cities may be granted.**

***Economic Development Sales Tax:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| YES | *5%* |
| NO | *0%* |

***Population:***

| | *ADDITIONAL PERCENTAGE* |
|---|---|
| x < 1,000 | 5% |
| 1,000 < x < 2,000 | 4% |
| 2,000 < x < 3,000 | 3% |
| 3,000 < x < 4,000 | 2% |
| 4,000 < x < 5,000 | 1% |
| x > 5,000 | 0% |

**AI-43403** **Budget and Management 14. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Rolando Garcia, BUDGET & MANAGEMENT

**Department:** BUDGET & MANAGEMENT

## Information

### CAPTION

County Energy Transportation Reinvestment Zone (CETRZ):
1. Discussion, consideration and approval of an Order authorizing the creation of a County Energy Transportation Reinvestment Zone (segment of FM1017).

2. Approval and appointment of members of CERTZ Advisory Committee

3. Discussion, consideration and approval to apply for the FY2014 County Transportation Infrastructure Fund Grant Program

4. Discussion, authorization and approval of designating Wallace Road and Brushline Road Projects to be funded by the County Transportation Infrastructure Grant Program

5. Discussion, consideration and approval of accepting county road report(s) to be included in the minutes of the Commissioner's Court

### BACKGROUND

A CETRZ must be a contiguous area in the County. As required by law, the County published notice on December 31, 2013, and conducted a public hearing on January 07, 2014, related to the creation of a CETRZ. Adoption of a CETRZ Order is necessary to apply for energy transportation infrastructure funds with TxDOT. The CETRZ order must specify the actual parcels with the zone by tax ID number. When fund are applied for, the County must also include a road condition report. There is a 20% match if the County is granted transportation infrastructure funds.

Starting at Parcel 277417 and ending at Parcel 277402 (West to East)

## Fiscal Impact

**FISCAL YEAR:** 14 **ACCT. #:** 4-1200-431-00-125-030-0-899

**FUNDS AVAILABLE Y/N?:** YES **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

available funding for 10% match requirements for the grant application

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Roland Garcia (Originator) | Rolando Garcia | 02/28/2014 04:54 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 04:56 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Rolando Garcia Started On: 02/28/2014 03:20 PM

Final Approval Date: 02/28/2014

**AI-43389** **Budget and Management 14. D. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Rolando Garcia, BUDGET & MANAGEMENT

**Department:** BUDGET & MANAGEMENT

## Information

**CAPTION**

Precinct 4 TxDOT (1315):
Approval of 2014 appropriation of funds in the total amount of $19,465.00 for FM 2220 (Ware Road) TxDOT project (ROW CSJ:2094-01-044;CONST CSJ: 2094-01-038).

**BACKGROUND**

Local Participation after EDC adjustment

## Fiscal Impact

**FISCAL YEAR:** 14 **ACCT. #:** 4-1303-392-00-000-000-0-000

**FUNDS AVAILABLE Y/N?:** YES **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

available funding from fund balance

Reference: AI-43364

## Attachments

revised

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Roland Garcia (Originator) | Rolando Garcia | 02/28/2014 02:36 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:40 PM |
| Glinda Pacheco | Glinda Pacheco | 02/28/2014 03:11 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Rolando Garcia Started On: 02/28/2014 09:59 AM

Final Approval Date: 02/28/2014

**DATE:** February 28, 2014

**DEPARTMENT HEAD:** Sergio Cruz

**DEPARTMENT NAME:** Department of Budget & Management for:
Precinct No.3 TxDOT FM 2220

**2014**

**AI-43389r**

**ACCOUNT NUMBER:** 4-1303-392-00-000-000-0-000

**CONTACT PERSON:** Rolando Garcia Jr. **PHONE:** 292-7025 ext. 5413

**SUBJECT:** **Interfund & BA - Transfer/s (transfer in/out) (increase/decrease) in Accordance with Local Government Code Chapter 111, Subchapter C.**

**Honorable Commissioner's Court of Hidalgo County:**

I would like to request the following amendments (increases) to my departmental budget in accordance with Local Government Code, Chapter 111 Subchapter C.

| INCREASE/DECREASE ACCOUNT NUMBER | ACCOUNT (OBJECT) NAME | AMOUNT |
|---|---|---|
| **FROM** | | |
| | | |
| 4-1303-491-01-000-315-0-891 | TRANSFERS OUT-TXDOT PROJECTS | 19,465.00 |
| | | |
| | | |
| **TO** | | |
| 4-1315-391-01-000-303-0-000 | TRANSFERS IN-SALE OF CO ASSETS | 19,465.00 |
| | | |
| 4-1315-431-00-124-135-0-841 | TXDOT-WARE RD (M3N-M5N) AID TO GOVT AGEN | 19,465.00 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | **TOTAL BUDGET INCREASE (DECREASE)** | - |

**REASON:** Appropriation is for local participation for ROW Agreement (AI-43364) of $19,465.00 which is the cost after EDC reduction.

**DEPARTMENT HEAD SIGNATURE**

**APPROVED COMMISSIONERS' COURT**

**DATE** / /

**ATTEST COUNTY CLERK**

**AI-43170** **Purchasing Department 15. A. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Comm. AC Cuellar, Pct. #1 **Submitted By:** Elena Gomez, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

Presentation of sole bid received as detailed in tabulation sheet contained herein meeting all specifications and/ or requirements for the purpose of award and approval of contract for Request for Bid titled: Hidalgo County PCT 1- " Hauling Services for all Road Materials" through project No.: 2014-017-02-12-MEG.

### BACKGROUND

Current contract expires on April 28, 2014
New contract will commence on April 29, 2014

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1200-431-00-121-005-0-346

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:** n

**BUDGETARY IMPACT:**

On an " as needed basis"

## Attachments

Recommendation Memo
Contract
Tabulation sheet
Participating List
legal

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/26/2014 02:05 PM |
| Budget & Management | Debbie Tamez | 02/26/2014 04:20 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 03:39 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Elena Gomez Started On: 02/13/2014 09:27 AM

Final Approval Date: 02/28/2014

**Hidalgo County Purchasing Department**
**2812 S. Business Highway 281**
**New Administration Building**
**Edinburg, Texas 78539**
**(956) 318-2626/ Fax: (956) 318-2629**

# MEMORANDUM

(Department's Recommendation)

**TO** Hon. AC Cuellar Commissioner
Hidalgo County Precinct #1

**FROM:** Elena Gomez, Buyer II
Hidalgo County Purchasing Department

**DATE:** **February 12, 2014**

**RE:** **BID AWARD RECOMMENDATION REQUEST**
**Bid No. 2014-017-02-12-MEG**
**HIDALGO COUNTY PCT 1: "HAULING SERVICES FORALL ROAD MATERIALS"**

We have received a **sole responded** in reference with the above mentioned project. Enclosed you will find a copy of the tabulation sheet along with copy of the bid response for your review and recommendation.

We would like to present your recommendation on the next Commissioner's Count Meeting; therefore, we need your response no later than **Wednesday, February 26, 2014 @ 10:00 a.m.** to be able to present to Commissioner's Court **as soon as possible.** Please indicate your recommendation or any concerns on the space provided below and reply to the Purchasing Department **via fax to (956)-318-2629 or via email to: elena.gomez@co.hidalgo.tx.us.**

Should you have any questions or require further information please do not hesitate to call me at 318-2626- ext. 4855. Thank you for your attention and cooperation to this matter.

| AWARD TO VENDOR(S): | RECOMMENDATION (BASIS) |
|---|---|
| 1. Ray's Hauling | sole bidder |
| 2. | |

Please include the budget account number(s) for the above reference project.

Budget Acct No.: 4-1200-431-00-121-005-0-346

| AUTHORIZED SIGNATURE | PRINTED NAME | DEPARTMENT | DATE |
|---|---|---|---|
| | Raul Lozano | Pct. 1 | 2/13/14 |

Enclosures

THE STATE OF TEXAS §
§
COUNTY OF HIDALGO §

# SERVICE CONTRACT

## C-14-017-03-04

THIS CONTRACT is made and entered into this 4th day of March**,** 2014 by and between the County of Hidalgo, Texas ("County"), and **Roy's Hauling Service, Inc.** ("Company").

WHEREAS, Company responded to request for bids for **"Hauling of All Road Materials for Precinct No. 1,** more particularly described in Exhibit "A" (the "Services"); and

WHEREAS, Company submitted a bid to provide services in accordance with the specifications as bid, a copy of such specifications and bid being attached hereto as Exhibits "A" and "B" ("Vendor's Bid") respectively, and incorporated herein for all purposes (the "RFB Packet"); and

WHEREAS, in recognition of and in consideration of Company's agreement to perform the Services in accordance with Specifications, the Commissioners Court of County awarded the bid to Company.

NOW, THEREFORE, in mutual consideration of the foregoing and the further consideration of the following, the parties hereto agree as follows:

1. County and Company hereby agrees that this Contract is entered into in order to provide the Service to locations within Hidalgo County. This Contract does not extend to any third parties any duties or benefits conferred in any manner hereunder or otherwise.

2. Company hereby promises and agrees to render and provide, during the term of this Contract, and shall be obligated to render and provide the Services in accordance with the Specifications within **Hidalgo County** following a request for Services by the Hidalgo County Commissioner's Court or their designated agent(s). Company agrees in performing the Services that it will use proper professional standards, comply with any and all appropriate laws and regulations in providing the Services, and devote such time as is necessary to safely and efficiently provide the Services.

3. This Contract shall be for a period beginning **April 29, 2014** and ending **April 28, 2015** and may be extended at the sole discretion of County for an additional one (1) year period, unless this Contract is terminated pursuant to the provisions herein, whichever occurs first. County also reserves the right to continue this bid for an additional sixty (60) day Grace Period, under the same rates terms and conditions.

4. As a condition of this Contract, Company shall hold and maintain throughout the term of this Contract all licenses and permits required, or which may be required by any authority during the term hereof to provide the Services.

5. All trucks or vehicles operated by the Company to perform the Services shall contain all equipment required by any authority to operate on streets and roads and all persons in the employ of Company who operate such trucks or vehicles shall have the required licenses, qualifications, skill and expertise to perform such Services and shall comply with all laws, rules and regulations prescribed by any agency or authority having jurisdiction with regard to the operation of such trucks or vehicles in providing the Services.

6. As consideration for rendering the Service provided for in this Contract, the County agrees to pay Company the amounts specified in Exhibit "B" attached hereto payable against written invoice submitted by Company.

7. Company shall provide insurance in force on all its vehicles and all persons connected with providing services under this Contract naming County as an additional insured (with the coverages and in the amounts described on Exhibit "C" attached hereto and incorporated herein at this point for all purposes), and shall furnish to County certificates of such insurance coverage.

8. Company shall provide a sufficient number of trucks, vehicles, personnel and equipment available to safely and efficiently provide the Services.

9. Company shall indemnify and hold harmless County, its elected officials, employees and agents from any and all claims, damages, losses, and expenses including attorney's fees for the defense of any action against County arising out of, resulting from, or connected with the provision of the Service by Company under this Contract. Said indemnity shall cover any act or failure to act by the Company, its agents or employees.

10. This Contract shall not be assignable in whole or in part by either party without prior written consent of the other party.

11. It is expressly agreed that this Contract and the performance by the parties hereunder does not create any agency relationship or master-servant relationship that County has no supervision of the performance of the Services provided by Company, and that Company is an independent contractor under this Contract.

12. Any notice required or permitted to be given hereunder shall be in writing and shall be delivered personally or sent by certified mail, postage prepaid, as set forth below:

If to County: **The County of Hidalgo**
**Attn: County Judge**
**302 W. University Drive**
**Edinburg, Texas 78539**

If to Company **Roy's Hauling Service, Inc.**
**C/O Roy Balderas Jr.**
**PO Box 1896**
**Edinburg, Texas 78540**

13. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

14. Any contract award to a successful bidder will be in effect until (a) the contract expires, (b) delivery and acceptance of products, and/or performance of services ordered, or (c) terminated without cause by County with thirty (30) day's written notice prior to cancellation.

15. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

16. This Agreement shall be governed by and construed in accordance with the laws of the State of Texas and shall be performable in Hidalgo County.

17. **Entire Agreement**. This Agreement contains the entire contract between the parties hereto, and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in

writing executed by the parties hereto, and not otherwise.

18. **Commitment of Current Revenues Only**. In the event that, during any term hereof, the Commissioners Court does not appropriate sufficient funds to meet the obligations of County under this Agreement, County may terminate this Agreement upon ninety (90) days written notice to Contractor. County agrees, however, to use reasonable efforts to secure funds necessary for the continuing right to terminate this Agreement at the expiration of each budget period of County pursuant to the provisions of Tex. Loc. Govt. Code Ann.§ 271.903 (Vernon Supp. 1995).

WITNESS our hands in duplicate originals this____ day of_____, 2014.

**COUNTY OF HIDALGO**

By:_____

Ramon Garcia, County Judge

**ATTEST:**

_____

Arturo Guajardo, Jr. County Clerk

COMPANY: **Roy's Hauling Service, Inc.**

By:_____

Printed Name: _____

Title:_____

Approved by Commissioners Court on: _____

**APPROVED AS TO FORM:**
**Atlas, Hall & Rodriguez, L.L.P.**

By:_____

# EXHIBIT "A"

# SPECIFICATIONS/REQUIREMENTS

# EXHIBIT "A"

Hidalgo County Precinct No. 1
"Hauling Services for All Road Materials"
BID No. 2014-017-02-12-MEG
(NIGP CODE: 962-39)

## SPECIFICATIONS/REQUIREMENTS

Hidalgo County is seeking qualified companies to establish a contract for "Hauling Services for all Road Materials" for Pct 1. It is intended that all hauling of road materials will be awarded on a **per ton basis,** per mile radius. Hauling services will be on an **"As Needed Basis"** by the precinct.

1) Road materials (i.e. crushed caliche, sand, gravel, hot mix and cold mix) will be hauled from vendor pits that are currently holding the contract for material bids. Vendor(s) stated are presently on Contract for the materials; however, vendors may change due to contract expiration during the term of this bid. Awarded vendor(s) will be advised.

   Location of current pits and plants are as follows:
   - **Cold Laid** - Frontera Materials (La Joya Plant)
   - **Type D Hot Mix- Gravel** (Frontera Materials Progreso and La Joya Plant)
   - **Type D Hot Mix - Limestone** (Frontera Materials Progreso and La Joya Plant)
   - **Crushed Caliche** – Martin Marietta-(2 miles S. of Intersection FM 1017 & FM 3250 on 3250 Jericho Pitt-Linn, Tx.

2) Bid price for the services must be per ton basis, per mile radius on an **"As Needed Basis".**

3) Hidalgo County is requesting the minimum of **Five (5) vendor owned hauling trucks** (proof of ownership (title) shall be furnished along with your bid) to be available on an as needed basis with a minimum of twenty-two tons (22) per load. Please note the make, year, model, vehicle identification number, license plates and capacity of your hauling trucks on Exhibit "E".

4) The bidder(s) awarded the contract must furnish proof of possessing all necessary licenses, ownership (title for all owned vehicles) and permits pertaining to this project. Copies of all licenses, permits must be submitted to the Hidalgo County Purchasing Department with bid.

5) The bidder(s) awarded the contract **cannot** engage the services of a **subcontractor without prior written consent of Hidalgo County** to perform services hereunder. The successful bidder(s) must present evidence that the proposed subcontractor possess all the necessary licenses and permits to perform the services and that subcontractor has obtained the required insurance.

6) Contractual agreement is not exclusive, as Precinct No. 1 may use own hauling vehicles when necessary.

# EXHIBIT "A"

Hidalgo County Precinct No. 1
"Hauling Services for All Road Materials"
BID No. 2014-017-02-12-MEG
(NIGP CODE: 962-39)

## TERMS & CONDITIONS

1. The term of the bid contract will be for a period of one (1) year. Hidalgo County may in its sole discretion elect the option to extend the contract for one (1) additional year terms under the same rates, terms and conditions.

2. Hidalgo County reserves the right to continue this bid for an additional sixty (60) day grace period at the end of the contract term due to any unforeseen delay in the procurement process.

3. Hidalgo County reserves the right to award to MULTIPLE vendors if the County determines it is in its best interest to do so.

4. Hidalgo County reserves the right to reject any/all bids, to waive any/all formalities or technicalities, or to accept the bid considered the best and most advantage to the County giving due consideration to the location of the pit from the area of the precinct where the "Hauling Services" is to be transported.

5. Hidalgo County reserves the right to hold bids for a period of ninety (90) days without taking any action.

6. Any contract awarded to a successful bidder will be in effect until: (a) the contract expires, (b) delivery and acceptance of products and/or performance of services ordered or (c) terminated by County with thirty (30) days written notice prior to cancellation.

7. Hidalgo County may utilize "**State Awarded Contracts**" when it is in the County best interest to do so.

8. Hidalgo County reserves the right to award the low bid on a per ton/per mile radius basis to one bidder or to multiple bidders if the County determines it is in the best interest to do so.

9. Insurance Certificates (Exhibit "C") must be submitted to the Purchasing Department for approval prior to any services being performed by the awarded bidder.

10. After bid is awarded and lowest bidder(s) default s in meeting the general instructions to bidders and/or comply with contract agreement, Hidalgo County reserves the right to seek services from the next low bidder. In such event, County shall charge the successful bidder the difference for any additional cost of such item.

11. All costs and expenses associated with the preparation and submission of (bids, proposals and/or quotes) shall be the responsibility of the bidder and no reimbursements for such charges or expenses shall be passed onto Hidalgo County.

**Market Volatility and Unit Price Adjustments**:
Hidalgo County recognizes that during periods of national crisis and unstable economic conditions, unforeseen price increases might affect costs for goods and services contracted on an annual basis. The following procedure may be employed to mediate price volatility:

1. **Requesting Price Adjustment**: Upon written request of the Vendor to the County Purchasing Agent, the County may review evidence of prevailing industry-wide market conditions that warrant an adjustment in bid prices contained in the contract.

   - A Vendor must tie any price change clause to an industry-wide or otherwise nationally recognized index, or some other form of verifiable document. Such written request must be accompanied by a certified copy of the supplier's advisory or notification to the vendor of the price changes.
   - The Vendor must put the Purchasing Agent on the mailing lists for such publications so that the Purchasing Agent can monitor said changes. Such membership shall be at no cost to the County.
   - The County Purchasing Agent retains the right to determine whether or not such proposed price changes are in the best interest of the County.
   - No price escalation will be authorized in excess of the amount of the increase referred to in the supplier's notice.
   - The County may only grant a price increase if the evidence presented is deemed reliable. Should the County allow a price increase, the approved price change shall be honored for all orders received by the vendor or contractor after the effective date of such price change. Approved price changes are not applicable to orders already issued and in process at time of price change.

2. **Price Reduction**: Vendor shall notify the County at the time when the Vendor's costs for items and/or supplies reduce due to stabilization in the market at which time prices for items on this contract shall be reduced accordingly. Failure by the Vendor to notify the County of a decrease in costs for items and/or supplies for which the Vendor was granted a price adjustment, may result in immediate termination of this contract and the County shall not be obligated to pay the Vendor the difference between the contract price and the price adjustment.

3. **Timeframe for Adjusted Price Increases:** Price increases are only valid for the quarter in which they are requested and approved. Prices shall return to the original contract price at the beginning of the following quarter unless a Vendor notifies the County in writing within ten (10) days of expiration of the quarter in which the price increase is in effect, that it desires to have the price increase continue or that the Vendor is requesting a different price increase for the following quarter. Such request must be supplemented with sufficient justification to demonstrate that the price increase remains necessary. The County Purchasing Department shall have sole discretion whether to grant the price increase extension. The County too, shall have discretion to unilaterally reduce,

eliminate or extend a price adjustment to the Vendor at any time upon written notice from the County to the Vendor demonstrating justification for such reduction, elimination or extension of the price adjustment.

4. **Allowable Review Periods**: Price adjustment reviews may only be requested by the Vendor on a quarterly basis. However, the County may at its own discretion, conduct temporary price adjustment reviews at any time. The County Purchasing Agent and/or the County Auditor reserve the right to audit and/or examine any pertinent books, documents, papers, records or invoices relating directly to the contract transaction in question after reasonable notice and during normal business hours.

5. **Dollar Limit to Price Changes**: The total increase in contract price shall not exceed twenty-five percent (25%) of the original contract price during the contract term.

## ADDITIONAL INFORMATION

Hidalgo County is requesting that any and all questions, inquiries, and clarifications regarding quotes, bids, proposals, or statements of qualifications be addressed to, Martha L. Salazar, CPPB, Purchasing Agent, Attn: Cris Ayala, 2812 S. Business Hwy. 281, Edinburg, Texas 78539. **TELEPHONE INQUIRIES WILL NOT BE ACCEPTED.**

**ALL WRITTEN INQUIRIES WILL BE ACCEPTED VIA FACSIMILE TO (956) 292-7612 OR VIA E-MAIL TO cris.ayala@co.hidalgo.tx,us by NO LATER THAN WEDNESDAY, FEBRUARY 5, 2014 BY 5:00 P.M.** Responses will be sent to all applicants via facsimile or e-mail by no **later than WEDNESDAY, FEBRUARY 7, 2014 BY 5:00 P.M.**

# EXHIBIT "B"

# VENDOR'S BID

**EXHIBIT "B"**
**BID PAGE**
**HIDALGO COUNTY PRECINCT NO. 1**
**"HAULING SERVICES FOR ALL ROAD MATERIALS"**
**RFB NO. 2014-017-02-12-MEG**

OPENED 2/12/14 9:25am Witnessed

## PART I

**Award will be based on the lowest bid per ton per mile radius meeting all required specifications.**

| Location of Plant | | Radius | Total Cost Per Ton | Fuel Costs Percentage Per Ton | Current/Base Fuel Cost: |
|---|---|---|---|---|---|
| COLD MIX- *(FRONTERA MATERIALS)* | LA JOYA PLANT | 01-10 miles | $ NO BID | - % | $ - |
| | | 11-20 miles | $ NO BID | - % | $ - |
| | | 21-30 miles | $ NO BID | - % | $ - |
| | | 31-40 miles | $ NO BID | - % | $ - |
| | | 41-50 miles | $ NO BID | - % | $ - |
| | | 51-60 miles | $ NO BID | - % | $ - |
| | | 61-70 miles | $ NO BID | - % | $ - |
| | | 71-100 miles | $ NO BID | - % | $ - |
| *(FRONTERA MATERIALS)* Type D -Hot Mix-Gravel Type D- Hot Mix-Limestone | PROGRESO AND/OR LA JOYA PLANT | 01-10 miles | $ NO BID | - % | $ - |
| | | 11-20 miles | $ NO BID | - % | $ - |
| | | 21-30 miles | $ NO BID | - % | $ - |
| | | 31-40 miles | $ NO BID | - % | $ - |
| | | 41-50 miles | $ NO BID | - % | $ - |
| | | 51-60 miles | $ NO BID | - % | $ - |
| | | 61-70 miles | $ NO BID | - % | $ - |
| | | 71-100 miles | $ NO BID | - % | $ - |
| *(MARTIN MARIETTA)* Crushed Caliche- | 2 miles S of Intersection FM 1017 & FM 3250 on 3250 Jericho Pit Linn, Tx | 01-10 miles | $ 7.90 | 75 % | $ 5.93 |
| | | 11-20 miles | $ 8.05 | 75 % | $ 6.04 |
| | | 21-30 miles | $ 7.50 | 75 % | $ 5.63 |
| | | 31-40 miles | $ 9.20 | 75 % | $ 6.90 |
| | | 41-50 miles | $ 11.50 | 75 % | $ 8.63 |
| | | 51-60 miles | $ 12.00 | 75 % | $ 9.00 |
| | | 61-70 miles | $ 12.50 | 75 % | $ 9.38 |
| | | 71-100 miles | $ 13.00 | 75 % | $ 9.75 |

Bidder/Company Name: Roy's Hauling Service, Inc.
Address: P.O. Box 1896
City/State/Zip Code: Edinburg, Texas 78540
Phone № 956.383.2206 Fax № 956.383.2569 Cell №
Email address: royshaulinginc@aol.com
Authorized Signature: Roy Balderas Jr.
Printed Name: Roy Balderas Jr.

**EXHIBIT "B"**
**BID PAGE**
**HIDALGO COUNTY PRECINCT NO. 1**
**"HAULING SERVICES FOR ALL ROAD MATERIALS"**
**RFB NO. 2014-017-02-12-MEG**

OPENED 2/12/14 9:25am Witnessed

## PART II

### Bid Price Adjustment by Hidalgo County Precinct No. 1

**At the time of bid opening South Texas is experiencing historic high fuel prices. Therefore, Hidalgo County Precinct No. 1 is requesting pricing adjustments based on the following:**

A Fuel Cost Base Bid Price for project will be based on the OPIS Fuel Index for **February 7, 2014**. For each 10% (increase or decrease) in the current OPIS Index of **February 7, 2014** during the contract term, the fuel cost(s) portion of the awarded bid price(s) will be adjusted accordingly. (As per above samples, a 10% increase is reflected as follows: $ 1.00=$1.10 and $ 1.10=$1.21; a 10% decrease is reflected as follows: $1.00=$0.90 and $1.10=$0.99)

In the event you submit an invoice reflecting a price change under this provision, the Hidalgo County Precinct No. 1 will only honor the change if a copy of the OPIS report on which the change is based accompanies the invoice. Additionally, the Hidalgo County Precinct No. 1 reserves the right to independently verify changes in OPIS pricing and to modify an invoice amount based on a 10% change in the OPIS Index.

**In determining whether price changes are permitted hereunder, vendor must submit the appropriate OPIS Index issued on the date of the vendor's billing invoice.**

Acknowledgment and agreement to Bid Price Adjustment Part I & II for the term of the contract including any grace period extension.

Signature of Vendor

02/10/2014
Date

Roy Balderas Jr.
Print Name of Vendor

# EXHIBIT "E"

## HIDALGO COUNTY PRECINCT NO. 1
## "HAULING SERVICES FOR ALL ROAD MATERIALS"
## BID NO.: 2014-017-02-12-MEG

***Hidalgo County Precinct No. 1 is requesting the following information of the available hauling trucks to be utilized for this project: MAKE/MODEL, VEHICLE IDENTIFICATION NUMBERS, LICENSE PLATE NUMBERS & TONAGE PER LOAD for each truck personally owned and/or leased by vendor which shall be covered under insurance requirements as set forth by Hidalgo County.***

| TRUCK/UNIT NO. | YEAR/MAKE/MODEL | | VEHICLE IDENTIFICATION NO. | LICENSE PLATE NO. | TONS PER LOAD | VENDOR OWNED OR LEASED |
|---|---|---|---|---|---|---|
| | 1998 | International | 2HSFHAER3WC044857 | 1C64720 | 22-24 | Owned |
| | 1999 | International | 2HSFHAER0XC066851 | 1C64721 | 22-24 | Owned |
| | 2000 | International | 2HSFHAER9YC037946 | 1C64719 | 22-24 | Owned |
| | 2000 | Peterbilt | 1XPCU9X7YD483207 | 1C64722 | 22-24 | Owned |
| | 2000 | Peterbilt | 1XPCDU9X5YD483173 | 1C64723 | 22-24 | Owned |
| | 2006 | Peterbilt | 1XPFDB9X76D639700 | 1C64725 | 22-24 | Owned |
| | 2006 | Peterbilt | 1XPFDB9X06D639702 | 1C64724 | 22-24 | Owned |
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# EXHIBIT "C"

# INSURANCE

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 12/28/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Valmor Insurance Agency, Inc.
1303 N 10th Street
McAllen TX 78501

CONTACT NAME:
PHONE (A/C, No, Ext): 956-630-3081 FAX (A/C, No):
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE — NAIC #

INSURER A:
INSURER B: UNITRIN MUTUAL INS. CO.
INSURER C: ATLANTIC CASUALTY
INSURER D:
INSURER E:
INSURER F:

INSURED
ROY'S HAULING SERVICE INC.
P O BOX 1896
EDINBURG, TEXAS 78540-1896

COVERAGES — CERTIFICATE NUMBER: — REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| B | GENERAL LIABILITY<br>X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE X OCCUR<br>GEN'L AGGREGATE LIMIT APPLIES PER<br>X POLICY PRO-JECT LOC | Y | N | L086026998 | 03/28/2013 | 03/28/2014 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG<br>Fire Damage | $ 1,000,000<br>$ 100,000<br>$ 5,000<br>$ 1,000,000<br>$ 1,000,000<br>$ INCLUDED<br>$ |
| B | AUTOMOBILE LIABILITY<br>ANY AUTO<br>ALL OWNED AUTOS<br>X SCHEDULED AUTOS<br>X HIRED AUTOS<br>X NON-OWNED AUTOS | N | N | 2300075 | 08/20/2012 | 08/20/2013 | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident) | $ 1,000,000<br>$<br>$<br>$ |
| | UMBRELLA LIAB OCCUR<br>EXCESS LIAB CLAIMS-MADE<br>DED RETENTION $ | | | | | | EACH OCCURRENCE<br>AGGREGATE | $<br>$ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below | Y/N<br>N/A | | | | | WC STATU-TORY LIMITS X OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | $<br>$<br>$ |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
1998 INTL #044857.1999 INTL #066851. 2000 PTRB #483178.2000 PTRB #483173. 2000 PTRB #483206. 2000 PTRB #483207. 2006 PTRB #639700 AND 2006 PTRB #639702

CERTIFICATE HOLDER
COUNTY OF HIDALGO
2802 S BUSINESS HWY 281

EDINBURG, TX 78539

CANCELLATION
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Marilu Guerra

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ACORD®

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/02/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Willis of Texas, Inc.<br>c/o 26 Century Blvd.<br>P.O. Box 305191<br>Nashville, TN 372305191 USA | CONTACT NAME:<br>PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378<br>E-MAIL ADDRESS: certificates@willis.com |
| INSURED<br>Roy's Hauling Service, Inc.<br>P O BOX 1896<br>Edinburg, TX 78539 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A: Praetorian Insurance Company — 37257<br>INSURER B:<br>INSURER C:<br>INSURER D:<br>INSURER E:<br>INSURER F: |

JAN 10 2014

COVERAGES CERTIFICATE NUMBER: W149799 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | GENERAL LIABILITY | | | | | | | |
| | COMMERCIAL GENERAL LIABILITY | | | | | | EACH OCCURRENCE | $ |
| | CLAIMS-MADE OCCUR | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $ |
| | | | | | | | MED EXP (Any one person) | $ |
| | | | | | | | PERSONAL & ADV INJURY | $ |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | GENERAL AGGREGATE | $ |
| | POLICY PRO-JECT LOC | | | | | | PRODUCTS - COMP/OP AGG | $ |
| | | | | | | | | $ |
| A | AUTOMOBILE LIABILITY | | | | | | | |
| | ANY AUTO | | | | | | COMBINED SINGLE LIMIT (Ea accident) | $ 1,000,000 |
| | ALL OWNED AUTOS | | | | | | BODILY INJURY (Per person) | $ |
| | X SCHEDULED AUTOS | | | PICTX0002409 | 08/20/2013 | 08/20/2014 | BODILY INJURY (Per accident) | $ |
| | X HIRED AUTOS | | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | NON-OWNED AUTOS | | | | | | | $ |
| | UMBRELLA LIAB OCCUR | | | | | | | |
| | EXCESS LIAB CLAIMS-MADE | | | | | | EACH OCCURRENCE | $ |
| | DED RETENTION $ | | | | | | AGGREGATE | $ |
| | | | | | | | | $ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY | | | | | | WC STATU-TORY LIMITS OTH-ER | |
| | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N (Mandatory in NH) | | N/A | | | | E.L. EACH ACCIDENT | $ |
| | If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | E.L. DISEASE - EA EMPLOYEE | $ |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | $ |
| A | Auto Physical Damage | | | PICTX0002409 | 08/20/2013 | 08/20/2014 | Comp Ded $1,000<br>Coll Ded $1,000 | |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Vehicles:
1 1998, INTERNATIONAL, TRUCK, 2HSFBAER3WC044857
2 1999, INTERNATIONAL, TRUCK, 2HSFHAER0XC066851
3.2000, PETERBILT, TRUCK TRACTOR, 1XPCDU9X5YD483173
4.2000, PETERBILT, TRUCK TRACTOR, 1XPCDU9X7YD483207

CERTIFICATE HOLDER

County of Hidalgo
2012 S. Business Hwy 281
Edinburg, TX 78539

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Brian C. Harris

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AGENCY CUSTOMER ID: _____

LOC #: _____

# ADDITIONAL REMARKS SCHEDULE



| AGENCY | NAMED INSURED |
|---|---|
| Willis of Texas, Inc. | Roy's Hauling Service, Inc.<br>P O BOX 1896<br>Edinburg, TX 78539 |
| POLICY NUMBER<br>See Page 1 | |
| CARRIER<br>See Page 1 / NAIC CODE<br>See Page 1 | EFFECTIVE DATE: See Page 1 |

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM.

FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

5.2006, PETERBILT, TRUCK TRACTOR, 1XPFDB9X76D639700
6.2006, PETERBILT, TRUCK TRACTOR, 1XPFDB9X06D639702
7.2000, PETERBILT, TRUCK TRACTOR, 1XPCDU9X4RD483178
8.2000, PETERBILT, TRUCK TRACTOR, 1XPCDU9X5YD483206
9.2012, CTS, TRAILER, 5TU1140206S000639
10.2012, CTS, TRAILER, 5TU1140256S000638
11.2006, CTS, TRAILER, 1C91140206S770071
12.2006, CTS, TRAILER, 1C91140236S770687
13.1999, CPS, TRAILER, 4Z4111623XP001967
14.2001, CTS, TRAILER, 5TU3432297S000345
15.2000, CPS, TRAILER, 4Z4515425YP002650
16.1999, CPS, TRAILER, 4Z4515423XP002244
17.2012, EAGER BEAVER, TRAILER, 1129D5521CL076418
18.2003, UTILITY, TRAILER, 1UYVS25393NU34807
19.2000, CTS, Trailer, 1C9114029YF770069



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ACORD

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/30/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER 956-383-3332 956-720-0257<br>SILVERHORN INSURANCE GROUP<br>200 N 12TH ST SUITE 102<br>EDINBURG, TX 78541 | CONTACT NAME: DAVID D. SALAZAR JR<br>PHONE (A/C, No, Ext): 956-383-3332 FAX (A/C, No): 956-720-0257<br>E-MAIL ADDRESS: DAVID@SILVERHORNINSURANCE.COM |
| INSURED 956-239-2359<br>ROY'S HAULING<br>PO BOX 1896<br>Edinburg, TX 78540 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A: TEXAS MUTUAL INS.<br>INSURER B:<br>INSURER C:<br>INSURER D:<br>INSURER E:<br>INSURER F: |

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | GENERAL LIABILITY | | | | | | EACH OCCURRENCE | $ |
| | ☐ COMMERCIAL GENERAL LIABILITY | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $ |
| | ☐ CLAIMS-MADE ☐ OCCUR | | | | | | MED EXP (Any one person) | $ |
| | | | | | | | PERSONAL & ADV INJURY | $ |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | GENERAL AGGREGATE | $ |
| | ☐ POLICY ☐ PRO-JECT ☐ LOC | | | | | | PRODUCTS - COMP/OP AGG | $ |
| | | | | | | | | $ |
| | AUTOMOBILE LIABILITY | | | | | | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | ☐ ANY AUTO | | | | | | BODILY INJURY (Per person) | $ |
| | ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS | | | | | | BODILY INJURY (Per accident) | $ |
| | ☐ HIRED AUTOS ☐ NON-OWNED AUTOS | | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | | | | | | | | $ |
| | ☐ UMBRELLA LIAB ☐ OCCUR | | | | | | EACH OCCURRENCE | $ |
| | ☐ EXCESS LIAB ☐ CLAIMS-MADE | | | | | | AGGREGATE | $ |
| | ☐ DED ☐ RETENTION $ | | | | | | | $ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: Y<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N/A | ✓ | TSF-0001257473 | 8/31/2013 | 8/31/2014 | WC STATU-TORY LIMITS / OTH-ER | |
| | | | | | | | E.L. EACH ACCIDENT | $ 100000.00 |
| | | | | | | | E.L. DISEASE - EA EMPLOYEE | $ 100000.00 |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | $ 500000.00 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

COUNTY OF HIDALGO
2812 S. BUSINESS HWY 281
EDINBURG, TX 78539

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

David D. Salazar Jr

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# BID TABULATION

HIDALGO COUNTY PRECINCT NO. 1
"HAULING SERVICES FOR ALL ROAD MATERIALS"
BID NO. 2014-017-02-12-MEG

| LOCATION OF PLANT | | RADIUS | PARTICIPATING VENDORS | | |
|---|---|---|---|---|---|
| | | | ROY'S HAULING SERVICES INC. Edinburg, Tx | | |
| | | | Total Cost Per Ton | Fuel Costs Percentage Per Ton | Current/Base Fuel Cost |
| ***(FRONTERA MATERIALS)*** **COLD MIX** | **LA JOYA PLANT** | 01-10 miles | NO BID | | |
| | | 11-20 miles | | | |
| | | 21-30 miles | | | |
| | | 31-40 miles | | | |
| | | 41-50 miles | | | |
| | | 51-60 miles | | | |
| | | 61-70 miles | | | |
| | | 71-100 miles | | | |
| ***(FRONTERA MATERIALS)*** **Type D -Hot Mix-Gravel** **Type D- Hot Mix-Limestone** | **PROGRESO PLANT AND/OR LA JOYA PLANT** | 01-10 miles | NO BID | | |
| | | 11-20 miles | | | |
| | | 21-30 miles | | | |
| | | 31-40 miles | | | |
| | | 41-50 miles | | | |
| | | 51-60 miles | | | |
| | | 61-70 miles | | | |
| | | 71-100 miles | | | |
| ***(MARTIN MARIETTA)*** **Crushed Caliche-** | **2 miles S of Intersection FM 1017 & FM 3250 on 3250 Jericho Pit Linn, Tx** | 01-10 miles | $ 7.90 | 75% | $ 5.93 |
| | | 11-20 miles | $ 8.05 | 75% | $ 6.04 |
| | | 21-30 miles | $ 7.50 | 75% | $ 5.63 |
| | | 31-40 miles | $ 9.20 | 75% | $ 6.90 |
| | | 41-50 miles | $ 11.50 | 75% | $ 8.63 |
| | | 51-60 miles | $ 12.00 | 75% | $ 9.00 |
| | | 61-70 miles | $ 12.50 | 75% | $ 9.38 |
| | | 71-100 miles | $13.00 | 75% | $ 9.75 |

**HIDALGO COUNTY PURCHASING DEPARTMENT**
**PARTICIPATING BIDDER'S LOG**
**SPECIFICATIONS/BID PACKETS**
**RFB-RFP-RFQ**

**BID OPENING DATE: February 12, 2014 BID OPENING TIME: 9:30 A.M.**
**DEPARTMENT/BID DESCRIPTION:"HIDALGO COUNTY PRECINCT NO 1- HAULING SERVFICES FOR ALL ROAD MATERIALS"**
**BID NO.: 2014-017-02-12-MEG**

| NAME OF VENDOR: COMPANY/FIRM | BID REQUEST *VIA | SIGNATURE (IF APPLICABLE) OR INITIALS OF STAFF ADDRESSING MAIL OUT | DATE | ADDRESS & PHONE NO |
|---|---|---|---|---|
| 1. Roy's Hauling Service, Inc.<br>Attn: Roy Balderas Jr.<br>rbalde1008@ao.com<br>royshauling@aol.com | Email | Elena Gomez | 01/27/14 | P.O. BOX 1896<br>Edinburg, Tx 78540<br>office-956-383-2206<br>fax-956-383-2569<br>mobile-956-239-2359 |
| 2. Universal Truckers Inc.<br>Attn: Bernardo Saenz<br>Bernardosaenz95@yahoo.com | Email | Elena Gomez | 01/27/14 | 1052 Esperanza St.<br>Alamo, Tx 78516<br>P.O. Box 653<br>956-782-4939 |
| 3. Upper Valley Materials | Email | Elena Gomez | 01/27/14 | 7301 W Expressway 83<br>Mission, TX 78572<br>(956) 580-2502 |
| 4. Prime Trucking Services LLC | Email | Elena Gomez | 01/27/14 | 1001 S 10th St Ste F-3020<br>McAllen, TX 78501<br>(956) 928-1873 |
| 5. Prime Vendor Inc.<br>bids20@prime-vendor.com | Email | Elena Gomez | 01/27/14 | 4622 Cedar Avenue<br>Wilmington NC 28403<br>Phone: 800-746-9554<br>Fax: 800-746-8307 |
| 6. The Blue Book Building<br>***Rachel Siegmund***<br>rsiegmund@thebluebook.com | Email | Elena Gomez | 01/27/14 | 800.431.2584 ext. 3032 |
| 7. Oscar Cancino | Email | Elena Gomez | 01/27/14 | 956.638.0433 |
| 8. F.E. G. Trucking & Construction | IP | Elena Gomez | 02/03/14 | 1120 N. Trosper Blvd .<br>Alton, Texas 78573<br>956-342-6856<br>956-400-2351 |
| 9.Frontera Materials<br>Attn: Barry Ehlinger<br>bmefrontera@aol.com | BLM | Elena Gomez | 1-21-14 | P.O. Box 1086<br>Weslaco, TX. 78596<br>(956)- 607-5965 |
| 10.Prime Vendor Inc. Bids20<br>Kimberly Doumit<br>bids20@prime-vendor.com | Email Request | Elena Gomez | 1-30-14 | 4622 Cedar Avenue<br>Wilmington NC 28403<br>Phone: 800-746-9554<br>Fax: 800-746-8307 |
| 11. Audrey Villa<br>audrey.villa@gmail.com | Email Request | Elena Gomez | 1-27-14 | |

***VIA:**
**IN PERSON (IP)**
**BIDDER LIST MAIL OUT (BLM)**
**FACSIMILE (FAX)**
**TELEPHONE REQUEST (TR)**
**E-MAIL (EM)**

**Zimbra** **cris.ayala@co.hidalgo.tx.us**

# Fwd: Contract for Hauling of All Road Materials-Pct. 1

**From :** Martha Salazar <martha.salazar@co.hidalgo.tx.us> Thu, Feb 13, 2014 05:26 PM

**Subject :** Fwd: Contract for Hauling of All Road Materials-Pct. 1

**To :** Cris Ayala <cris.ayala@co.hidalgo.tx.us>

---

**From:** "Steve Crain" <scrain@atlashall.com>
**To:** "Martha Salazar" <martha.salazar@co.hidalgo.tx.us>
**Sent:** Thursday, February 13, 2014 5:02:21 PM
**Subject:** RE: Contract for Hauling of All Road Materials-Pct. 1

The contract is fine with the addition of this Certificate of Insurance.

---

**From:** Martha Salazar [mailto:martha.salazar@co.hidalgo.tx.us]
**Sent:** Thursday, February 13, 2014 4:06 PM
**To:** Steve Crain
**Cc:** Cris Ayala
**Subject:** Fwd: Contract for Hauling of All Road Materials-Pct. 1

Worker's Comp. attached for your review.
Marty

---

**From**: "Cris Ayala" <cris.ayala@co.hidalgo.tx.us>
**To:** "Martha Salazar" <martha.salazar@co.hidalgo.tx.us>
**Sent:** Thursday, February 13, 2014 4:00:57 PM
**Subject:** Re: Contract for Hauling of All Road Materials-Pct. 1

Ms. Marty,
I apologize, forgot to attach. Here is the W/C Insurance Certificate.

**AI-43377** **Purchasing Department 15. A. 2.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Vangie Garcia,
PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

Acceptance and approval to purchase One (1) New 2014 Cat Model CT660 Roll-Off Truck with standard equipment through Hidalgo County's Membership participation with National Joint Powers Alliance (NJPA) awarded Contract #060311-CAT in the amount of $151,697.38.

### BACKGROUND

Funding information and requisition will be identified by the Precinct.

NOTE: VERIFICATION, VALIDATION FOR CONFIRMATION PURPOSES OF EACH ITEM WITH PRICING IS BEING INITIATED.

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-432-00-121-001-0-742

**FUNDS AVAILABLE Y/N?:** Y/Pending **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

Funding pending approval of interdepartmental transfer - AI# 43397 3-5-14

REQ #252801

## Attachments

Proposal with Pct's Request

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/27/2014 05:28 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 09:18 AM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 02:36 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Vangie Garcia Started On: 02/27/2014 02:47 PM

Final Approval Date: 02/28/2014

HOLT® TRUCK CENTER

1320 South 25th Street
Edinburg, TX 78539
(956) 289-7600
Fax (956) 383-6819

**February 4, 2014**

**Governmental Contract Initiative (GOV-11-NJPA) with the National Joint Powers Alliance Contract – 060311-CAT.**

Hidalgo County PCT #1
Raul Lozano
1902 Joe Stephens, Suite 101
Weslaco, TX 78596

Thank you for this opportunity to quote Caterpillar products for your business needs. We are pleased to quote the following for your purchase consideration.

ONE (1) New 2014 Cat Model CT660 Roll-Off Trucks with standard equipment in addition to the additional specifications listed in the attached detailed truck proposal.

## NJPA Pricing

| BASE MODEL | PART# | LIST PRICE |
|---|---|---|
| CT660 | Tractor | $128,499.65 |
| OPTIONS | | |
| Optional Truck Attachments | | $ 26,166.10 |
| Sub-Total | | $154,665.75 |
| *NJPA Member Discount 23% | | ($35,573.12) |
| Holt Competitive Allowance Discount 8.9% | | ($13,765.25) |
| Truck Price with Discounts Applied | | $105,327.38 |
| CUSTOMER NON-DISCOUNTABLE ITEMS | | |
| Freight | | $ 1,925.00 |
| Emission Charge and Labels | | $ 8,000.00 |
| On Board Diagnostics | | $ 650.00 |
| Galbreath U75-IO-174 (75,000lb Roll-Off Hoist) | | $35,795.00 |
| Sale Price Per Truck | | $151,697.38 |
| TOTAL SALE PRICE FOR (1) TRUCK | | $151,697.38 |

Mark Brunnemann
Sales Representative
Direct (956) 289-7636
Cell (956) 330-0630
Mark.Brunnemann@holtcat.com

# ORDER CONTENT

Print Date : 3/11/2013 10:21

TRK01478

**HOLT TEXAS LTD.**

**Job Number : 498353**

**Order No.:** 691256
**Dealer Account:** E140
**Telephone:** - -
**Type:** STOCK
**Region:** 652
**Vehicle ID:**

**Dealer Order No:** 000656

**Customer PO No:**

## Order Details

**Model:** CF7AA
**Proposal No:** 000368
**Reference ID:** Roll-Off 908LL

**Description:** CT660S SBA 6x4
**Order Qty:** 1

**Sales Person:** Mark Mims
**Build Date:** 2/11/2013
**VIN:** 1HTJGTKT3EJ498353
**Plant:** GARLAND ASSEMBLY PLANT
**Step:** 60 Revenue Recognized

**Order Date:** 12/13/2012
**Ship Rqst. Date:** 2/15/2013
**Delivery Date:** 3/2/2013

## Shipping Information

| Movement | Destination | At Carrier | Paired | Decked | Dispatched | Delivered |
|---|---|---|---|---|---|---|
| Final | TEXOMA WASTE CONTROL<br>2800 NORTH 1ST STREET<br>DURANT, OK 74701 | | | | | |

## Market/Application/Mission

**Country Of Use:** UNITED STATES
**Market:** USA
**Vehicle Type:** TRUCK
**Application Family:** Refuse

**Application Name:** Roll-On/Roll-off
**GVWR(Calc):** 65480
**GCWR:**
**Start/Grade Ability:** 38.20% / 2.62% @ 55 MPH

## Dimensions

**Wheelbase:** 260.0
**Axle To Frame(AF):** 61.0

**Rear Axle Ratio(s):** 4.10
**Front Axle Ratio(s):**

## Feature Information

| | |
|---|---|
| 0001DAV | FRAME RAILS , High Strength Heat Treated Alloy Steel (120,000 PSI Yield); 12.00" x 3.25" x 0.25" (304.8mm x 82.6mm x 6.35mm); 478.1" (12143mm) Maximum OAL |
| 0001GDL | FRAME REINFORCEMENT , Outer "C" Channel, Heat Treated Alloy Steel (120,000 PSI Yield); 12.65" x 3.50"x 0.25"(321.0mm x 88.9mm x 6.35mm); 445.4" (11313mm) Maximum OAL |
| 0001LBC | BUMPER, FRONT , Multi-piece Stainless Steel |
| 0001WVT | WHEELBASE RANGE , 230" (585cm) Through and Including 285" (725cm) |
| 0001570 | TOW HOOK, FRONT , (2) Frame Mounted |
| 0001652 | CROSSMEMBER, REAR , Relocated to End of Frame |
| 0002ARY | AXLE, FRONT NON-DRIVING , {Meritor MFS-20-133A} Wide Track, I-Beam Type, 20,000-lb Capacity |
| 0003ACS | SUSPENSION, FRONT, SPRING , Multileaf, Shackle Type, Single Stage Spring; 20,000-lb Capacity; Less Shock Absorbers |
| 0004AZA | AIR BRAKE ABS , {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel) |
| 0004EBS | AIR DRYER , {Bendix AD-9} With Heater |
| 0004ETE | BRAKE CHAMBERS, FRONT AXLE , {Haldex} 24 SqIn |
| 0004EVL | BRAKE CHAMBERS, REAR AXLE , {Haldex GC3030LHDHO} 30/30 Spring Brake |
| 0004JBH | BRAKE IDENTITY, FRONT , {Dana Spicer Extended Service} Air, Cam Type, Size 16.5" x 6.0"; Includes Cast Spider, Gusseted Brackets and Severe Service Linings |
| 0004NBH | BRAKE IDENTITY, REAR , {Dana Spicer ES-165-7} Rear, Air, S-Cam Type, Extended Service, Size 16.5" x 7" |
| 0004NDB | BRAKES, REAR, AIR CAM , S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and SpringActuated Parking Brake |
| 0004SPM | AIR COMPRESSOR , {Bendix BA-921 Head Unload} 15.9 CFM Capacity, Single Cylinder |

| | |
|---|---|
| 0004WCC | BRAKE PACKAGE, FRONT , {Dana Spicer ES-165-6} Air, Cam Type, Extended Service; Size 16.5" x 6", Includes Automatic Slack Adjusters |
| 0004WCD | BRAKE PACKAGE, REAR , {Dana Spicer ES-165-7} Air, Cam Type, Extended Service; Size 16.5" x 7", Includes Automatic Slack Adjusters |
| 0004091 | BRAKE SYSTEM, AIR , Dual System for Straight Truck Applications |
| 0004193 | BRAKES, FRONT, AIR CAM , 16.5" x 6", Includes 24 Sqln Long Stroke Brake Chambers |
| 0004732 | DRAIN VALVE , {Berg} Manual; With Pull Chain, for Air Tank |
| 0005PTB | STEERING GEAR , (2) {Sheppard M-100/M-80} Dual Power |
| 0005WBH | STEERING WHEEL , {Caterpillar} 2-Spoke, 18" Diam., Dark Neutral, Leather Wrapped |
| 0005710 | STEERING COLUMN , Tilting and Telescoping |
| 0007BDS | EXHAUST SYSTEM , Single, Vertical Aftertreatment Device Frame Mounted Right Side; Includes Vertical Tail Pipe & Guard |
| 0007WBA | TAIL PIPE , (1) Turnback Type, Bright, for Single Exhaust |
| 0007WBS | MUFFLER/TAIL PIPE GUARD , (1) Bright Stainless Steel |
| 0007WZY | SWITCH, FOR EXHAUST , 2 Position, Lighted & Latching, ON/OFF Type, Mounted in IP, Inhibits Diesel Particulate Filter Regeneration as Long as Switch is in ON Position |
| 0008GGN | ALTERNATOR , {Bosch LH160} Brush Type, 12 Volt 160 Amp. Capacity, Pad Mount |
| 0008HAB | BODY BUILDER WIRING , Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame;Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn |
| 0008MMJ | BATTERY SYSTEM , {Caterpillar} (3) 12 Volt 2130CCA Total |
| 0008RKW | ANTENNA BASE , (2) Single Function, (1) for CB and (1) for Entertainment Radio, Without Splitter, Separate Lead-Ins, With CB Antenna Mounted on Right Mirror and AM/FM Antenna Mounted on Left Mirror |
| 0008RKX | RADIO , Red Display, AM/FM/CD/WB/Clock with Alarm, Front & Rear Aux Input, USB Input, iPod Command and Control, With Multiple Speakers |
| 0008WCK | POWER SOURCE, TERMINAL TYPE , 2-Post |
| 0008WEZ | TURN SIGNAL SWITCH , Self-Canceling |
| 0008WKG | BATTERY BOX , Aluminum With Aluminum Cover, 30" Wide, 2, 3 or 4 Battery Capacity, Mounted Right Side Under Cab |
| 0008WNH | RUNNING LIGHT , (2) Daytime |
| 0008WXG | STARTING MOTOR , {Mitsubishi Electric Automotive America 105P} 12-Volt, with Soft-Start |
| 0008XAH | CIRCUIT BREAKERS , Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All FusesExcept For 5-Amp Fuses |
| 0008000 | ELECTRICAL SYSTEM , 12-Volt, Standard Equipment |
| 0008653 | HORN, AIR , Single, Located Under Cab |
| 0008718 | POWER SOURCE , Cigar Type Receptacle without Plug and Cord |
| 0009ASE | FRONT END , Tilting Composite |
| 0009HAN | INSULATION, UNDER HOOD , for Sound Abatement |
| 0009HBN | INSULATION, SPLASH PANELS , for Sound Abatement |
| 0010UAB | VEHICLE REGISTRATION IDENTITY , ID for US States EXCLUDING: California, Connecticut, Delaware, Georgia, Maine, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania |
| 0010060 | PAINT SCHEMATIC, PT-1 , Single Color, Design 100 |
| 0010210 | LABEL , Emissions, Fuel Economy and Noise. |
| 0010761 | PAINT TYPE , Base Coat/Clear Coat, 1-2 Tone |
| 0010769 | PAINT CLASS , Premium Color |
| 0011MGZ | CLUTCH , {Eaton Fuller Easy-Pedal Advantage} Manual Adjust, Two-Plate, Cast Angle Spring;Ceramic, 15.5" Diameter, 7-Spring Damper, Mechanical Pull-Type Control, 1700 lb-ft Torque Capacity |
| 0011WAE | GREASE FITTINGS , Remote; for Clutch Cross Shaft |
| 0012KWZ | ENGINE, DIESEL , {CT 13} EPA 10, 475 HP @ 1700 RPM, 1700 lb-ft Torque @ 1000 RPM, 2100 RPM Governed Speed, 475 Peak HP (Max) |
| 0012THT | FAN DRIVE , {Horton Drivemaster} Direct Drive Type, Two Speed With Residual Torque Device for Disengaged Fan Speed |
| 0012UBH | RADIATOR , Aluminum; Welded, Front to Back Down Flow System, 1564 Sqln, 1572 Sqln Dual CAC,1293 Sqln 3 Core LTR |
| 0012VBT | AIR CLEANER , Single Element, Heavy Duty |
| 0012VED | FEDERAL EMISSIONS , for 2010; CT 13 Engines |
| 0012WBR | FAN OVERRIDE , Manual; With Electric Switch on Instrument Panel, (Fan On With Switch On) |

| | |
|---|---|
| 0012WCX | HOSE CLAMPS, RADIATOR HOSES , {Gates} Shrink Band Type |
| 0012WEG | COLD STARTING EQUIPMENT , Automatic; With Engine ECM Control |
| 0012WTA | FAN DRIVE SPECIAL EFFECTS , Fan Cooling Ring with Fan Shroud Effects, Engine Mounted |
| 0012WZE | EMISSION COMPLIANCE , Federal, Does Not Comply With California Clean Air Idle Regulations |
| 0012XAN | OBD COMPLIANCE , for 2013 OBD (On Board Diagnostics) |
| 0012864 | BLOCK HEATER, ENGINE , {Phillips} 120 Volt/1500 Watt |
| 0013GHX | TRANSMISSION, MANUAL , {Fuller RTO(F)-16908LL} 10-Speed Manual; Double Lo With Overdrive, Internal LubePump and With Air Shift |
| 0013WGJ | OIL COOLER,MANUAL TRANSMISSION , Water to Oil Type Included in Radiator End Tank (REQUIRES TRANSMISSION LUBE PUMP) |
| 0013WLB | TRANSMISSION OIL , {EmGard 50W} Synthetic; 22 thru 33.99 Pints |
| 0013WVD | PTO CONTROL, DASH MOUNTED , For Customer Provided PTO; Includes Control Valve, Piping and Wiring, Wired forPTO |
| 0014HRL | AXLE, REAR, TANDEM , {Meritor RT-46-160P} Single Reduction, 46,000-lb Capacity, With Lube Pump, WithDriver Controlled Locking Differential in Forward Rear and Rear Rear Axle and 200 Wheel Ends |
| 0014ULY | SUSPENSION, REAR, TANDEM , {Hendrickson HMX-460-54} Walking Beam Type 54" Axle Spacing; 46,000-lb Capacity,With Rubber End Bushings, Transverse Torque Rods, Less Shock Absorbers |
| 0014WAL | SUSPENSION/REAR-AXLE IDENTITY , for Meritor Tandem Rear Axles With Bar-Pin Beam Attachment Type Suspensions |
| 0014WBN | DIFF. SWITCH CONTROLS , Two Independent Switches for Control Traction Differentials on Tandem Rear Axles, Mounted on Dash |
| 0014WLE | AXLE, REAR, LUBE , {EmGard 75W-90} Synthetic Oil; 65 thru 89.99 Pints |
| 0014862 | PDL WARNING BUZZER , Power Divider Lock |
| 0015LKU | FUEL/WATER SEPARATOR , {Racor} Fuel Pre-Filter and Filter Base, Includes Water-In-Fuel Sensor |
| 0015SSK | FUEL TANK , Polished Aluminum, 24" Diam.; 100 U.S. Gal., 378 L Capacity Mounted Left Side Under Cab |
| 0016HBA | GAUGE CLUSTER , English With English Electronic Speedometer |
| 0016HGL | GAUGE, OIL TEMP, REAR AXLE , |
| 0016HKB | GAUGE, MANIFOLD PRESSURE , Data Link Driven; Mounted in Instrument Panel, Includes Controller Module |
| 0016JPD | SEAT, DRIVER , {National 2000 Model 195} Air Suspension, High Back, Vinyl Boxing With Cloth Facing, 2 Arm Rests, Isolator, Adjuster, 3 Chamber Lumbar, 6 Position Front Cushion Adjust, 3 Position Rear Cushion Adj, 2-15 Degree Back Angle Adjust, Vinyl Suspension Cover |
| 0016RAN | SEAT, PASSENGER , {National 2000 Model 192} Non Suspension, High Back, Vinyl Boxing With Cloth Facing, 11 Degree Back Angle Adjust |
| 0016SKU | MIRRORS , (2) {Lang Mekra} Aero; Rectangular, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Heated Heads Thermostat Controlled, Power Both Sides, Amber Lens Clearance Light LED, Black Painted Finish Heads, Brackets & Arms |
| 0016VRT | HEATER, ENHANCED CIRCULATION , {Bergstrom} Control, for Extreme Cold Weather Climates |
| 0016VTH | CAB INTERIOR TRIM , Premium Level; for Caterpillar, Day Cab |
| 0016VZA | WINDOW, REAR , 52.25" Wide |
| 0016WAK | WINDOW, POWER , (2) in Left and Right Doors |
| 0016WJG | CAB DOOR LOCKS , Power |
| 0016WKB | AIR CONDITIONER , {International Blend-Air} With Integral Heater & Defroster |
| 0016WKR | WINDSHIELD , Single Piece |
| 0016WLD | CAB REAR SUSPENSION , {Link Z9079D1} Dual Frame Mounted Cab Rear Air Suspension; Includes Special Crossmember Assembly |
| 0016XWD | SUNSHADE, EXTERIOR , Aerodynamic, Painted Roof Color; Includes Integral Clearance/Marker Lights |
| 0016ZDU | GRAB HANDLE , Exterior; Towel Bar Type In Lieu Of Non-Bright Grab Handles; for use with Cab orCab/Sleeper Non-Bright Access, Without Frame Access or Chassis Skirts |
| 0016000 | FLOOR COVERING , Transmission Cover, Floor Mats and Seal |
| 0016031 | CAB , Conventional |
| 0027DHJ | WHEELS, FRONT , DISC; 22.5" Polished Aluminum, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 12.25 DC Rims; With Steel Hubs |
| 0028DRN | WHEELS, REAR , DUAL DISC; 22.5" Painted Steel, 5 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted,Flanged Nut, Metric Mount, 8.25 DC Rims; With .472" Thick Increased Capacity Disc and Steel Hubs |
| 0029WLA | WHEEL BEARING, FRONT, LUBE , {EmGard 50W} Synthetic Oil |

**Tires**

07382135420 (8) TIRES, REAR 11R22.5 HDC1 (CONTINENTAL) 488 rev/mile, load range H, 16 ply
07792655412 (2) TIRES, FRONT 385/65R22.5 HTC1 (CONTINENTAL) 495 rev/mile, load range L, 20 ply

## Paint

CAB Schematic: 100KT S 9221 light cameo white (Prem)

## Parameters

0012KWZ ENGINE, DIESEL , {CT 13} EPA 10, 475 HP @ 1700 RPM, 1700 lb-ft Torque @ 1000 RPM, 2100 RPM Governed Speed, 475 Peak HP (Max)

| | |
|---|---|
| VS Lim Decrease - Penalty Lvl:7929 | -2 MPH |
| Auxilllary Shutdown Input Type:9931 | 0 |
| AESC Activate at Preset Speed:7528 | 0 |
| AESC Control to Engine Load:7530 | 0 |
| AESC Control w/Auto Start/Stop:7500 | 0 |
| AESC Control:7500 | 0 |
| AESC Force Fan On:9007 | 0 |
| AESC In-cab Operator Interface:7503 | 0 |
| AESC Remote Accel Pedal Enable:7504 | 0 |
| AESC Remote Accel Pedal Switch:8914 | 0 |
| AESC Splitshaft Veh SPD Dsply:9307 | 0 |
| AESC Transfer Case Signal Mode:8910 | 0 |
| Customer Unit Number:6605 | 0 |
| Driver Reward Enable:7918 | 0 |
| Driver Reward Performance Crit:7925 | 0 |
| Gear Down Protection Enable:7714 | 0 |
| Idle Shutdown Mode w/Auto S/S:7400 | 0 |
| Idle Shutdown Mode:7400 | 0 |
| ISD Ambient Temp Override En:7408 | 0 |
| ISD Int Amb Temp Enable:7405 | 0 |
| ISD Latched Driver Override En:7407 | 0 |
| Powertrain Protection Enable:7722 | 0 |
| Preset Remote AESC Input Type:9932 | 0 |
| Progressive Shift Enable:7744 | 0 |
| Service Interval Enable | 0 |
| Torque Limiting in Gear:7717 | 0 |
| Variable Remote AESC Input:9933 | 0 |
| Veh Speed Sensor Antitampering:7905 | 0 |
| Vehicle Over-speed Indicator:7754 | 0 |
| Vehicle Speed Limiter Override:7911 | 0 |
| Fuel Used Service Interval:9501 | 0 GALLONS |
| Engine Hour Service Interval:9502 | 0 HOURS |
| Veh Distance Service Interval:9503 | 0 MILES |
| VS Lim Increase - Expected Lvl:7926 | 0 MPH |
| Idle Spd Adjust - Max Eng Spd:8212 | 0.0 RPM |
| Min Gear Ratio for ProShift:7755 | 0.50 |
| Customer Password:8700 | 00000000 |
| AESC Accel Pedal Mode:7513 | 1 |
| AESC Disable w/ Brake Pedal:7511 | 1 |
| AESC Disable w/ Clutch Pedal:7510 | 1 |
| AESC Park Brake Override:7534 | 1 |
| Cruise Control Enable:7600 | 1 |
| Engine Protection Mode:7700 | 1 |
| Hard Braking Incident Counter:8904 | 1 |
| Idle Speed Adjustment Enable:8215 | 1 |
| Rem Accelerator Position Input:9935 | 1 |

| | |
|---|---|
| Rem Accelerator Switch Input:9929 | 1 |
| VSLO Time Duration Source:7934 | 1 |
| High Gear Ratio Break Point:7743 | 1.595000000 |
| % Idle Time - Excellent Level:7922 | 10 % |
| VSLO Speed Increment:7912 | 10 MPH |
| AESC Ramp Down Rate:7524 | 100.00 RPM/SEC |
| AESC Ramp Up Rate:7507 | 100.00 RPM/SEC |
| AESC Max Engine Load:7519 | 100.0000 % |
| AESC Preset Engine Speed 3:7514 | 1000.0 RPM |
| AESC Preset Engine Speed 4:7515 | 1100.0 RPM |
| AESC Preset Engine Speed 5:7516 | 1200.0 RPM |
| AESC Preset Engine Speed 6:7517 | 1300.0 RPM |
| VSS Anti-Tamper Max Eng Speed:7901 | 1308.3 RPM |
| ISD Int Amb Temp Override:7406 | 15.0 C |
| ISD Time w/Park Brk Released:7401 | 15.0 MIN |
| ISD Max Engine Coolant Temp:7412 | 150.0 C |
| AESC Eng Spd Limit w/VSS Fault:7518 | 1500 RPM |
| AESC Max Eng Spd w/AutoStart/S:7508 | 1500.0 RPM |
| AESC Max Engine Speed:7508 | 1500.0 RPM |
| Low Gear Engine Speed Limit:7738 | 1550.0 RPM |
| ISD Min Engine Coolant Temp:7413 | 16.0 C |
| High Gear Engine Speed Limit:7739 | 1600.0 RPM |
| Max Torque in High Gear Range:7751 | 1700.0000 LB-FT |
| Max Torque in Int. Gear Range:7750 | 1700.0000 LB-FT |
| Max Torque in Low Gear Range:7713 | 1700.0000 LB-FT |
| Max Torque w/o Vehicle Speed:7712 | 1700.0000 LB-FT |
| % Idle Time - Good Level:7923 | 18 % |
| AESC Accel Max Eng Spd Ovrd:7520 | 1900.0 RPM |
| AESC In-cab Mode:7502 | 2 |
| AESC Incab Mode w/Auto Start/S:7502 | 2 |
| Driver Reward Mode:7930 | 2 |
| Highest Gear of Low Range:7718 | 2 |
| VS Lim Increase - Good Lvl:7927 | 2 MPH |
| Highest Gear Rat of High Range:7747 | 2.00 |
| ISD Max Ambient Temp Override:7402 | 20.0 C |
| High Gear Engine Speed Range:7741 | 200.0 RPM |
| Low Gear Engine Speed Range:7740 | 200.0 RPM |
| Maximum Standstill Eng Speed:7753 | 2100.0 RPM |
| % Idle Time - Expected Level:7924 | 25 % |
| Idle Spd Adjust Ramp Rate:8211 | 25 RPM/SEC |
| AESC Bump Up/Down Step:7525 | 25.0 RPM |
| CC Min Vehicle Speed:7603 | 25.0000 MPH |
| VSLO Maximum Activation Time:7914 | 30 MIN |
| Top Gr Minus 2 Light Ld VS Lim:7715 | 33 MPH |
| Top Gr Minus 2 Heavy Ld VS Lim:7735 | 36 MPH |
| Highest Gear of Int. Range:7748 | 4 |
| VS Lim Increase - Excel Lvl:7928 | 4 MPH |
| Highest Gear Rat of Int. Range:7746 | 4.00 |
| Top Gr Minus 1 Light Ld VS Lim:7716 | 45 MPH |
| AESC Max Mobile Veh Spd:7501 | 5 MPH |
| ISD Min Ambient Temp Override:7403 | 5.0 C |
| ISD Time w/Park Brake Set:7404 | 5.0 MIN |
| Idle Spd Adjust - Bump Step:8216 | 5.0 RPM |
| AESC Vehicle Speed Limit:7521 | 5.0000 MPH |
| Low Gear Ratio Break Point:7742 | 5.435000000 |
| Top Gr Minus 1 Heavy Ld VS Lim:7736 | 50 MPH |
| Highest Gear of High Range:7749 | 6 |

| | |
|---|---|
| Highest Gear Rat of Low Range:7745 | 6.00 |
| Fuel Economy - Expected Level:7921 | 6.00 MPG |
| Fuel Economy - Good Level:7920 | 6.25 MPG |
| Fuel Economy - Excellent Level:7919 | 6.40 MPG |
| AESC Min Engine Speed:7522 | 600.0 RPM |
| Idle Engine Speed:8202 | 600.0 RPM |
| Hard Braking Decel Threshold:8905 | 7.40 MPH/SEC |
| AESC Max Engine Load Time:7527 | 8 SEC |
| VSLO Time Interval to Reset:7915 | 8.0 HOURS |
| ISD Idle Shutdown Max Eng Trq:7409 | 80 % |
| CC Max Vehicle Speed:7604 | 80 MPH |
| Max Accelerator Vehicle Speed:7902 | 80 MPH |
| AESC Preset Engine Speed 1:7505 | 800.0 RPM |
| Veh Overspd Threshold Level 1:7723 | 85.000000 MPH |
| Veh Overspd Threshold Level 2:7724 | 87.000000 MPH |
| Service Soon Percent to Notify:9507 | 90 % |
| AESC Preset Engine Speed 2:7506 | 900.0 RPM |

# ORDER CONTENT

Print Date : 3/11/2013 10:21

**HOLT TEXAS LTD.** **Job Number : 498353**

## Summary Of Changes Since Original Order

| Modified | Action | Item Changed | Description |
|---|---|---|---|
| 1/3/2013 | CHG | Slot Date | **OLD:** 02-14-2013 **NEW:** 02-13-2013 |
| 1/3/2013 | CHG | Slot Date | **OLD:** 02-13-2013 **NEW:** 02-11-2013 |
| 12/20/2012 | CHG | Step 21 | 21-Fully Coded |
| 12/17/2012 | CHG | Slot Date | **OLD:** 02-12-2013 **NEW:** 02-13-2013 |
| 12/17/2012 | CHG | Slot Date | **OLD:** 02-13-2013 **NEW:** 02-14-2013 |
| 12/14/2012 | ADD | Feature | 0004JBH - BRAKE IDENTITY, FRONT , {Dana Spicer Extended Service} Air, Cam Type, Size 16.5" x 6.0"; Includes Cast Spider, Gusseted Brackets and Severe Service Linings |
| 12/14/2012 | ADD | Feature | 0004NBH - BRAKE IDENTITY, REAR , {Dana Spicer ES-165-7} Rear, Air, S-Cam Type, Extended Service, Size 16.5" x 7" |
| 12/14/2012 | ADD | Feature | 0010000 - |
| 12/14/2012 | ADD | Feature | 0010210 - LABEL , Emissions, Fuel Economy and Noise. |
| 12/14/2012 | ADD | Feature | 0016000 - FLOOR COVERING , Transmission Cover, Floor Mats and Seal |
| 12/14/2012 | CHG | Slot Date | **OLD:** **NEW:** 02-20-2013 |
| 12/14/2012 | CHG | Slot Date | **OLD:** 02-20-2013 **NEW:** 02-14-2013 |
| 12/14/2012 | CHG | Slot Date | **OLD:** 02-14-2013 **NEW:** 02-13-2013 |
| 12/14/2012 | CHG | Slot Date | **OLD:** 02-13-2013 **NEW:** 02-12-2013 |
| 12/14/2012 | CHG | Slot Year/Week | **OLD:** 1357 **NEW:** 1309 |
| 12/14/2012 | CHG | Slot Year/Week | **OLD:** 1309 **NEW:** 1308 |
| 12/14/2012 | ADD | Tires | 0427DTP0520 (1) - PROPSHAFT |
| 12/14/2012 | ADD | Tires | 0429DTC0930 (1) - PROPSHAFT |
| 12/14/2012 | ADD | Tires | 0429DTC1100 (1) - PROPSHAFT |
| 12/14/2012 | ADD | Tires | 0429DTM1585 (1) - PROPSHAFT |

CATERPILLAR®



-12/13/2012

proposal #368-2 # 2

**Dealer / Office**

HOLT TEXAS LTD.
PO Box 207916
78220-7916

Phone : (1)(210)648-1111

e-mail : Mark.Mims@Holtcat.com

**Contact Info**

**Truck Quotation**

TOPS Unsubmitted Order Reference No. 000656
Number/Date
20046436 / 12/13/2012
Delivery date
Day 02/15/2013
Customer#
E140
Validity period
12/13/2012 To 06/11/2013
Issue Status
Started
Market Segment
Truck
Subsidiary
Cat U.S. Voc Truck

External Notes :
Due to standard engineering changes, a quote may be invalidated at anytime. Should this occur, a new un-submitted order and quote will need to be generated. Also note that a quote can only be ordered one time, with a quantity of 1. After order submission, the quote will be expired. A new un-submitted order and quote will need to be generated to createanother order. Pricing may not be final if an "Order by Description/SpecialQuote" feature is desired. Order price is determined based on the price effective at the date of order creation.

Internal Notes :
Factory Notes :
SQ Notes :
Net Price :
Est. Shipping Weight :

| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|

CATERPILLAR®

Doc. no./Date
20046436 / 12/13/2012
Internal Use Only Custom Quote


**Dealer / Office**

HOLT TEXAS LTD.
PO Box 207916
78220-7916

Phone : (1)(210)648-1111

e-mail : Mark.Mims@Holtcat.com

| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| 100 | I | 1 | CF7AA | CT660 SBA 116" BBC 6X4 AXLE | | | |
| | I | 1 | 0001570_I | HOOK AR-TOW (0001570) | | 372.38 | |
| | I | 1 | 0001652_I | CROSSMEMBER AR (0001652) | | 234.14 | |
| | I | 1 | 0001DAV_I | FRAME AR-RAILS (0001DAV) | | 219.73- | |
| | I | 1 | 0001GDL_I | FRAME AR-REINF (0001GDL) | | 1,912.60 | |
| | I | 1 | 0001LBC_I | BUMPER AR-FRONT (0001LBC) | | V/I | |
| | I | 1 | 0001WVT_I | WHEELBASE AR (0001WVT) | | 1,090.23 | |
| | I | 1 | 0002ARY_I | AXLE AR-FRONT (0002ARY) | | 2,105.21 | |
| | I | 1 | 0003ACS_I | SUSPENSION AR-FR (0003ACS) | | 207.83 | |
| | I | 1 | 0004091_I | BRAKE AR-AIR SYS (0004091) | | V/I | |
| | I | 1 | 0004193_I | BRAKE AR-AIR FR (0004193) | | V/I | |
| | I | 1 | 0004732_I | DRAIN AR-VALVE (0004732) | | V/I | |
| | I | 1 | 0004AZA_I | BRAKE AR-ABS (0004AZA) | | V/I | |
| | I | 1 | 0004EBS_I | DRYER AR-AIR HTR (0004EBS) | | V/I | |
| | I | 1 | 0004ETE_I | BRAKE AR-CHAMBER (0004ETE) | | 11.65 | |
| | I | 1 | 0004EVL_I | BRAKE AR-CHAMBER (0004EVL) | | V/I | |
| | I | 1 | 0004NDB_I | BRAKE AR-AIR RR (0004NDB) | | V/I | |
| | I | 1 | 0004SPM_I | COMPR AR-AIR (0004SPM) | | V/I | |
| | I | 1 | 0004WCC_I | BRAKE AR-FRT PKG (0004WCC) | | 335.72 | |
| | I | 1 | 0004WCD_I | BRAKE AR-RR PKG (0004WCD) | | 574.70 | |
| | I | 1 | CF7AA00_I | SBA 116' BBC 6X4 AXLE | | 128,499.65 | |
| | I | 1 | PRODLNK_I | PRODUCT LINK | | V/I | |
| | I | 1 | 0005710_I | STEERING AR-COL (0005710) | | V/I | |
| | I | 1 | 0005PTB_I | STEERING AR-GEAR (0005PTB) | | 1,047.23 | |
| | I | 1 | 0005WBH_I | STEERING AR-WHEEL (0005WBH) | | V/I | |
| | I | 1 | 0007BDS_I | EXHAUST AR-SYS (0007BDS) | | V/I | |
| | I | 1 | 0007WBA_I | PIPE AR-TAIL (0007WBA) | | 84.21 | |
| | I | 1 | 0007WBS_I | MUFFLER AR-TAIL PP (0007WBS) | | 119.15 | |
| | I | 1 | 0007WZY_I | SWITCH AR-EXH (0007WZY) | | 42.57 | |
| | I | 1 | 0008000_I | ELECTRICAL AR (0008000) | | V/I | |
| | I | 1 | 0008653_I | HORN AR-AIR (0008653) | | V/I | |
| | I | 1 | 0008718_I | POWER AR-SOURCE (0008718) | | V/I | |
| | I | 1 | 0008GGN_I | ALTERNATOR AR (0008GGN) | | V/I | |
| | I | 1 | 0008HAB_I | WIRING AR-BODY (0008HAB) | | 82.24 | |
| | I | 1 | 0008MMJ_I | BATTERY AR (0008MMJ) | | V/I | |
| | I | 1 | 0008RKW_I | ANTENNA AR-BASE (0008RKW) | | V/I | |
| | I | 1 | 0008RKX_I | RADIO AR (0008RKX) | | 167.52 | |
| | I | 1 | 0008WCK_I | POWER AR-SOURCE (0008WCK) | | V/I | |
| | I | 1 | 0008WEZ_I | SWITCH AR-TURN (0008WEZ) | | V/I | |
| | I | 1 | 0008WKG_I | BOX AR-BATTERY (0008WKG) | | V/I | |
| | I | 1 | 0008WNH_I | LIGHT AR (0008WNH) | | V/I | |

CATERPILLAR®

Doc. no./Date
20046436 / 12/13/2012
Internal Use Only Custom Quote


**Dealer / Office**

HOLT TEXAS LTD.
PO Box 207916
78220-7916

Phone : (1)(210)648-1111

e-mail : Mark.Mims@Holtcat.com

| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| | I | 1 | 0008WXG_I | MOTOR AR-STG (0008WXG) | | V/I | |
| | I | 1 | 0008XAH_I | CIRCUIT AR-BRKR (0008XAH) | | 88.69 | |
| | I | 1 | 0009HBN_I | INSULN AR-PANEL (0009HBN) | | 65.36 | |
| | I | 1 | 0010060_I | PAINT AR-SCHEMATIC (0010060) | | V/I | |
| | I | 1 | 0010761_I | PAINT AR-TYPE (0010761) | | V/I | |
| | I | 1 | 0010769_I | PAINT AR-CLASS (0010769) | | 203.18 | |
| | I | 1 | 0010UAB_I | REGISTRATION AR(0010UAB) | | V/I | |
| | I | 1 | 0011MGZ_I | CLUTCH AR (0011MGZ) | | V/I | |
| | I | 1 | 0011WAE_I | FITTING AR (0011WAE) | | 29.99 | |
| | I | 1 | 0012864_I | ENGINE AR-BLK (0012864) | | 86.11 | |
| | I | 1 | 0012KWZ_I | ENGINE AR-DIESEL (0012KWZ) | | 3,092.42 | |
| | I | 1 | 0012THT_I | FAN AR-DRIVE (0012THT) | | V/I | |
| | I | 1 | 0012UBH_I | RADIATOR - ALUMINUM (0012UBH) | | V/I | |
| | I | 1 | 0012VBT_I | FITTING AR (0012VBT) | | V/I | |
| | I | 1 | 0012WBR_I | FAN AR-OVERRIDE (0012WBR) | | 28.06 | |
| | I | 1 | 0012WCX_I | HOSE AR-CLAMP (0012WCX) | | 29.99 | |
| | I | 1 | 0012WEG_I | EQUIPMENT AR (0012WEG) | | V/I | |
| | I | 1 | 0012WTA_I | FAN AR-DRIVE (0012WTA) | | V/I | |
| | I | 1 | 0009ASE_I | END AR-FRONT (0009ASE) | | V/I | |
| | I | 1 | 0009HAN_I | INSULN AR-HOOD (0009HAN) | | 143.62 | |
| | I | 1 | 0013GHX_I | XMSN AR-MANUAL (0013GHX) | | 2,131.08 | |
| | I | 1 | 0013WGJ_I | XMSN AR-MANUAL (0013WGJ) | | 211.88 | |
| | I | 1 | 0013WLB_I | XMSN AR-OIL (0013WLB) | | 101.23 | |
| | I | 1 | 0013WVD_I | CONTROL AR-PTO (0013WVD) | | 53.75 | |
| | I | 1 | 0014862_I | BUZZER AR-WRN (0014862) | | 26.88 | |
| | I | 1 | 0014HRL_I | AXLE AR-REAR (0014HRL) | | 5,421.58 | |
| | I | 1 | 0014ULY_I | SUSPENSION AR-RR (0014ULY) | | 566.17 | |
| | I | 1 | 0014WAL_I | SUSPENSION AR-RR (0014WAL) | | 171.10 | |
| | I | 1 | 0014WBN_I | CONT AR-DIFF SW (0014WBN) | | 256.39 | |
| | I | 1 | 0014WLE_I | AXLE AR-RR LUB (0014WLE) | | 203.82 | |
| | I | 1 | 0015LKU_I | FILTER AR-FUEL (0015LKU) | | V/I | |
| | I | 1 | 0015SSK_I | TANK AR-FUEL (0015SSK) | | 878.81 | |
| | I | 1 | 0016031_I | CAB AR (0016031) | | V/I | |
| | I | 1 | 0016HBA_I | GAUGE AR-CLUSTER (0016HBA) | | V/I | |
| | I | 1 | 0016HGL_I | GAUGE AR-TEMP (0016HGL) | | 85.14 | |
| | I | 1 | 0016HKB_I | GAUGE AR-MANF (0016HKB) | | 83.42 | |
| | I | 1 | 0016JPD_I | SEAT AR-DRIVER (0016JPD) | | 99.76 | |
| | I | 1 | 0016RAN_I | SEAT AR (0016RAN) | | 499.88 | |
| | I | 1 | 0016SKU_I | MIRROR AR (0016SKU) | | 43.00 | |
| | I | 1 | 0016VRT_I | HEATER AR (0016VRT) | | V/I | |
| | I | 1 | 0016VTH_I | CAB AR-INTERIOR (0016VTH) | | V/I | |

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78220-7916

Phone : (1)(210)648-1111

e-mail : Mark.Mims@Holtcat.com

| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| | I | 1 | 0016VZA_I | WINDOW AR-REAR (0016VZA) | | V/I | |
| | I | 1 | 0016WAK_I | WINDOW AR-POWER (0016WAK) | | V/I | |
| | I | 1 | 0016WJG_I | CAB AR-LK (DOOR) (0016WJG) | | V/I | |
| | I | 1 | 0016WKB_I | AIR CONDR AR (0016WKB) | | V/I | |
| | I | 1 | 0016WKR_I | WINDSHIELD AR (0016WKR) | | V/I | |
| | I | 1 | 0016WLD_I | CAB AR-SUSP (RR) (0016WLD) | | V/I | |
| | I | 1 | 0016XWD_I | SUNSHADE AR (0016XWD) | | V/I | |
| | I | 1 | 0016ZDU_I | HANDLE AR-GRAB (0016ZDU) | | 29.03 | |
| | I | 1 | 0027DHJ_I | WHEEL AR-FRONT (0027DHJ) | | 840.29 | |
| | I | 1 | 0028DRN_I | WHEEL AR-REAR (0028DRN) | | 397.32 | |
| | I | 1 | 0029WLA_I | BEARING AR-WHL (0029WLA) | | 21.50 | |
| | I | 1 | 0012VED_I | EMISSION AR-FED (0012VED) | | | 8,000.00 — NON-DISC |
| | I | 1 | 0012WZE_I | EMISSION AR (0012WZE) | | | V/I |
| | I | 1 | 0012XAN_I | COMPLIANCE AR(0012XAN) | | | 650.00 — NON DISC |

With the following configuration:

| | |
|---|---|
| Cat CT660 North American Truck | HOOK AR-TOW (0001570) |
| Cat CT660 North American Truck | CROSSMEMBER AR (0001652) |
| Cat CT660 North American Truck | FRAME AR-RAILS (0001DAV) |
| Cat CT660 North American Truck | FRAME AR-REINF (0001GDL) |
| Cat CT660 North American Truck | BUMPER AR-FRONT (0001LBC) |
| Cat CT660 North American Truck | WHEELBASE AR (0001WVT) |
| Cat CT660 North American Truck | AXLE AR-FRONT (0002ARY) |
| Cat CT660 North American Truck | SUSPENSION AR-FR (0003ACS) |
| Cat CT660 North American Truck | BRAKE AR-AIR SYS (0004091) |
| Cat CT660 North American Truck | BRAKE AR-AIR FR (0004193) |
| Cat CT660 North American Truck | DRAIN AR-VALVE (0004732) |
| Cat CT660 North American Truck | BRAKE AR-ABS (0004AZA) |
| Cat CT660 North American Truck | DRYER AR-AIR HTR (0004EBS) |
| Cat CT660 North American Truck | BRAKE AR-CHAMBER (0004ETE) |
| Cat CT660 North American Truck | BRAKE AR-CHAMBER (0004EVL) |
| Cat CT660 North American Truck | BRAKE AR-AIR RR (0004NDB) |
| Cat CT660 North American Truck | COMPR AR-AIR (0004SPM) |
| Cat CT660 North American Truck | BRAKE AR-FRT PKG (0004WCC) |
| Cat CT660 North American Truck | BRAKE AR-RR PKG (0004WCD) |
| Cat CT660 North American Truck | STEERING AR-COL (0005710) |
| Cat CT660 North American Truck | STEERING AR-GEAR (0005PTB) |
| Cat CT660 North American Truck | STEERING AR-WHEEL (0005WBH) |
| Cat CT660 North American Truck | EXHAUST AR-SYS (0007BDS) |
| Cat CT660 North American Truck | PIPE AR-TAIL (0007WBA) |
| Cat CT660 North American Truck | MUFFLER AR-TAIL PP (0007WBS) |
| Cat CT660 North American Truck | SWITCH AR-EXH (0007WZY) |

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| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| | | | Cat CT660 North American Truck | ELECTRICAL AR (0008000) | | | |
| | | | Cat CT660 North American Truck | HORN AR-AIR (0008653) | | | |
| | | | Cat CT660 North American Truck | POWER AR-SOURCE (0008718) | | | |
| | | | Cat CT660 North American Truck | ALTERNATOR AR (0008GGN) | | | |
| | | | Cat CT660 North American Truck | WIRING AR-BODY (0008HAB) | | | |
| | | | Cat CT660 North American Truck | BATTERY AR (0008MMJ) | | | |
| | | | Cat CT660 North American Truck | ANTENNA AR-BASE (0008RKW) | | | |
| | | | Cat CT660 North American Truck | RADIO AR (0008RKX) | | | |
| | | | Cat CT660 North American Truck | POWER AR-SOURCE (0008WCK) | | | |
| | | | Cat CT660 North American Truck | SWITCH AR-TURN (0008WEZ) | | | |
| | | | Cat CT660 North American Truck | BOX AR-BATTERY (0008WKG) | | | |
| | | | Cat CT660 North American Truck | LIGHT AR (0008WNH) | | | |
| | | | Cat CT660 North American Truck | MOTOR AR-STG (0008WXG) | | | |
| | | | Cat CT660 North American Truck | CIRCUIT AR-BRKR (0008XAH) | | | |
| | | | Cat CT660 North American Truck | END AR-FRONT (0009ASE) | | | |
| | | | Cat CT660 North American Truck | INSULN AR-HOOD (0009HAN) | | | |
| | | | Cat CT660 North American Truck | INSULN AR-PANEL (0009HBN) | | | |
| | | | Cat CT660 North American Truck | PAINT AR-SCHEMATIC (0010060) | | | |
| | | | Cat CT660 North American Truck | PAINT AR-TYPE (0010761) | | | |
| | | | Cat CT660 North American Truck | PAINT AR-CLASS (0010769) | | | |
| | | | Cat CT660 North American Truck | REGISTRATION AR(0010UAB) | | | |
| | | | Cat CT660 North American Truck | CLUTCH AR (0011MGZ) | | | |
| | | | Cat CT660 North American Truck | FITTING AR (0011WAE) | | | |
| | | | Cat CT660 North American Truck | ENGINE AR-BLK (0012864) | | | |
| | | | Cat CT660 North American Truck | ENGINE AR-DIESEL (0012KWZ) | | | |
| | | | Cat CT660 North American Truck | FAN AR-DRIVE (0012THT) | | | |
| | | | Cat CT660 North American Truck | RADIATOR - ALUMINUM (0012UBH) | | | |
| | | | Cat CT660 North American Truck | FITTING AR (0012VBT) | | | |
| | | | Cat CT660 North American Truck | EMISSION AR-FED (0012VED) | | | |
| | | | Cat CT660 North American Truck | FAN AR-OVERRIDE (0012WBR) | | | |
| | | | Cat CT660 North American Truck | HOSE AR-CLAMP (0012WCX) | | | |
| | | | Cat CT660 North American Truck | EQUIPMENT AR (0012WEG) | | | |
| | | | Cat CT660 North American Truck | FAN AR-DRIVE (0012WTA) | | | |
| | | | Cat CT660 North American Truck | EMISSION AR (0012WZE) | | | |
| | | | Cat CT660 North American Truck | COMPLIANCE AR(0012XAN) | | | |
| | | | Cat CT660 North American Truck | XMSN AR-MANUAL (0013GHX) | | | |
| | | | Cat CT660 North American Truck | XMSN AR-MANUAL (0013WGJ) | | | |
| | | | Cat CT660 North American Truck | XMSN AR-OIL (0013WLB) | | | |
| | | | Cat CT660 North American Truck | CONTROL AR-PTO (0013WVD) | | | |
| | | | Cat CT660 North American Truck | BUZZER AR-WRN (0014862) | | | |
| | | | Cat CT660 North American Truck | AXLE AR-REAR (0014HRL) | | | |

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| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| | | | | Cat CT660 North American Truck | SUSPENSION AR-RR (0014ULY) | | |
| | | | | Cat CT660 North American Truck | SUSPENSION AR-RR (0014WAL) | | |
| | | | | Cat CT660 North American Truck | CONT AR-DIFF SW (0014WBN) | | |
| | | | | Cat CT660 North American Truck | AXLE AR-RR LUB (0014WLE) | | |
| | | | | Cat CT660 North American Truck | FILTER AR-FUEL (0015LKU) | | |
| | | | | Cat CT660 North American Truck | TANK AR-FUEL (0015SSK) | | |
| | | | | Cat CT660 North American Truck | CAB AR (0016031) | | |
| | | | | Cat CT660 North American Truck | GAUGE AR-CLUSTER (0016HBA) | | |
| | | | | Cat CT660 North American Truck | GAUGE AR-TEMP (0016HGL) | | |
| | | | | Cat CT660 North American Truck | GAUGE AR-MANF (0016HKB) | | |
| | | | | Cat CT660 North American Truck | SEAT AR-DRIVER (0016JPD) | | |
| | | | | Cat CT660 North American Truck | SEAT AR (0016RAN) | | |
| | | | | Cat CT660 North American Truck | MIRROR AR (0016SKU) | | |
| | | | | Cat CT660 North American Truck | HEATER AR (0016VRT) | | |
| | | | | Cat CT660 North American Truck | CAB AR-INTERIOR (0016VTH) | | |
| | | | | Cat CT660 North American Truck | WINDOW AR-REAR (0016VZA) | | |
| | | | | Cat CT660 North American Truck | WINDOW AR-POWER (0016WAK) | | |
| | | | | Cat CT660 North American Truck | CAB AR-LK (DOOR) (0016WJG) | | |
| | | | | Cat CT660 North American Truck | AIR CONDR AR (0016WKB) | | |
| | | | | Cat CT660 North American Truck | WINDSHIELD AR (0016WKR) | | |
| | | | | Cat CT660 North American Truck | CAB AR-SUSP (RR) (0016WLD) | | |
| | | | | Cat CT660 North American Truck | SUNSHADE AR (0016XWD) | | |
| | | | | Cat CT660 North American Truck | HANDLE AR-GRAB (0016ZDU) | | |
| | | | | Cat CT660 North American Truck | WHEEL AR-FRONT (0027DHJ) | | |
| | | | | Cat CT660 North American Truck | WHEEL AR-REAR (0028DRN) | | |
| | | | | Cat CT660 North American Truck | BEARING AR-WHL (0029WLA) | | |
| | | | | Distribution channel | C1 | | |
| | | | | MATERIAL NUMBER | CF7AA | | |
| | | | | CT660 NAT BASE CHASSIS | SBA 116' BBC 6X4 AXLE | | |
| | | | | Sales organization | M901 | | |
| | | | | PRODUCT LINK | PRODUCT LINK | | |
| | | | | Sub-items 101 to 196 belong to item 100 | | | |
| 101 | I | | 1 3763214 | CF7AA - BASE CHASSIS | | | |
| 102 | I | | 1 3963796 | REGISTRATION AR | | | |
| 103 | I | | 1 4308958 | COMPLIANCE AR | | | |
| 104 | I | | 1 4308959 | WHEEL AR-FR DISC | | | |
| 105 | I | | 1 3730922 | AIR CONDR AR | | | |
| 106 | I | | 1 3729961 | ALTERNATOR AR | | | |
| 107 | I | | 1 3729968 | ANTENNA AR-BASE | | | |
| 108 | I | | 1 3727738 | AXLE AR-FRONT | | | |
| 109 | I | | 1 3730821 | AXLE AR-REAR | | | |

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| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| 110 | I | 1 | 3729970 | BATTERY AR | | | |
| 111 | I | 1 | 3731020 | BEARING AR-WHL | | | |
| 112 | I | 1 | 3729975 | BOX AR-BATTERY | | | |
| 113 | I | 1 | 3727753 | BRAKE AR-ABS | | | |
| 114 | I | 1 | 3736665 | BRAKE AR-AIR RR | | | |
| 115 | I | 1 | 3736663 | BRAKE AR-AIR SYS | | | |
| 116 | I | 1 | 3728706 | BRAKE AR-CHAMBER | | | |
| 117 | I | 1 | 3728711 | BRAKE AR-CHAMBER | | | |
| 118 | I | 1 | 3714526 | BUMPER AR-FRONT | | | |
| 119 | I | 1 | 3730924 | CAB AR | | | |
| 120 | I | 1 | 3730927 | CAB AR-INTERIOR | | | |
| 121 | I | 1 | 3730925 | CAB AR-LK (DOOR) | | | |
| 122 | I | 1 | 3730928 | CAB AR-SUSP (RR) | | | |
| 123 | I | 1 | 3730544 | CIRCUIT AR-BRKR | | | |
| 124 | I | 1 | 3736655 | COMPR AR-AIR | | | |
| 125 | I | 1 | 3730711 | CONTROL AR-PTO | | | |
| 126 | I | 1 | 3722817 | CROSSMEMBER AR | | | |
| 127 | I | 1 | 3728756 | DRAIN AR-VALVE | | | |
| 128 | I | 1 | 3736657 | DRYER AR-AIR HTR | | | |
| 129 | I | 1 | 3730546 | ELECTRICAL AR | | | |
| 130 | I | 1 | 3730679 | EMISSION AR | | | |
| 131 | I | 1 | 3730578 | END AR-FRONT | | | |
| 132 | I | 1 | 3730673 | ENGINE AR-BLK | | | |
| 133 | I | 1 | 3730697 | RADIATOR - ALUMINUM | | | |
| 134 | I | 1 | 3730676 | EQUIPMENT AR | | | |
| 135 | I | 1 | 3729942 | EXHAUST AR-SYS | | | |
| 136 | I | 1 | 3730689 | FAN AR-DRIVE | | | |
| 137 | I | 1 | 3730690 | FAN AR-DRIVE | | | |
| 138 | I | 1 | 3730691 | FAN AR-OVERRIDE | | | |
| 139 | I | 1 | 3730913 | FILTER AR-FUEL | | | |
| 140 | I | 1 | 3730670 | FITTING AR | | | |
| 141 | I | 1 | 3730671 | FITTING AR | | | |
| 142 | I | 1 | 3727719 | FRAME AR-RAILS | | | |
| 143 | I | 1 | 3727725 | FRAME AR-REINF | | | |
| 144 | I | 1 | 3730933 | GAUGE AR-CLUSTER | | | |
| 145 | I | 1 | 3730938 | GAUGE AR-MANF | | | |
| 146 | I | 1 | 3730939 | GAUGE AR-TEMP | | | |
| 147 | I | 1 | 3730941 | HANDLE AR-GRAB | | | |
| 148 | I | 1 | 3730945 | HEATER AR | | | |
| 149 | I | 1 | 3727728 | HOOK AR-TOW | | | |
| 150 | I | 1 | 3730548 | HORN AR-AIR | | | |

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| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| 151 | I | 1 | 3730695 | HOSE AR-CLAMP | | | |
| 152 | I | 1 | 3730580 | INSULN AR-HOOD | | | |
| 153 | I | 1 | 3730579 | INSULN AR-PANEL | | | |
| 154 | I | 1 | 3730562 | LIGHT AR | | | |
| 155 | I | 1 | 3730952 | MIRROR AR | | | |
| 156 | I | 1 | 3730567 | MOTOR AR-STG | | | |
| 157 | I | 1 | 3729946 | MUFFLER AR-TAIL PP | | | |
| 158 | I | 1 | 3730623 | PAINT AR-CLASS | | | |
| 159 | I | 1 | 3730634 | PAINT AR-SCHEMATIC | | | |
| 160 | I | 1 | 3730636 | PAINT AR-TYPE | | | |
| 161 | I | 1 | 3729956 | PIPE AR-TAIL | | | |
| 162 | I | 1 | 3730556 | POWER AR-SOURCE | | | |
| 163 | I | 1 | 3730557 | POWER AR-SOURCE | | | |
| 164 | I | 1 | 3730559 | RADIO AR | | | |
| 165 | I | 1 | 3730962 | SEAT AR | | | |
| 166 | I | 1 | 3730955 | SEAT AR-DRIVER | | | |
| 167 | I | 1 | 3728799 | STEERING AR-COL | | | |
| 168 | I | 1 | 3728801 | STEERING AR-GEAR | | | |
| 169 | I | 1 | 3728802 | STEERING AR-WHEEL | | | |
| 170 | I | 1 | 3730964 | SUNSHADE AR | | | |
| 171 | I | 1 | 3727747 | SUSPENSION AR-FR | | | |
| 172 | I | 1 | 3730877 | SUSPENSION AR-RR | | | |
| 173 | I | 1 | 3730862 | SUSPENSION AR-RR | | | |
| 174 | I | 1 | 3729951 | SWITCH AR-EXH | | | |
| 175 | I | 1 | 3730576 | SWITCH AR-TURN | | | |
| 176 | I | 1 | 3730900 | TANK AR-FUEL | | | |
| 177 | I | 1 | 3730971 | WHEEL AR-FRONT | | | |
| 178 | I | 1 | 3730998 | WHEEL AR-REAR | | | |
| 179 | I | 1 | 3730966 | WINDOW AR-POWER | | | |
| 180 | I | 1 | 3730967 | WINDOW AR-REAR | | | |
| 181 | I | 1 | 3730968 | WINDSHIELD AR | | | |
| 182 | I | 1 | 3730542 | WIRING AR-BODY | | | |
| 183 | I | 1 | 3730710 | XMSN AR-MANUAL | | | |
| 184 | I | 1 | 3730746 | XMSN AR-MANUAL | | | |
| 185 | I | 1 | 3730717 | XMSN AR-OIL | | | |
| 186 | I | 1 | 3768874 | CLUTCH AR | | | |
| 187 | I | 1 | 3746726 | BRAKE AR-AIR FR | | | |
| 188 | I | 1 | 3788407 | ENGINE AR-DIESEL | | | |
| 189 | I | 1 | 3788408 | EMISSION AR-FED | | | |
| 190 | I | 1 | 3788412 | BRAKE AR-FRT PKG | | | |
| 191 | I | 1 | 3788413 | BRAKE AR-RR PKG | | | |

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| ITEM | AI | QTY | MATERIAL | DESCRIPTION | L/N | LIST PRICE | NET PRICE |
|---|---|---|---|---|---|---|---|
| 192 | I | 1 | 3788416 | CONT AR-DIFF SW | | | |
| 193 | I | 1 | 3788417 | AXLE AR-RR LUB | | | |
| 194 | I | 1 | 3789189 | WHEELBASE AR | | | |
| 195 | I | 1 | 3789240 | BUZZER AR-WRN | | | |
| 196 | I | 1 | 3779503 | CONTROL GP | | | |
| 200 | I | 2 | 0V5120 | TIRE - FRONT:7792655412_I | | 14.04- | |
| 300 | I | 8 | 0V5121 | TIRE - REAR:7382135420_I | | 2,123.04 | |
| 400 | I | 1 | 0V5125 | COMMODITIES SURCHARGE | | | |
| 500 | I | 1 | 0V5063 | STANDARD FREIGHT CHARGE | | | 1,925.00 NON-DISC |
| 600 | I | 1 | 0V3948 | END USE: NA VOCATIONAL TRUCK | | | |
| 700 | I | 1 | 0V5036 | ROLL-ON/ROLL-OFF | | | |

| | | |
|---|---|---|
| Tops Discount | 154,665.75 | 0.00 |
| Sum All List Price Items | | 154,665.75 |

RECEIVED
APR 09 2013

# B & C BODY COMPANY
P.O. BOX 2867
LONGVIEW, TX 75606
214-631-2196

DATE: April 5, 2013
CUSTOMER NAME: HOLT CAT
ADDRESS: 1601 EAST HWY 356
CITY/STATE/ZIP IRVING , TX 75060
P.O. NUMBER HC375486
SALESMAN: JIM LEWIS

**INVOICE NUMBER 7165**

| | DESCRIPTION | | AMOUNT |
|---|---|---|---|
| 1 | GALBREATH U75-IO-174 75,000# CAPACITY ROLL-OFF HOIST S/N 13H34434 | $ | 35,795.00 |
| 1 | PIONEER RP4500SARG ADJUSTABLE GANTRY TARPER S/N 22633 | | |

MOUNTED ON :2013 CT660S VIN# 498353

A/c # 130610.22
ID# TRK 01478
VIN# 498353
Price $35,795.00
Approval NBA
Date 4/9/13

PAYMENT DUE NET 30
PLEASE REMIT PAYMENT TO ABOVE ADDRESS

FEDERAL EXCISE TAX

SUBTOTAL 35,795.00
STATE SALES TAX
LICENSE & REGISTRATION
TITLE FEE/COUNTY ROAD/BRIDGE

TOTAL PRICE 35,795.00

DEPOSIT ON ORDER
CASH ON DELIVERY 35,795.00

AMOUNT FINANCED

TOTAL PRICE $ 35,795.00 ✓

CUSTOMER ACKNOWLEDGEMENT _____

18000
CAT
CAT
CAT

**Zimbra** **evangelina.garcia@co.hidalgo.tx.us**

## Holt Truck Center - Roll-Off Truck Quote

**From :** Katia Garcia <katia.garcia@co.hidalgo.tx.us> Thu, Feb 27, 2014 10:28 AM

**Subject :** Holt Truck Center - Roll-Off Truck Quote 1 attachment

**To :** Evangelina Garcia <evangelina.garcia@co.hidalgo.tx.us>

**Cc :** Rolando Garcia <rolando.garcia@co.hidalgo.tx.us>, Raul Lozano <raul.lozano@co.hidalgo.tx.us>

Good Morning Ms. Vangie,

Attached please find quote we spoke about this morning. Mr. Lozano is requesting this item be placed for next CC meeting of 3/6/14. Rolando Garcia will be providing us the funding information. Would appreciate if you could please email us the agenda item once you have it so he may have for his reference.

Please let us know if you have any questions or require additional information.

Thank You,

--
**Katia Garcia**
Accountant
Hidalgo County Pct # 1
1902 Joe Stephens Ave Ste. 101
Weslaco, Tx 78596
956-968-8733 ext. 1022

**Holt Truck Center - Roll-Off Trucks quote 2.4.14.pdf**
3 MB

**AI-43248** **Purchasing Department 15. B. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

Submitted By: Nielda Cavazos,
PURCHASING DEPT.

Department: PURCHASING DEPT.

Information

CAPTION

A. Requesting exemption from competitive bidding requirements under the Texas Local Government Code, Section 262.024 (A) (4) a professional engineering services.

B. Presentation of scoring grid (for the purpose of ranking by CC) of the firms graded and evaluated through the County's approved "pool" of professional engineering services for (as needed basis) for various precinct projects in Precinct No. 2.

| Evaluators | R. Gutierrez Engineering | S & G Engineering | R. E. Garcia and Associates |
|---|---|---|---|
| Scores | 97 | 94 | 82 |
| Ranking | | | |

C. Authority for the Purchasing Department to negotiate a professional engineering services contract with the No. 1 ranked firm of _____ for: (as needed basis) for various precinct projects in Precinct No. 2.

BACKGROUND

Fiscal Impact

FISCAL YEAR: 2014 ACCT. #: 4-1200-431-00-122-0xx-0-xxx

FUNDS AVAILABLE Y/N?: MATCHING FUNDS Y/N?:

BUDGETARY IMPACT:

Precinct will identify funding per project

On an as needed basis

Attachments

grid

Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Nielda Cavazos | 02/19/2014 02:37 PM |
| Budget & Management | Debbie Tamez | 02/20/2014 03:46 PM |

| | | |
|---|---|---|
| Manuel Chapa | Manuel Chapa | 02/26/2014 01:24 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Nielda Cavazos Started On: 02/19/2014 02:22 PM

Final Approval Date: 02/28/2014

HIDALGO COUNTY PRECINCT NO 2

FOR

Engineering Services

(On an as needed basis)

# Scoring & Evaluation GRID

**Engineering Services**

| Total Scores | R. Gutierrez Engineering | S & G Engineering | R. E. Garcia and Associates |
|---|---|---|---|
| Evaluator 1 | 97 | 94 | 82 |
| RANKING | | | |

*Scoring & Evaluation was completed by Pct No 2 *

**AI-43332** **Purchasing Department** **15. B. 2.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Comm. Tito Palacios, Pct. #2 **Submitted By:** Erika Zamora, COMM. PCT. #2

**Department:** COMM. PCT. #2

## Information

### CAPTION

A. Requesting approval of an "order" granting an exemption from competitive bidding requirements under Texas Local Gov't Code, Chapter 262, Section .024 (a)(7) "an item that can be obtained from only one source.";

B. Approval of a "Sole Source Declaration" with AEP Texas Central Company with authority to enter into a "Contribution-In-Aid-of Construction Agreement" in the amount of $10,951.41 commencing with the new Precinct. #2 Equipment & Maintenance Facility for the installation/extension of an overhead single phase and thereafter for any other applicable elected office, department, program, agency (from all eligible and applicable funding sources).

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1342-431-00-122-053-0-720

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funding pending approval of AI# 43400

## Attachments

Agreement

letter

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Martha Salazar | Rocio Villarreal | 02/28/2014 09:25 AM |
| Purchasing Department | Marty Salazar | 02/28/2014 02:08 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:09 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 03:22 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Erika Zamora Started On: 02/25/2014 06:07 PM

Final Approval Date: 02/28/2014

# *AEP Texas Central Company*

Contribution-In-Aid-Of-Construction Agreement
For Electric Distribution Service

HIDALGO COUNTY MAINTENANCE FACILITY
Service: 4011 S VETERANS BLVD
SAN JUAN, TX

Contract #: DWMS00000230329 Work Request #: 52612681

Date: 2/19/2014

You, HIDALGO COUNTY MAINTENANCE FACILITY (Customer) have requested AEP Texas Central Company (Company) to install/construct certain electric distribution facilities (hereinafter referred to as "Facilities") as follows:EXTEND OVERHEAD SINGLE PHASE TO SERVE NEW HIDALGO MAINTENANCE FACILITY

The cost for construction/installation of the requested Facilities will be in excess of what would normally be provided by Company at no additional cost to the Customer to initiate service. In accordance with the Company's approved Tariff, as filed with the Public Utilities Commission of Texas, the Customer agrees to pay Company a one-time, non-refundable, Contribution-In-Aid-Of-Construction (CIAC) in the amount of 10,951.41. The Customer understands that he/she receives no ownership or control of the Facilities by virtue of the payment of the CIAC. The Facilities installed by the Company will remain the property of the Company. The Company expressly retains the right to use said Facilities for any purpose which Company deems appropriate under good utility practices, including the distribution of electric service to other customers.

Company agrees to EXTEND OVERHEAD SINGLE PHASE TO SERVE NEW HIDALGO MAINTENANCE FACILITY, and the Customer agrees to provide PAY CIAC BEFORE RELEASING JOB. and to be ready to take electric service on or before 02/19/2014.

It is understood and agreed that the Company will not begin construction/installation of the Facilities until full payment of the CIAC has been received by the Company; therefore, Customer understands and agrees that he/she needs to make full payment of the CIAC in sufficient time to allow for the construction/installation to be completed by the In Service Date.

The pricing of the CIAC quoted herein is based on the specifics of the Customer's request, including the Customer's stated In Service Date, and must be accepted by the Customer by executing and returning to the Company this Agreement by 5/20/2014 to remain valid. Should Customer alter the request for facilities, or request a delay in (or is otherwise unable to take service by) the stated In Service Date, the Company reserves the right to update the pricing and require an additional CIAC payment to reflect any increases in cost due to the alteration in requested facilities or the delay in taking service, or both.

Nothing contained herein shall be construed as a waiver or relinquishment by Company of any right it has or may hereafter have to discontinue service for default in the payment of any bill owing or to become owing hereunder or for any reason or cause allowed by law.

By signing and returning this Agreement, Customer understands and accepts the above described terms and conditions.

| Customer | | Company | |
|---|---|---|---|
| By | _____ | By | _____ |
| Signature: | _____ | Signature: | _____ |
| Title: | _____ | Title: | _____ |
| Date: | _____ | Date: | _____ |

PLEASE >>
DETACH >>
STUB >>
AND >>
RETURN >>
WITH >>
PAYMENT >>

Please remit To:
American Electric Power
P.O. Box 24424
Canton, OH 44701-4424

Company No: 211
Contract No: DWMS00000230329
Customer No:
Date: 2/19/2014
Amount Due: 10,951.41

Bill To:
HIDALGO COUNTY MAINTENANCE FACILITY

Amount Remitted: _____

---

Contract No: DWMS00000230329
Date: 2/19/2014

# PRO FORMA

Customer No:
Purchase Order: 52612681

| Description | Quantity | UOM | Init Amt | Net Amount |
|---|---|---|---|---|
| EXTEND OVERHEAD SINGLE PHASE TO SERVE NEW HIDALGO MAINTENANCE FACILITY | 1.0 | EA | 10,951.41 | 10,951.41 |

Amount Due: 10,951.41

PURCHASING DEPARTMENT
County Of Hidalgo

# MEMORANDUM

# "SOLE SOURCE DECLARATION"

TO: Hidalgo County Commissioners' Court

FROM: Martha L. Salazar
Hidalgo County Purchasing Agent

DATE: March 6, 2014

RE: "Sole Source Declaration"- Hidalgo County Maintenance Facility

---

American Electric Power (AEP) is the sole provider in Hidalgo County for a turn-key solution to supply lighting equipment, as well as repairs and maintenance services.

Hidalgo County requires a turn-key solution to extend overhead single phase for the new (under construction) Hidalgo County Precinct No. 2 Equipment and Maintenance Facility.

Therefore commencing with Precinct #2, Hidalgo County requires a Contribution-In-Aid-of-Construction Agreement with AEP for the provision of a turn-key solution to provide and service the new Hidalgo County Precinct No. 2 Equipment and Maintenance Facility (under construction).

This declaration will remain in effect as long as American Electric Power (AEP) continues to be the sole source for turn-key solutions for lighting with repair and maintenance services for all applicable Hidalgo County Elected Offices, Departments, Programs and Agencies (for all eligible, permitted and applicable funding sources) unless otherwise revoke by Hidalgo County Commissioners Court.

2812 S. Business Highway 281 ★ Edinburg, Texas 78539 ★ (956) 318-2626 ★ Fax (956) 318-2629

**AI-43379** **Purchasing Department** **15. B. 3.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Marty Salazar **Submitted By:** Moises Salazar, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

Requesting authority to advertise with approval of RFB plans and specifications developed by project engineer, Raul Sesin, P.E., Hidalgo County Planning Department for: Hidalgo County Precinct No. 2 -"Gearhart Drive Paving and Drainage Improvements"-RFB No. 2014-078-04-02-MSS.

### BACKGROUND

Proposed Schedule of Events:

| No. | Event | Date |
|---|---|---|
| 1 | Bid Advertisements | 03/15/14 & 03/22/14 |
| 2 | Pre-Bid Conference | 03/24/14 @ 4:00 PM |
| 3 | **Bid Openings** | 04/02/2014 |

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1200-431-00-122-006-0-540

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

PO Request for advertisement (Requisition# 252859)
Funding available as of 2-28-14

## Attachments

Pct 2 Gearhart Dr Project Plans

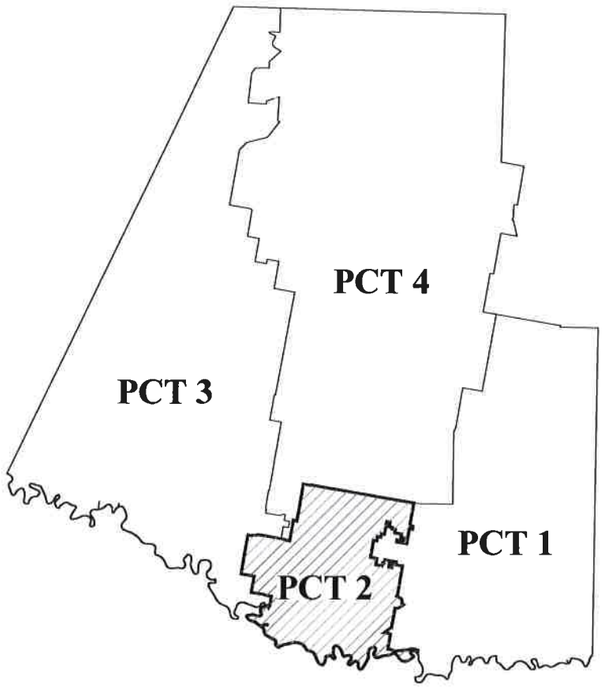
Specifications -Pct 2 -Gearhart Dr

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/28/2014 02:13 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:14 PM |
| Manuel Chapa | Manuel Chapa | 02/28/2014 03:13 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Moises Salazar Started On: 02/27/2014

Final Approval Date: 02/28/2014



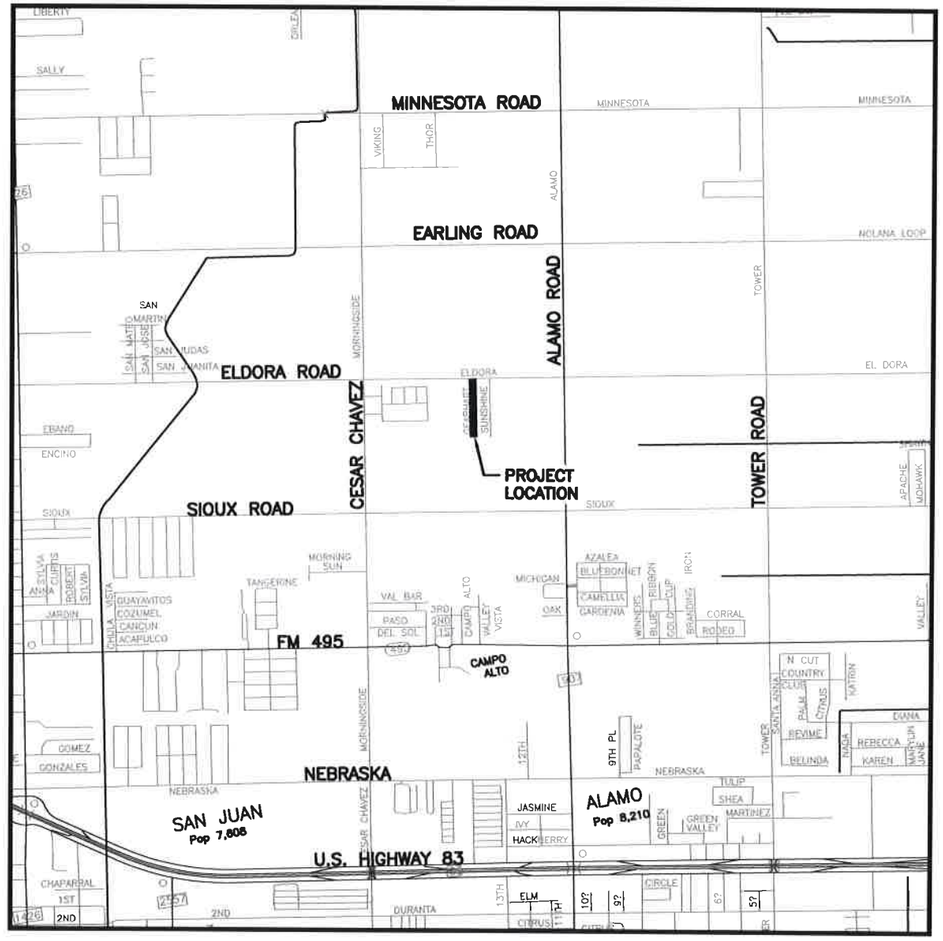

**RAMON GARCIA**
**COUNTY JUDGE**

**COMMISSIONER A.C. CUELLAR, JR.**
**PRECINCT No. 1**

**COMMISSIONER HECTOR " TITO " PALACIOS**
**PRECINCT No. 2**

**COMMISSIONER JOE M. FLORES**
**PRECINCT No. 3**

**COMMISSIONER JOSEPH PALACIOS**
**PRECINCT No. 4**




*LOCATION MAP - SCALE: 1"=3000'*

# HIDALGO COUNTY PRECINCT No. 2
# GEARHART DRIVE
# PAVING AND DRAINAGE IMPROVEMENTS

REVISIONS

| DATE: | COMMENTS: |
|---|---|
| REVISED 2/26/14 | REVISED WORK DONE BY OTHERS |
| | |
| | |


**HIDALGO COUNTY**
**PLANNING DEPARTMENT**

1304 S. 25 TH. STREET
EDINBURG TX. 78539
TEL: (956) 318-2840 ★ FAX: (956) 318-2844
www.co.hidalgo.tx.us
RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR


STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

02/26/14

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RAUL E. SESIN-P.E. No. 86374

Drawing: I:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\GEARHART COVER SHEET.dwg)
Layout Tab: Cover Sheet Date: 02/26/2014 Time: 05:17:17 PM

# INDEX


| NO. | DESCRIPTION |
|---|---|
| **GENERAL** | |
| G01–01 | COVER SHEET |
| G01–02 | INDEX OF SHEETS |
| G01–03 | SYMBOLS, LEGENDS, & ABBREVIATIONS |
| G01–04 | GENERAL NOTES |
| G01–05 | GENERAL NOTES (CONT.) |
| **EXISTING SUBDIVISION CONDITIONS** | |
| C01–01 | EXISTING CONDITION |
| **PROPOSED SUBDIVISION DRAINAGE IMPROVEMENTS** | |
| C02–01 | PROPOSED DRAINAGE IMPROVEMENTS |
| C02–02 | DRAINAGE AREA MAP |
| C02–03 | HYDRAULIC DATA SHEET (1 OF 2) |
| C02–04 | HYDRAULIC DATA SHEET (2 OF 2) |
| **DRAINAGE PLAN AND PROFILE SHEETS** | |
| C03–01 | PLAN AND PROFILE (STA. 0+00.00 TO STA. 6+00.00) |
| C03–02 | PLAN AND PROFILE (STA. 6+00.00 TO STA. 11+98.11) |
| **PROPOSED SOUTH TOWER ESTATES DRIVEWAY SHEETS** | |
| C04–01 | PROPOSED OVERALL DRIVEWAY LAYOUTS |
| C04–02 | PROPOSED DRIVEWAYS PLANVIEW (1 OF 1) |
| C04–03 | DRIVEWAY TABLE |
| **STANDARD DETAIL SHEETS** | |
| C05–01 | STREET CROSS SECTION DETAIL |
| C05–02 | TYPICAL DRAINAGE DETAILS |
| C05–03 | TYPICAL DETAILS |
| C05–04 | TYPE "M" MANHOLE (JUNCTION BOX WITH ACCESS) |

**TXDOT STANDARD DETAILS**

1. DRIVEWAY DETAILS
2. SAFETY END TREATMENT DETAILS
3. BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS (BC 1)–13
4. BARRICADE AND CONSTRUCTION PROJECT LIMIT STANDARD (BC 2)–13
5. BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT STANDARD (BC 3)–13
6. BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES STANDARD (BC 4)–13
7. BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT STANDARD (BC 5)–13
8. BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN STANDARD (BC 6)–13
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10. BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD (BC 8)–13
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18. MAILBOX BRACKET CONNECTING DETAILS MB–11(1)
19. MAILBOX SUPPORT/ FOUNDATION MB–11(1)
20. TABLE OF DHT NUMBERS MB–11(1)



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COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**

SHEET LISTING INDEX

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

02/14/14

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

RAUL E. SESIN, P.E. No. 86374

SCALE:
DRAWN BY:
CHECKED BY: RAUL E. SESIN
TOPO BY: EDGAR I.
SHEET: G01–02

Drawing: I:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\Sheet Listing Index.dwg
Layout Tab: Sheet Index Date: 02/12/2014 Time: 11:14:30 AM

## ABBREVIATIONS

| | |
|---|---|
| A | ASPHALT |
| ADR | ASPHALT DRIVE |
| APV | ASPHALT PAVEMENT |
| AVE | AVENUE |
| BM | BENCHMARK |
| BOC | BACK OF CURB |
| CONC. | CONCRETE |
| CONST. | CONSTRUCT |
| CL | CENTER LINE |
| CDR | CONCRETE DRIVE |
| CPV | CONCRETE PAVEMENT |
| CA | CALICHE |
| CADR | CALICHE DRIVE |
| CARD | CALICHE ROAD |
| CFN | CHAIN LINK FENCE |
| CI | CURB INLET |
| CLV | CULVERT |
| CP | CONTROL POINT |
| CPV | CONCRETE PAVEMENT |
| CR | CENTER OF ROAD |
| CRB | CURB |
| CSM | CABLE SPOT MARKING |
| D | DIRT |
| DR | DRIVE |
| DDR | DIRT DRIVE |
| DT | DITCH |
| DTB | DITCH BOTTOM |
| DTBB | DITCH BOTTOM OF BERM |
| DTE | DITCH EDGE |
| DTFL | DITCH FLOW LINE |
| DTT | DITCH TOP |
| DTTB | DITCH TOP OF BERM |
| DTTOE | DITCH TOE |
| EXIST. | EXISTING |
| ESMT. | EASEMENT |
| EBX | ELECTRIC BOX |
| EOCA | EDGE OF CALICHE |
| EOP | EDGE OF PAVEMENT |
| EW | EDGE OF WATER |
| EWL | END WALL |
| FG | FINISHED GRADE |
| FH | FIRE HYDRANT |
| FL | FLOW LINE |
| FM | FARM-TO-MARKET |
| FN | FENCE |
| FOC | FIBER OPTIC CABLE |
| FOCM | FIBER OPTIC CABLE MARKING |
| G | GRAVEL |
| GDR | GRAVEL DRIVE |
| GL | GAS LINE |
| GLMKR | GAS LINE MARKER |
| GLSM | GAS LINE SPOT MARKING |
| GM | GAS METER |
| GV | GAS VALVE |
| GW | GUY WIRE |
| HCDR | HIDALGO COUNTY DEED RECORDS |
| HCOR | HIDALGO COUNTY OFFICIAL RECORDS |
| HCMR | HIDALGO COUNTY MAP RECORDS |
| HCR | HANDICAP RAMP |
| HDW | HEADWALL |
| HWM | HIGH WATER MARK |
| IR | IRON ROD |
| IRS | IRON ROD SET |
| IGV | IRRIGATION GATE VALVE |
| IGW | IRRIGATION GATEWELL |
| ISP | IRRIGATION STAND PIPE |
| INV | INVERT |
| IV | IRRIGATION VENT |
| LT | LEFT |
| LOT | LOT CORNER |
| MB | MAIL BOX |
| MH | MANHOLE |
| MON | MONUMENT |
| N.T.S | NOT TO SCALE |
| NAIL | NAIL |
| NAWSC | NORTH ALAMO WATER SUPPLY CORPORATION |
| NG | NATURAL GROUND |
| OHE | OVERHEAD ELECTRIC LINE |
| PFL | PIPE FLOW LINE |
| PGL | PROPOSED GRADE LINE |
| PL | PROPERTY LINE |
| PP | POWER POLE |
| PROP | PROPOSED |
| PV | PAVEMENT |
| PVC | PVC PIPE |
| RT | RIGHT |
| RCP | REINFORCED CONCRETE PIPE |
| RIP | RIP-RAP |
| RD | ROAD |
| RM | REFERENCE MARKER |
| ROW | RIGHT-OF-WAY |
| RR | RAIL ROAD |
| RSD | ROAD SIDE DITCH |
| RW | RETAINING WALL |
| SBOT | SWALE BOTTOM |
| SDL | STORM DRAIN LINE |
| SEP | SEPTIC TANK COVER |
| SET | SAFETY-END TREATMENT |
| SP | SERVICE POLE |
| SPOL | SIGNAL POLE TRAFFIC |
| STOP | SWALE TOP |
| STA | STATION |
| SW | SIDEWALK |
| TELBX | TELEPHONE BOX |
| TBX | TRAFFIC CONTROL BOX |
| TMKR | TELEPHONE MARKER |
| TOA | TOP OF ASPHALT |
| TOC | TOP OF CURB |
| TOW | TOP OF WATER |
| TR | TREE |
| TRNS | TRANSFORMER |
| TSL | TRAFFIC SIGNAL LIGHT |
| TSM | TELEPHONE LINE SPOT MARKING |
| VA | VALVE |
| WB | WATER BIBB |
| WDFN | WOODEN FENCE |
| WFN | WIRE FENCE |
| WL | WATER LINE |
| WLSM | WATER LINE SPOT MARKING |
| WM | WATER METER |
| WP | WOODEN POST |
| WV | WATER VALVE |
| WWSM | WASTE WATER LINE SPOT MARKING |
| YD | YARD DRAIN |

## SYMBOLS

- Iron Pipe
- Iron Rod
- Tree
- Sign
- HL&P Tower
- Mhel (Manhole electric)
- Power pole
- Pptrn (Power Pole w/transformer)
- Guy (Down guy)
- Gas meter (Gm)
- Gv (Gas valve)
- Mhsn (Sanitary sewer manhole)
- Snco (Clean out)
- Culv (Culvert pipe)
- Grinl (Grate inlet)
- Mhst (Storm sewer manhole)
- Sgnstp (Stop sign)
- Trjb (Traffic junction box)
- Trlpl (Traffic light pole)
- Fh (Fire hydrant)
- Wm (Water meter)
- Wv (Water valve)
- Shrub
- Acap (Aluminum cap)
- Bdisk (Brass disk)
- Fnd IP (Iron Pipe found)
- Fnd IR (Iron Rod found)
- Nail
- Bm (Benchmark)
- Rowmkr (R.O.W. marker)
- Irr Box
- Irr standpipe
- Irr gate valve
- Grdpst (Guardrail post)
- Mailbox
- Stsgn (Street sign)
- Palm
- Catvbox (Cable Tv box)
- Ebox (Electrical box)
- Eltrn (Electrical transformer)
- Emkr (Electrical marker)
- Lp (Light Pole)
- Pplt (Power pole w/light)
- Pipe
- Gasreg (Gas regulator)
- Mhgs (Mahole Gas)
- Pipvnt (Pipe vent/stand pipe)
- Wvmkr (Water valve marker)
- Crbinl (Curb Inlet)
- Trlt (Traffic light)
- Trsgn (Traffic sign)
- Tsbox (Traffic signal box)
- Tsigpl (Traffic signal pole)
- Mhtel (Manhole telephone)
- Pbox (Telephone pedestal)
- Phmkr (Telephone marker)
- Tlbox (Telephone box)
- Tljnc (Telephone junction box)
- Tlpol (Telephone pole)
- Spkhd (Sprinkler head)
- Wtrwell (Water well)
- Water Bibb
- Cps (Cotton Picker Spindle)

## LEGEND

- WATER PIPE
- SANITARY SEWER PIPE
- STORM DRAIN PIPE
- IRRIGATION PIPE
- TELEPHONE LINE
- FIBER OPTIC CABLE
- GAS LINE
- OVERHEAD ELECTRICAL LINE
- WOOD FENCE
- HOG-WIRE FENCE
- CHAINLINK FENCE
- RIGHT-OF-WAY LINE

**NOTE:**

THE (HORIZONTAL AND/OR VERTICAL LOCATION OF EXISTING UNDERGROUND UTILITIES AS ILLUSTRATED ON THESE PLANS IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION IN THE AREA OF SAID UTILITIES. CONTRACTOR SHALL CONTACT THE FOLLOWING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION/EXCAVATING IN THE AREA OF EXISTING UTILITIES

| UTILITY COMPANY: | CONTACT PERSON: | PHONE: |
|---|---|---|
| DIG-TESS | | 800-DIG-TESS |
| A.E.P. | Carmen Morales | 956-283-2369 |
| MAGIC VALLEY | Bryan Acosta | 956-289-4040 |
| TIME WARNER COMMUNICATION | Rick Pupek | 956-412-5458 |
| ATT SWBT | Lucy Salinas | 956-630-8261 |
| HIDALGO COUNTY DRAINAGE DISTRICT #1 | Noe Saldivar | 956-292-7080 |
| NORTH ALAMO WATER SUPPLY CORPORATION | Lucy | 956-383-1619 |
| HIDALGO COUNTY IRRIGATION DISTRICT No. 2 | Bert Wessling | 956-787-1422 |
| TEXAS GAS SERVICE | Mike Martinez | 956-444-3926 |
| SPECTA ENERGY (TEXAS EASTERN CORP.) | Freddy Pattalan | 956-607-6255 |

## QUANTITY ABBREVIATIONS

| | |
|---|---|
| AC | ACRE |
| CF | CUBIC FEET |
| CY | CUBIC YARD(S) |
| EA | EACH |
| LF | LINEAR FEET |
| LS | LUMP SUM |
| SF | SQUARE FEET |
| SY | SQUARE YARD(S) |


HIDALGO COUNTY
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1304 S. 25 TH. STREET
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PLANNING ADMINISTRATOR


COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**

SYMBOLS, LEGENDS, & ABBREVIATIONS

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

RAUL E. SESIN- P.E. No. 86374

SCALE: N.T.S.
DRAWN BY:
CHECKED BY: RAUL E. SESIN
TOPO BY: EDGAR I.
SHEET: G01-03

Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\Symbols and legend.dwg
Layout Tab: General_Notes Date: 02/05/2014 Time: 01:48:56 PM

## GENERAL NOTES:

1. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE HIDALGO COUNTY PRECINCT No. 2.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT RICHARD GARCIA WITH NORTH ALAMO WATER SUPPLY CORP. 48 HOURS PRIOR TO COMMENCEMENT OF WORK @ (956) 383-1618 TO COORDINATE AND MEET ANY ADDITIONAL REQUIREMENTS AND/OR SPECIFICATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL DIG TESS 48 HOURS PRIOR TO COMMENCEMENT OF WORK FOR UTILITY SPOTTING @ (1-800-DIG-TESS).
4. THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES FOR VERIFICATION OF LOCATION OF EXISTING FACILITIES PRIOR TO BEGINNING ANY EXCAVATION.
5. LOCATIONS OF UNDERGROUND FACILITIES ARE FROM BEST INFORMATION AVAILABLE. NEITHER THE OWNER OR ENGINEER, WARRANT THE ACCURACY OF THE INFORMATION PROVIDED. ANY DEVIATIONS SHALL BE CALLED TO THE ENGINEER'S ATTENTION IMMEDIATELY.
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE CORRESPONDING UTILITY CORPORATION IN REGARDS TO THE RELOCATION OF ANY CONFLICTING UTILITIES.
7. THE CONTRACTOR SHALL REMOVE ALL FENCES LOCATED WITHIN THE EASEMENTS, INTERFERING WITH CONSTRUCTION OPERATION AND PROVIDE TEMPORARY FENCING DURING CONSTRUCTION. REMOVED FENCES SHALL BE REPLACED WITH A NEW FENCE OR UNDAMAGED ORIGINAL FENCING. REMOVAL AND REPLACEMENT OF EXISTING AND TEMPORARY FENCES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
8. ANY DAMAGES TO FENCES, WALKS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
9. THE CONTRACTOR SHALL AT ALL TIME PROVIDE ACCESS TO EXISTING RESIDENCES.
10. THE CONTRACTOR IS TO MAINTAIN ALL EQUIPMENT AND TRANSPORTATION OF SAID EQUIPMENT WITHIN THE EXISTING RIGHT-OF-WAYS OF THE CITY, COUNTY OR STATE.
11. NO OPEN EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. ALL EXCAVATIONS WHICH CANNOT BE BACKFILLED OVERNIGHT SHALL BE COVERED, AS A MINIMUM, WITH STEEL PLATING WHEN IN PAVED AND UNPAVED AREAS SUBJECT TO VEHICULAR LOADING; ¾ PLYWOOD, WOOD PLANKING WITH O.S.H.A. ORANGE PLASTIC EXPANDED MESH BARRIER AROUND PERIMETER IN UNPAVED AREAS NOT SUBJECT TO VEHICULAR LOADING, OR AS APPROVED BY THE ENGINEER.
12. THE PREPARATION OF THESE PLANS REFLECTS INFORMATION, PROVIDED BY OTHERS, ON THE APPROXIMATE LOCATION AND EXISTENCE OF EXISTING UTILITY AND ADJACENT PHYSICAL FEATURES. HOWEVER, THEY DO NOT IMPLY OR AFFIRM THAT ALL UTILITIES OR PHYSICAL FEATURES ARE SHOWN. GENERALLY, UTILITY SERVICE CONNECTIONS ARE NOT INDICATED ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS OF THE OWNER IMMEDIATELY UPON ENCOUNTERING UNFORESEEN CONFLICTS.
13. THE APPROXIMATE LOCATIONS OF KNOWN EXISTING UTILITIES ARE SHOWN, CONTRACTOR SHALL DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD PRIOR TO COMMENCING WORK. CONTRACTOR TO BE FULLY RESPONSIBLE FOR DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE EXISTING UTILITIES.
14. PUBLIC AND PRIVATE UTILITY LINES AND CUSTOMER SERVICE LINES MAY EXIST THAT ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, MAINTAIN AND PROTECT THE INTEGRITY OF THESE LINES. HAND EXCAVATION MAY BE REQUIRED. THE CONTRACTOR SHALL RESTORE RELOCATED OR DIVERTED UTILITY TO ITS ORIGINAL CONDITION AND LOCATION WHEN APPLICABLE UPON COMPLETION OF CONSTRUCTION. SAID RESTORATION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
15. WHERE NEW WATER LINES AND SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 317 (DESIGN OF SEWAGE SYSTEMS) OR 30 TAC 290 (WATER HYGIENE).
16. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS TO ALL HOMES AND BUSINESSES IN WORKING ORDER AT ALL TIMES, EXCEPT FOR BRIEF INTERRUPTIONS IN SERVICE FOR CONNECTIONS TO BE REINSTALLED. IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT. CONTRACTOR IS RESPONSIBLE FOR DAMAGES TO SAID SERVICES.
17. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY SURFACE IRREGULARITIES, AS DIRECTED BY THE ENGINEER, CAUSED BY THE CONTRACTOR'S WORKING OPERATIONS.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF PROPOSED FACILITIES AT ALL TIMES DURING CONSTRUCTION.
19. THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD AS OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF ALL ITEMS TO BE CONSTRUCTED.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AREA BETWEEN THE BACK OF CURB/EDGE OF PAVEMENT, ROAD SIDE DITCH AND RIGHT-OF-WAY TO HAVE POSITIVE FLOW TO THE PROPOSED DRAINAGE SYSTEM.
21. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES DURING THE INSTALLATION OF THE STRUCTURES, DRAINAGE, UTILITY, IRRIGATION AND ROAD IMPROVEMENTS. DEWATERING OF THE TRENCH MAY BE REQUIRED DURING THE INSTALLATION OF THE DRAINAGE, UTILITY AND IRRIGATION FACILITIES/STRUCTURES. SAID DEWATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
22. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION AND SUBMITTAL OF THE TRENCH EXCAVATION PROTECTION PLAN. CONTRACTOR SHALL SUBMIT CONSTRUCTION DETAILS AND DESIGN CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS BEFORE CONSTRUCTING THE SHORING AND/OR UTILIZING A TRENCH PROTECTION SYSTEM (BOX). THE ENGINEER RESERVES THE RIGHT TO REJECT DESIGNS NOT MEETING THE REQUIREMENTS OF SECTION ITEM 402 AND 403.
23. THE CONTRACTOR SHALL PROVIDE STORM WATER POLLUTION PREVENTION PLAN (SWP3) PRIOR TO COMMENCEMENT OF CONSTRUCTION AS REQUIRED BY HIDALGO COUNTY AND OR TCEQ.
24. ALL DEBRIS, VEGETATION AND SURPLUS MATERIAL, EXCEPT ROADWAY SECTION, RESULTING FROM DEMOLITION AND/OR CLEARING OF THE RIGHT-OF-WAY AND PROJECT LOCATION, IN PREPARATION OF PROPOSED IMPROVEMENTS, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO HIDALGO COUNTY PRECINCT No 2. THE CONTRACTOR SHALL PROVIDE A LETTER STATING SO. THIS SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM UNLESS STATED SO. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNER AND THE HIDALGO COUNTY PRECINCT No 2. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN THE AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND CONTRACTOR SHALL REMOVE THE MATERIAL AT OWN COST.
25. ALL ROAD SHALL BE REPLACED WITH 8" COMPACTED CALICHE AND 2" HMAC.
26. COUNTY WILL PROVIDE CALICHE MATERIAL AND CONTROL POINTS (BENCHMARK AND PROPERTY CORNERS) FOR THE WORK TO BE PERFORMED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKING, INCLUDING BUT NOT LIMITED TO HORIZONTAL & VERTICAL GRADE CUTS FOR CURB & GUTTER AND ROADWAY. BASE AND SUB GRADE SHALL HAVE A MINIMUM CROSS SLOPE OF 3.0%.
27. EXISTING ROAD SECTION TO BE EXCAVATED AND STOCKPILED. THE PRODUCT OF THE CRUSHED ASPHALT PAVEMENT (MAX 2" PIECES IN SIZE) AND SALVAGE CALICHE SHALL BE TREATED WITH TWO (2) PERCENT LIME BY DRY WEIGHT OF SALVAGE MATERIAL. TREATED SALVAGE MATERIAL SHALL BE USED IN THE BOTTOM HALF OF THE PROPOSED ROAD. 8 IN. BASE SHALL HAVE A MINIMUM OF 4 IN. NEW CLAICHE AT THE TOP; THE REMAINING BOTTOM HALF SHALL BE ENTIRELY TREATED SALVAGE MATERIAL OR A COMBINATION OF TREATED SALVAGE MATERIAL AND NEW CALICHE. THE BASE SECTION SHALL BE COMPACTED TO 98% STANDARD PROCTOR DENSITY. IF APPLICABLE, THE EXCESS SALVAGE MATERIAL CAN BE TREATED AND USED AS SUB-GRADE TO ATTAIN THE PROPOSED CROSS SECTION OF THE ROAD. SUB-GRADE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE LIME TREATMENT OF THE EXISTING ROAD SECTION AND ADDITIONAL SUB-GRADE FILL, THE ADDITIONAL SUB-GRADE FILL MATERIAL (TO ATTAIN PROPOSED SUB-GRADE WIDTH) AND THE GRADING OF THE CROSS-SLOPE OF THE ROAD SECTION STARTING WITH THE SUB-GRADE SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM AND SHALL BE REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.
28. NEW CALICHE MATERIAL SHALL BE TREATED WITH 0.5% LIME BY DRY WEIGHT OF MATERIAL IF THE PLASTICITY INDEX OF SAID MATERIAL IS GREATER THAN 12. THE GRADATION SHALL BE ARGILLACEOUS LIMESTONE, CALCAREOUS OR CALCAREOUS CLAY PARTICLES, WITH OR WITHOUT STONE CONGLOMERATE GRAVEL, SAND OR GRANULAR MATERIAL:

TYPE D GRADE 6

| SIEVE No. | PERCENT RETAINED |
|---|---|
| 2 | 0 |
| ½ | 20-60 |
| 4 | 40-75 |
| 40 | 75-85 |

HIDALGO COUNTY
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PLANNING ADMINISTRATOR

COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**
GENERAL NOTES

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER
02/14/14

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

RAUL E. SESIN, P.E. No. 86374

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CHECKED BY: RAUL E. SESIN
TOPO BY: EDGAR I.
SHEET: G01-04

Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\Contract GENERAL NOTES.dwg
Layout Tab: GENERAL NOTES Date: 02/12/2014 Time: 09:13:59 AM

## GENERAL NOTES (CONT):

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT/RELOCATION OF ALL REGULATORY SIGNS REMOVED DUE TO CONSTRUCTION OPERATIONS WITH THE SAME SIGN ON FIXED SUPPORT(S) IMMEDIATELY UPON ITS REMOVAL. APPROVAL BY THE ENGINEER IS NECESSARY BEFORE REMOVING ANY REGULATORY ROADWAY SIGN(S). FLAGGERS ARE REQUIRED TO BE AVAILABLE TO DIRECT TRAFFIC DURING SIGN INTERMEDIATE DOWN TIME. RELOCATION OF ANY DIRECTIONAL SIGN ASSEMBLIES REMOVED DURING CONSTRUCTION OPERATIONS, IMMEDIATELY UPON THEIR REMOVAL, IS REQUIRED. ALL SIGNING, BARRICADING AND TRAFFIC CONTROL SHALL CONFORM TO THE LATEST VERSION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". IN NO CASE WILL A SIGN BE REMOVED WITHOUT A REPLACEMENT SIGN AND SUPPORT(S) BEING READILY AVAILABLE AND A LOCATION ESTABLISHED. REMOVAL AND RELOCATION OF THESE SIGNS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED ON THE PROPOSED.

30. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE TXMUTCD LATEST EDITION, AND AS PROVIDED BY THE ENGINEER.

31. THE CONTRACTOR SHALL RELOCATE OR RECONSTRUCT ALL MAIL BOXES TO BE 1' BEHIND BACK OF CURB. MAIL BOXES SHALL BE REPLACED TO THE SAME EXISTING CONDITIONS OR BETTER. SAID RELOCATION OF MAIL BOXES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING WATER VALVES AND MANHOLES TO MATCH PROPOSED FINISH GRADE OF ROADWAY. CONCRETE COLLARS SHALL BE INSTALLED TO MATCH TOPS WITH PAVEMENT GRADE. THIS WORK SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM UNLESS STATED OTHERWISE.

33. DURING EXCAVATION OPERATIONS FOR DRAINAGE AND/OR UTILITIES, THE CONTRACTOR SHALL NOT PILE EXCAVATED MATERIAL OR EXCAVATE WITHIN THE DRIP LINE OF TREES THAT ARE TO BE PRESERVED.

34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPROVING ALL EXISTING DRIVEWAYS AS PER PROPOSED CONDITIONS STATED IN DRIVEWAY TABLE WORKSHEET.


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PLANNING ADMINISTRATOR


COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**
GENERAL NOTES (CONT.)

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

RAUL E. SESIN, P.E. No. 86374

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|---|---|
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| DRAWN BY: | |
| CHECKED BY: | RAUL E. SESIN |
| TOPO BY: | EDGAR I. |
| SHEET: | G01–05 |

Drawing: L:\ PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\Gearhart GENERAL NOTES.dwg)
Layout Tab: GENERAL NOTES (2) Date: 02/12/2014 Time: 09:14:02 AM

ELDORA ROAD

NORTHSIDE VILLAGE
MOBILE HOME
SUBDIVISION
VOL. 21 PG. 42

EXIST. N.A.W.S.C. WATERLINE
APPROX. DEPTH AND LOCATION
(TO BE FIELD VERIFIED)

14.88'
B.O.C.

60.00'
EXIST. R.O.W.

GEARHART DRIVE

MATCH LINE "A"

EXIST. N.A.W.S.C. WATERLINE
APPROX. DEPTH AND LOCATION
(TO BE FIELD VERIFIED)

NORTHSIDE VILLAGE
MOBILE HOME
SUBDIVISION
VOL. 21, PG. 42

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APPROX. DEPTH AND LOCATION
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APPROX. DEPTH AND LOCATION
(TO BE FIELD VERIFIED)

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DRAINAGE IMPROVEMENT
PROJECTS

# GEARHART DRIVE IMPROVEMENT PROJECT

EXISTING CONDITION

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

2/19/14

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

RAUL E. SESIN P.E. No. 86374

SCALE: 1"=50'
DRAWN BY:
CHECKED BY: RAUL E. SESIN
TOPO BY: EDGAR I.
SHEET: C01–01

Drawing: I:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\Existing Condition Plans.dwg
Layout Tab: Existing Conditions (2) Date: 02/05/2014 Time: 01:54:31 PM

ELDORA ROAD

EXIST. TELEPHONE LINE
APPROX. DEPTH AND LOCATION
(TO BE FIELD VERIFIED)

S.E.T. BY OTHERS (1)
STA: 0+15.74 OFF: -19.29L
TOP: 99.41
FL OUT: 96.04 18" RCP

8.00 L.F. of
18" RCP @ 2.81%
(BY OTHERS)

TYP C-C INLET BY OTHERS (1)
STA: 0+20.68 OFF: -13.00L
TOP: 98.07
FL IN=95.82 18" RCP
FL OUT: 94.17 24" RCP

14.62 L.F. of
24" RCP @ 0.20%
(BY OTHERS)

GRADE ROADSIDE
DITCH 100 L.F.

BEGIN PROJECT
LIMITS MATCH
EXIST.ROAD

BP: 0+00.00

R15.00'

INSTALLATION
BY OTHERS

CAUTION:
OVERHEAD
POWER LINES

8.00 L.F. of
18" RCP @ 5.57%
(BY OTHERS)

S.E.T. BY OTHERS (2)
STA: 0+15.99 OFF: 19.48R
TOP: 99.39
FL OUT: 96.25 18" RCP

GRADE ROADSIDE
DITCH 100 L.F.

6'X6' TYP. M MANHOLE BY OTHERS (1)
STA: 0+20.68 OFF: 1.62R
TOP: 98.51
FL IN=92.27 54" RCP
FL IN=94.14 24" RCP
FL IN=94.15 24" RCP
FL OUT: 92.27 54" RCP

11.38 L.F. of
24" RCP @ 0.20%
(BY OTHERS)

TYP C-C INLET BY OTHERS (2)
STA: 0+20.67 OFF: 13.00R
TOP: 98.07
FL IN=95.81 18" RCP
FL OUT: 94.17 24" RCP

PGL ℄ OF
GEARHART DRIVE

296.33 L.F. of
54" RCP @ 0.16%
(BY OTHERS)

EXIST. N.A.W.SC. WATERLINE
APPROX. DEPTH AND LOCATION
(TO BE FIELD VERIFIED)
WATER LINE TO BE RELOCATED
BY PROVIDER

TYP. C-C INLET BY OTHERS (3)
STA: 3+17.01 OFF: -13.00L
TOP: 97.93
FL OUT: 93.93 18" RCP

15.02 L.F. of
18" RCP @ 0.20%
(BY OTHERS)

NORTHSIDE VILLAGE
MOBILE HOME SUBD.
VOL. 21, PG. 42

6'X6' TYP. M MANHOLE BY OTHER (2)
STA: 3+17.01 OFF: 2.02R
TOP: 98.26
FL IN=91.80 54" RCP
FL IN=93.90 18" RCP
FL IN=93.91 18" RCP
FL OUT: 91.80 54" RCP

10.98 L.F. of
18" RCP @ 0.20%
(BY OTHERS)

TYP. C-C INLET BY OTHERS (4)
STA: 3+17.01 OFF: 13.00R
TOP: 97.93
FL OUT: 93.93 18" RCP

296.27 L.F. of
54" RCP @ 0.17%
(BY OTHERS)

PROP. 32.00' B-B

EXIST. 60.00' R.O.W.

15.85
E.O.P

MATCH LINE
STA. 6+00

TYP C-C INLET BY
STA: 6+13.29 OFF: -1
TOP: 97.94
FL OUT: 94.96 18" R

15.44 L.F. of
18" RCP @ 0.20%
(BY OTHERS)

6'X6' TY
STA: 6+1
TOP: 98.2
FL IN=91
FL IN=94
FL IN=94
FL OUT: 9

10.56 L.F
18" RCP @
(BY OTHER

TYP C-C INLET B
STA: 6+13.28 OFF
TOP: 97.94
FL OUT: 94.96 18

0+00 1+00 2+00 3+00 GEARHART DRIVE 4+00 5+00 6+00

TYP C-C INLET BY OTHERS (5)
STA: 6+13.29 OFF: -13.00L
TOP: 97.94
FL OUT: 94.96 18" RCP

15.44 L.F. of
18" RCP @ 0.20%
(BY OTHERS)

MATCH LINE
STA. 6+00

PGL ℄ OF
GEARHART DRIVE

312.45 L.F. of
54" RCP @ 0.15%
(BY OTHERS)

PROP. 32.00' B-B

NORTHSIDE VILLAGE
MOBILE HOME SUBD.
VOL. 21, PG. 42

15.87 L.F. of
24" RCP @ 0.20%
(BY OTHERS)

TYP. C-C INLET BY OTHERS (7)
STA: 9+25.74 OFF: -13.00L
TOP: 98.57
FL OUT: 95.00 24" RCP

264.31 L.F. of
54" RCP @ 0.15%
(BY OTHERS)

149.52 L.F. of
54" RCP @ 0.16%
(BY OTHERS)

EP: 11+98.11

EXIST. 60.00' R.O.W.

15.32'
E.O.P

7+00 8+00 9+00 10+00 11+00 11+98

6'X6' TYP. M MANHOLE BY OTHERS (3)
STA: 6+13.28 OFF: 2.44R
TOP: 98.26
FL IN=91.31 54" RCP
FL IN=94.93 18" RCP
FL IN=94.94 18" RCP
FL OUT: 91.31 54" RCP

10.56 L.F. of
18" RCP @ 0.20%
(BY OTHERS)

EXIST. N.A.W.SC. WATERLINE
APPROX. DEPTH AND LOCATION
(TO BE FIELD VERIFIED)
WATER LINE TO BE RELOCATED
BY PROVIDER

10.13 L.F. of
24" RCP @ 0.20%
(BY OTHERS)

6'X6' TYPE M MANHOLE BY OTHERS (4)
STA: 9+25.74 OFF: 2.87R
TOP: 98.86
FL IN=90.84 54" RCP
FL IN=94.97 24" RCP
FL IN=94.98 24" RCP
FL OUT: 90.84 54" RCP

10'X5' JUNCTION BOX BY OTHERS
STA: 11+90.35 OFF: 2.07R
TOP: 99.48
FL IN=90.45 54" RCP
FL OUT: 90.45 54" RCP

TYP C-C INLET BY OTHERS (6)
STA: 6+13.28 OFF: 13.00R
TOP: 97.94
FL OUT: 94.96 18" RCP

TYP C-C INLET BY OTHERS (8)
STA: 9+25.74 OFF: 13.00R
TOP: 98.57
FL OUT: 95.00 24" RCP

BEGIN PROJECT
LIMITS MATCH

**NOTE:**
ROADWAY CONTRACTOR SHALL INSTALL A CONCRETE APRON AROUND EACH INLET AS PER DETAIL, SEE SHEET C05-02.

REVISED 2/26/14


HIDALGO COUNTY
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HIDALGO COUNTY PCT 2
IMPROVEMENT PROJECTS

# GEARHART DRIVE
# IMPROVEMENT PROJECT
## PROPOSED ROAD AND DRAINAGE IMPROVEMENTS

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

This seal appearing on this document was authorized by Raul E. Sesin P.E. No. 86374 on the above designated date.

2/26/14

RAUL E. SESIN, P.E. No. 86374

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|---|---|
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| DRAWN BY: | |
| CHECKED BY: | RAUL E. SESIN |
| TOPO BY: | EDGAR I. |
| SHEET: | C02-01 |

Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\OVER ALL PLAN.dwg
Layout Tab: Layout1 Date: 02/26/2014 Time: 05:39:39 PM

SUNSHINE DR.

NORTHSIDE VILLAGE
MOBILE HOME SUBD.
PHASE II
VOL. 21, PG.157

A 7

A 5

A 3

NORTHSIDE VILLAGE
MOBILE HOME SUBD.
VOL. 21, PG.42

A 1

GEARHART DR.

A 8

A 6

A 4

A 2

HACIENDA VALENTIN
SUBD. NO. 2
VOL. 48, PG.41

CECIL DR.

CELINDA DR.

SANTOS DR.

COY DR.

N


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HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

# GEARHART DRIVE
# IMPROVEMENT PROJECT
## DRAINAGE AREA MAP

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

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| CHECKED BY: | RAUL E. SESIN |
| TOPO BY: | EDGAR I. |
| SHEET: | C02-02 |

Drawing: I:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\Winstorm Drainage Areas.dwg)
Layout Tab: Layout2 Date: 02/13/2014 Time: 09:23:04 AM

Gearhart WinStorm Output PDF

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 2/13/2014 9:54:21 AM

PROJECT NAME : Northside Village Mobile Home Subdivision
JOB NUMBER :
PROJECT DESCRIPTION : Gearhart Dr.

DESIGN FREQUENCY : 10 Years
ANALYSYS FREQUENCY : 25 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 10 Years

Runoff Computation for Design Frequency.

| ID | C Value | Area (acre) | Tc (min) | Tc Used (min) | Intensity (in/hr) | Supply Q (cfs) | Total Q (cfs) |
|---|---|---|---|---|---|---|---|
| A-1 | 0.443 | 1.25 | 46.16 | 46.16 | 3.83 | 0.000 | 2.122 |
| | 0.85 | 0.12 | Pavement | | | | |
| | 0.4 | 1.13 | Single family | | | | |
| A-2 | 0.446 | 1.17 | 45.38 | 45.38 | 3.87 | 0.000 | 2.022 |
| | 0.85 | 0.12 | Pavement | | | | |
| | 0.4 | 1.05 | Single family | | | | |
| A-3 | 0.442 | 1.60 | 45.35 | 45.35 | 3.88 | 0.000 | 2.742 |
| | 0.85 | 0.15 | Pavement | | | | |
| | 0.4 | 1.45 | Single family | | | | |
| A-4 | 0.445 | 1.50 | 44.19 | 44.19 | 3.94 | 0.000 | 2.630 |
| | 0.85 | 0.15 | Pavement | | | | |
| | 0.4 | 1.35 | Single family | | | | |
| A-5 | 0.442 | 1.49 | 43.32 | 43.32 | 3.99 | 0.000 | 2.630 |
| | 0.85 | 0.14 | Pavement | | | | |
| | 0.4 | 1.35 | Single family | | | | |
| A-6 | 0.445 | 1.40 | 42.16 | 42.16 | 4.06 | 0.000 | 2.530 |
| | 0.85 | 0.14 | Pavement | | | | |
| | 0.4 | 1.26 | Single family | | | | |
| A-7 | 0.473 | 0.26 | 75.87 | 75.87 | 2.74 | 0.000 | 0.337 |
| | 0.85 | 0.06 | Pavement | | | | |
| | 0.4 | 0.16 | Single family | | | | |
| | 0.2 | 0.04 | Undeveloped | | | | |
| A-8 | 0.476 | 0.25 | 73.42 | 73.42 | 2.81 | 0.000 | 0.334 |
| | 0.85 | 0.06 | Pavement | | | | |
| | 0.4 | 0.15 | Single family | | | | |
| | 0.2 | 0.04 | Undeveloped | | | | |

Sag Inlets Configuration Data.

| Inlet ID | Inlet Type | Length/ Perim. (ft) | Grate Area (sf) | Left-Slope Long (%) | Left-Slope Trans (%) | Right-Slope Long (%) | Right-Slope Trans (%) | Gutter n | Gutter DeprW (ft) | Depth Allowed (ft) | Critic Elev. (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A-1 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 98.57 |
| A-2 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 98.57 |
| A-3 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 97.94 |
| A-4 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 97.94 |
| A-5 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 97.93 |
| A-6 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 97.93 |
| A-7 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 98.07 |
| A-8 | Grate | 16.00 | 15.00 | 0.20 | 2.00 | 0.20 | 2.00 | 0.014 | n/a | 0.25 | 98.07 |



Gearhart WinStorm Output PDF

Sag Inlets Computation Data.

| Inlet ID | Inlet Type | Length (ft) | Grate Perim (ft) | Grate Area (sf) | Total Q (cfs) | Inlet Capacity (cfs) | Total Head (ft) | Ponded Width Left (ft) | Ponded Width Right (ft) |
|---|---|---|---|---|---|---|---|---|---|
| A-1 | Grate | n/a | 16.00 | 15.00 | 2.122 | 6.174 | 0.123 | 9.50 | 9.50 |
| A-2 | Grate | n/a | 16.00 | 15.00 | 2.022 | 6.174 | 0.119 | 9.30 | 9.30 |
| A-3 | Grate | n/a | 16.00 | 15.00 | 2.742 | 6.174 | 0.146 | 10.45 | 10.45 |
| A-4 | Grate | n/a | 16.00 | 15.00 | 2.630 | 6.174 | 0.142 | 10.25 | 10.25 |
| A-5 | Grate | n/a | 16.00 | 15.00 | 2.630 | 6.174 | 0.142 | 10.25 | 10.25 |
| A-6 | Grate | n/a | 16.00 | 15.00 | 2.530 | 6.174 | 0.138 | 10.10 | 10.10 |
| A-7 | Grate | n/a | 16.00 | 15.00 | 0.337 | 6.174 | 0.036 | 4.75 | 4.75 |
| A-8 | Grate | n/a | 16.00 | 15.00 | 0.334 | 6.174 | 0.036 | 4.75 | 4.75 |

Cumulative Junction Discharge Computations

| Node I.D. | Node Type | Weighted C-Value | Cumulat. Dr.Area (acres) | Cumulat. Tc (min) | Intens. (in/hr) | User Supply Q cfs) | Additional Q in Node (cfs) | Total Disch. (cfs) |
|---|---|---|---|---|---|---|---|---|
| GJB-1 | JnctBx | 0.446 | 8.92 | 78.95 | 2.67 | 0.000 | 43.51 | 54.111 |
| GJB-2 | JnctBx | 0.446 | 8.92 | 78.95 | 2.67 | 0.000 | 43.51 | 54.111 |
| GJB-3 | JnctBx | 0.446 | 8.92 | 78.95 | 2.67 | 0.000 | 43.51 | 54.111 |
| MH-1 | BoxMh | 0.446 | 8.92 | 78.95 | 2.67 | 0.000 | 43.51 | 54.111 |
| A-1 | Grate | 0.443 | 1.25 | 46.16 | 3.83 | 0.000 | 0.00 | 2.122 |
| A-2 | Grate | 0.446 | 1.17 | 45.38 | 3.87 | 0.000 | 0.00 | 2.022 |
| GMH-2 | BoxMh | 0.446 | 6.50 | 77.95 | 2.69 | 0.000 | 43.51 | 51.310 |
| A-3 | Grate | 0.442 | 1.60 | 45.35 | 3.88 | 0.000 | 0.00 | 2.742 |
| A-4 | Grate | 0.445 | 1.50 | 44.19 | 3.94 | 0.000 | 0.00 | 2.630 |
| MH-3 | BoxMh | 0.448 | 3.40 | 76.99 | 2.71 | 0.000 | 43.51 | 47.644 |
| A-5 | Grate | 0.442 | 1.49 | 43.32 | 3.99 | 0.000 | 0.00 | 2.630 |
| A-6 | Grate | 0.445 | 1.40 | 42.16 | 4.06 | 0.000 | 0.00 | 2.530 |
| GMH-4 | BoxMh | 0.475 | 0.51 | 76.03 | 2.74 | 0.000 | 43.51 | 44.170 |
| A-7 | Grate | 0.473 | 0.26 | 75.87 | 2.74 | 0.000 | 0.00 | 0.337 |
| A-8 | Grate | 0.476 | 0.25 | 73.42 | 2.81 | 0.000 | 0.00 | 0.334 |
| OUT | Outlt | 0.446 | 8.92 | 78.95 | 2.67 | 0.000 | 43.51 | 54.111 |

Conveyance Configuration Data

| Run# | Node I.D. US | Node I.D. DS | Flowline Elev. US (ft) | Flowline Elev. DS (ft) | Shape # | Span (ft) | Rise (ft) | Length (ft) | Slope (%) | n_value |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GJB-1 | OUT | 90.13 | 89.93 | Box 1 | 4.00 | 7.00 | 56.00 | 0.36 | 0.013 |
| 2 | GJB-2 | GJB-1 | 90.23 | 90.13 | Circ 1 | 0.00 | 4.50 | 64.00 | 0.16 | 0.013 |
| 3 | GJB-3 | GJB-2 | 90.45 | 90.23 | Circ 1 | 0.00 | 4.50 | 149.52 | 0.15 | 0.013 |
| 4 | MH-1 | GJB-3 | 90.84 | 90.45 | Circ 1 | 0.00 | 4.50 | 264.31 | 0.15 | 0.013 |
| 5 | A-1 | MH-1 | 95.00 | 94.97 | Circ 1 | 0.00 | 2.00 | 15.87 | 0.19 | 0.013 |
| 6 | A-2 | MH-1 | 95.00 | 94.98 | Circ 1 | 0.00 | 2.00 | 10.13 | 0.20 | 0.013 |
| 7 | GMH-2 | MH-1 | 91.31 | 90.84 | Circ 1 | 0.00 | 4.50 | 312.45 | 0.15 | 0.013 |
| 8 | A-3 | GMH-2 | 94.96 | 94.93 | Circ 1 | 0.00 | 1.50 | 15.44 | 0.19 | 0.013 |
| 9 | A-4 | GMH-2 | 94.96 | 94.94 | Circ 1 | 0.00 | 1.50 | 10.56 | 0.19 | 0.013 |
| 10 | MH-3 | GMH-2 | 91.80 | 91.31 | Circ 1 | 0.00 | 4.50 | 296.27 | 0.17 | 0.013 |
| 11 | A-5 | MH-3 | 93.93 | 93.90 | Circ 1 | 0.00 | 1.50 | 15.02 | 0.20 | 0.013 |
| 12 | A-6 | MH-3 | 93.93 | 93.91 | Circ 1 | 0.00 | 1.50 | 10.98 | 0.18 | 0.013 |
| 13 | GMH-4 | MH-3 | 92.27 | 91.80 | Circ 1 | 0.00 | 4.50 | 296.33 | 0.16 | 0.013 |
| 14 | A-7 | GMH-4 | 94.17 | 94.14 | Circ 1 | 0.00 | 2.00 | 14.62 | 0.21 | 0.013 |
| 15 | A-8 | GMH-4 | 94.17 | 94.15 | Circ 1 | 0.00 | 2.00 | 11.38 | 0.18 | 0.013 |



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COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**
HYDRAULIC DATA SHEET (1 OF 2)

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER
02/13/14

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TOPO BY: EDGAR I.
SHEET: C02-03

Drawing: I:\PCT 2\GEAR HART AND E Dore Drainage Improvements\Drawing\Gearhart WINDSTORM.dwg
Layout Tab: Winstorm 1-2 Date: 02/13/2014 Time: 09:59:19 AM

Gearhart WinStorm Output PDF

Conveyance Hydraulic Computations. Tailwater = 97.000 (ft)

| Run# | Hydraulic Gradeline US Elev (ft) | DS Elev (ft) | Fr.Slope (%) | Depth Unif. (ft) | Depth Actual (ft) | Velocity Unif. (f/s) | Velocity Actual (f/s) | Q (cfs) | Cap (cfs) | Junc Loss (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 97.01 | 97.00 | 0.021 | 1.97 | 7.00 | 6.87 | 1.93 | 54.11 | 224.64 | 0.000 |
| 2 | 97.05 | 97.01 | 0.076 | 2.81 | 4.50 | 5.17 | 3.40 | 54.11 | 77.74 | 0.000 |
| 3 | 97.17 | 97.05 | 0.076 | 2.81 | 4.50 | 5.17 | 3.40 | 54.11 | 75.44 | 0.000 |
| 4 | 97.37 | 97.17 | 0.076 | 2.81 | 4.50 | 5.17 | 3.40 | 54.11 | 75.55 | 0.000 |
| 5 | 97.37 | 97.37 | 0.009 | 0.63 | 2.00 | 2.53 | 0.68 | 2.12 | 9.84 | 0.000 |
| 6 | 97.37 | 97.37 | 0.008 | 0.61 | 2.00 | 2.50 | 0.64 | 2.02 | 10.05 | 0.000 |
| 7 | 97.58 | 97.37 | 0.068 | 2.67 | 4.50 | 5.21 | 3.23 | 51.31 | 76.28 | 0.000 |
| 8 | 97.59 | 97.58 | 0.068 | 0.84 | 1.50 | 2.68 | 1.55 | 2.74 | 4.63 | 0.000 |
| 9 | 97.59 | 97.58 | 0.063 | 0.82 | 1.50 | 2.66 | 1.49 | 2.63 | 4.57 | 0.000 |
| 10 | 97.75 | 97.58 | 0.059 | 2.53 | 4.50 | 5.17 | 3.00 | 47.64 | 79.98 | 0.000 |
| 11 | 97.76 | 97.75 | 0.063 | 0.80 | 1.50 | 2.76 | 1.49 | 2.63 | 4.70 | 0.000 |
| 12 | 97.76 | 97.75 | 0.058 | 0.80 | 1.50 | 2.65 | 1.43 | 2.53 | 4.48 | 0.000 |
| 13 | 97.90 | 97.75 | 0.050 | 2.39 | 4.50 | 5.15 | 2.78 | 44.17 | 78.33 | 0.000 |
| 14 | 97.90 | 97.90 | 0.000 | 0.25 | 2.00 | 1.49 | 0.11 | 0.34 | 10.25 | 0.000 |
| 15 | 97.90 | 97.90 | 0.000 | 0.26 | 2.00 | 1.41 | 0.11 | 0.33 | 9.49 | 0.000 |

END

NORMAL TERMINATION OF WINSTORM.



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**GEARHART DRIVE**
**IMPROVEMENT PROJECT**
HYDRAULIC DATA SHEET (2 OF 2)

STATE OF TEXAS
RAUL E. SESIN
86374
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02/14/14

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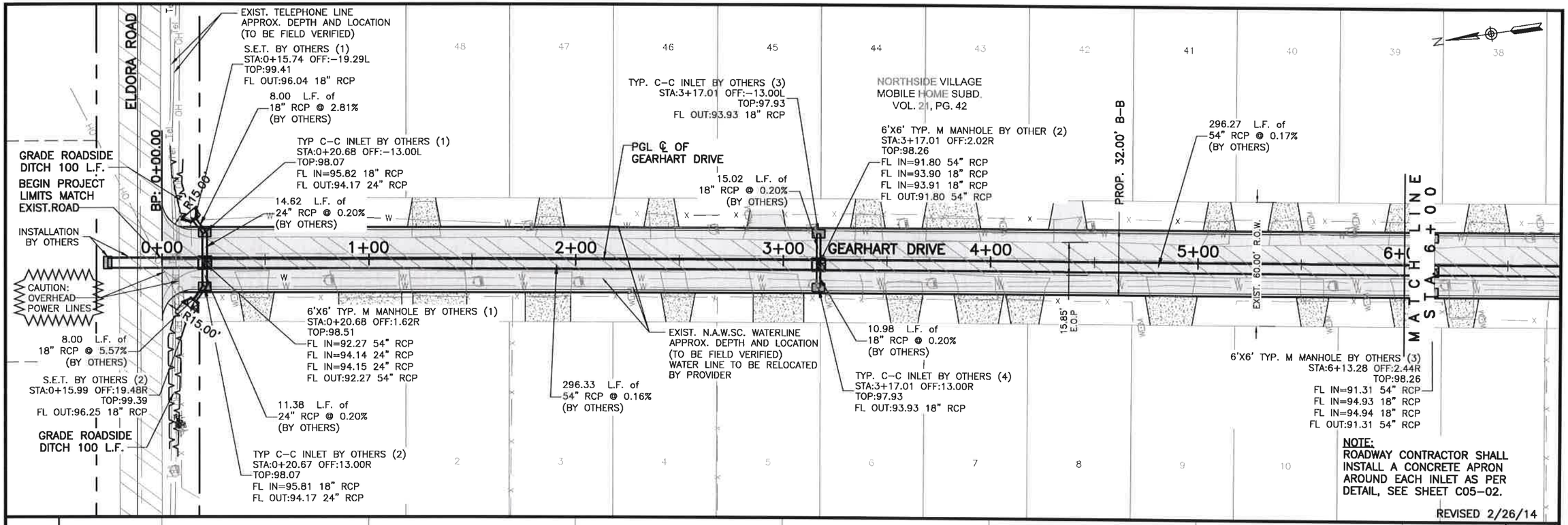


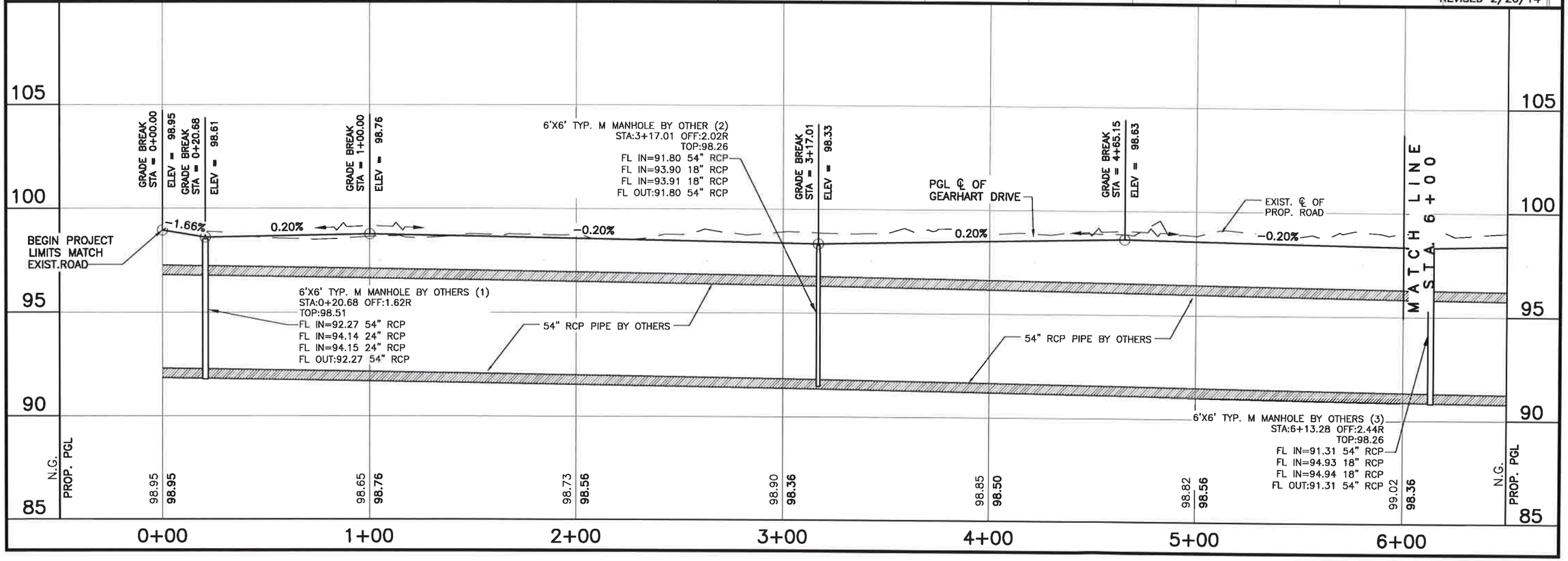


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# GEARHART DRIVE IMPROVEMENT PROJECT

PLAN AND PROFILE
STA. 0+00 - STA. 6+00

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02/26/14

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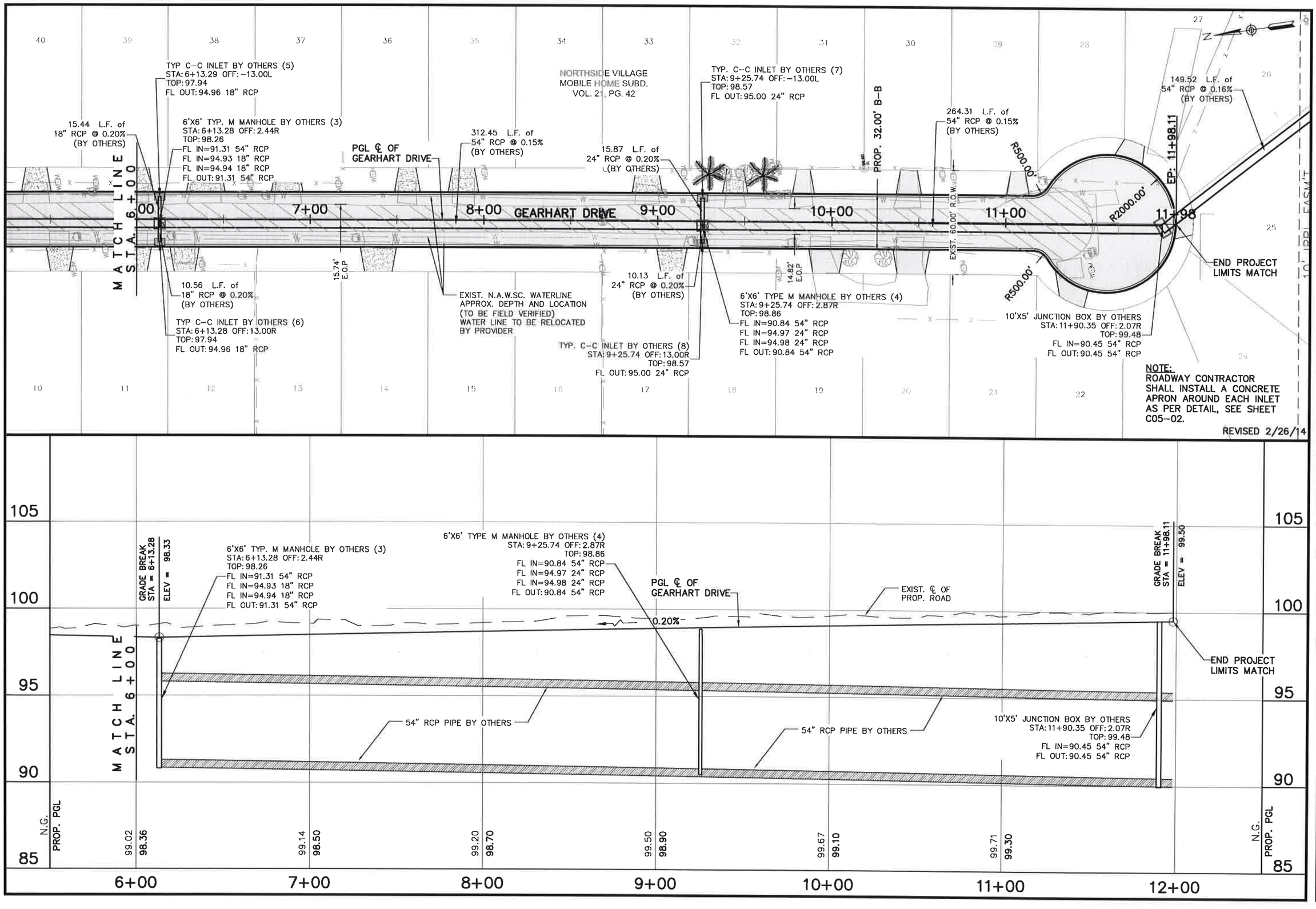
SHEET: C03-01

Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\P&P 0+00-6+00.dwg
Layout Tab: Layout1 Date: 02/26/2014 Time: 05:38:54 PM

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# GEARHART DRIVE IMPROVEMENT PROJECT

PLAN AND PROFILE
STA. 6+00 - STA. 12+00

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED PROFESSIONAL ENGINEER
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TOPO BY: EDGAR I.
SHEET: C03-02

Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\P&P 6+00-12+00.dwg
Layout Tab: Layout1 Date: 09/26/2014 Time: 05:43:28 PM

NORTHSIDE VILLAGE MOBILE HOME SUBD. PHASE II VOL. 21, PG. 157

HILARIO & ROSALINDA TRISTAN 2.50 AC. LOT 7 BLK 44 ALAMO LAND & SUGAR CO. ID: 112614 & 341693

ELA GUZMEN 7 BLK 44 SUGAR CO. K 112616

ROSZ 7 BLK 44 SUGAR CO. 936

LAZAR 7 BLK 44 SUGAR CO. 935

ROSZ 7 BLK 44 SUGAR CO. 937

N. PALACIOS 7 BLK 44 SUGAR CO. 887

AVARRO 7 BLK 44 SUGAR CO. 612

ELDORA ROAD

SUNSHINE DRIVE

BP: 0+00.00

EP: 11+98.11

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 11+98

GEARHART DRIVE

NORTHSIDE VILLAGE MOBILE HOME SUBD. VOL. 21, PG. 42

NORTHSIDE VILLAGE MOBILE HOME SUBD VOL. 21, PG. 42

CECIL DRIVE

CELINDA DRIVE

SANTOS DRIVE

HACIENDA VALENTIN SUBDIVISION NO. 2 VOL. 48, PG. 41

*NOTE:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPROVING ALL EXISTING DRIVEWAYS AS PER PROPOSED CONDITIONS STATED IN DRIVEWAY TABLE WORKSHEET.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPROVING ALL EXISTING DRIVEWAYS. CALICHE, DIRT OR ASPHALT DRIVEWAYS SHALL BE REPLACED WITH 3" COMPACTED CALICHE AND 1" ACP. CONCRETE DRIVEWAYS SHALL BE REPLACED WITH 4" CONCRETE WITH REINFORCEMENT AS PER DETAIL.
3. SEE DRIVEWAY TABLE SHEET.


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IMPROVEMENT PROJECTS

# GEARHART DRIVE IMPROVEMENT PROJECT

## PROPOSED OVERALL DRIVEWAY LAYOUTS

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED PROFESSIONAL ENGINEER

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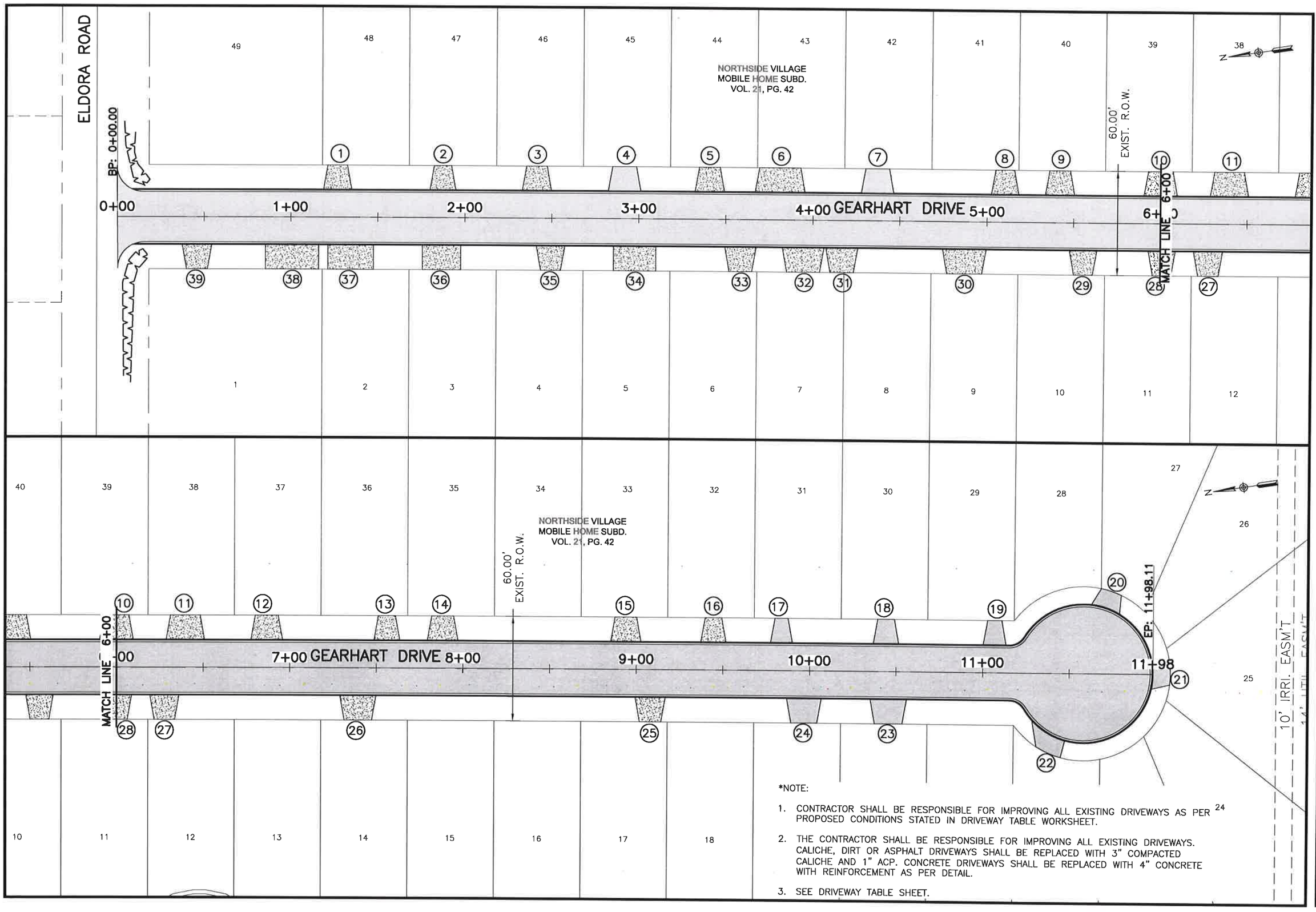
| TOPO BY: | EDGAR I. |
| SHEET: | C04-01 |

Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\PROP DRIVEWAYS.dwg)
Layout Tab: overall Date: 02/12/2014 Time: 08:41:11 AM

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# GEARHART DRIVE IMPROVEMENT PROJECT

PROPOSED DRIVEWAYS
PLAN VIEW (1 OF 1)

STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER
02/14/14

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| CHECKED BY: | RAUL E. SESIN |
| TOPO BY: | EDGAR I. |
| SHEET: | C04-02 |

Drawing: I:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\PROP. DRIVEWAYS.dwg
Layout Tab: Sheet 1 Date: 02/12/2014 Time: 08:41:16 AM

# GEARHART DRIVE DRIVEWAY TABLE

| DRIVEWAY NUMBER | STATION & OFFSET | DRIVEWAY DESCRIPTION | EXIST. CULVERT LENGTH (FEET) | EXIST. CULVERT PIPE SIZE (IN) | PROP. CULVERT LENGTH (FEET) | PROP. CULVERT PIPE SIZE (IN) | PROP. DRIVEWAY AREA (CONC.) (SF) | PROP. DRIVEWAY AREA (CONC.) (SY) | PROP. DRIVEWAY DRIVEWAY AREA (ACP) (SF) | PROP. DRIVEWAY DRIVEWAY AREA (ACP) (SY) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1+26.81 LT. | CONCRETE | | | | | 191 | 21 | | |
| 2 | 1+87.39 LT. | CONCRETE | | | | | 171 | 19 | | |
| 3 | 2+41.32 LT. | CONCRETE | | | | | 201 | 22 | | |
| 4 | 2+91.75 LT. | PAVEMENT | | | | | | | 227 | 25 |
| 5 | 3+40.76 LT. | CONCRETE | | | | | 200 | 22 | | |
| 6 | 3+81.05 LT. | CONCRETE | | | | | 362 | 40 | | |
| 7 | 4+37.10 LT. | PAVEMENT | | | | | | | 226 | 25 |
| 8 | 5+10.30 LT. | CONCRETE | | | | | 185 | 21 | | |
| 9 | 5+42.05 LT. | CONCRETE | | | | | 201 | 22 | | |
| 10 | 5+99.98 LT. | CONCRETE | | | | | 234 | 26 | | |
| 11 | 6+39.71 LT. | CONCRETE | | | | | 275 | 31 | | |
| 12 | 6+86.74 LT. | CONCRETE | | | | | 219 | 24 | | |
| 13 | 7+56.08 LT. | CONCRETE | | | | | 173 | 19 | | |
| 14 | 7+88.31 LT. | CONCRETE | | | | | 211 | 23 | | |
| 15 | 8+93.88 LT. | CONCRETE | | | | | 210 | 23 | | |
| 16 | 9+44.50 LT. | CONCRETE | | | | | 168 | 19 | | |
| 17 | 9+83.67 LT. | PAVEMENT | | | | | | | 139 | 15 |
| 18 | 10+44.06 LT. | PAVEMENT | | | | | | | 171 | 19 |
| 19 | 11+06.79 LT. | PAVEMENT | | | | | | | 150 | 17 |
| 20 | 11+73.99 LT. | PAVEMENT | | | | | | | 146 | 16 |
| 21 | 11+98.11 RT. | PAVEMENT | | | | | | | 146 | 16 |
| 22 | 11+38.00 RT. | PAVEMENT | | | | | | | 187 | 21 |
| 23 | 10+45.68 RT. | PAVEMENT | | | | | | | 259 | 29 |
| 24 | 9+96.82 RT. | PAVEMENT | | | | | | | 245 | 27 |
| 25 | 9+08.17 RT. | CONCRETE | | | | | 209 | 23 | | |
| 26 | 7+39.42 RT. | CONCRETE | | | | | 257 | 29 | | |
| 27 | 6+27.61 RT. | CONCRETE | | | | | 201 | 22 | | |
| 28 | 6+00.82 RT. | CONCRETE | | | | | 185 | 21 | | |
| 29 | 5+55.61 RT. | CONCRETE | | | | | 186 | 21 | | |
| 30 | 4+87.13 RT. | CONCRETE | | | | | 317 | 35 | | |
| 31 | 4+16.67 RT. | CONCRETE | | | | | 223 | 25 | | |
| 32 | 3+94.44 RT. | CONCRETE | | | | | 300 | 33 | | |
| 33 | 3+58.57 RT. | CONCRETE | | | | | 217 | 24 | | |
| 34 | 2+97.73 RT. | CONCRETE | | | | | 342 | 38 | | |
| 35 | 2+49.38 RT. | CONCRETE | | | | | 194 | 22 | | |
| 36 | 1+86.72 RT. | CONCRETE | | | | | 307 | 34 | | |
| 37 | 1+34.42 RT. | CONCRETE | | | | | 366 | 41 | | |
| 38 | 1+00.71 RT. | CONCRETE | | | | | 428 | 48 | | |
| 39 | 0+45.00 RT. | CONCRETE | | | | | 204 | 23 | | |
| 40 | | | | | | | | | | |
| 41 | | | | | | | | | | |
| 42 | | | | | | | | | | |
| 43 | | | | | | | | | | |
| 44 | | | | | | | | | | |
| 45 | | | | | | | | | | |
| | TOTAL: | | | | | | 6937 | 771 | 1896 | 210 |

***NOTE:**

1. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPROVING ALL EXISTING DRIVEWAYS AS PER PROPOSED CONDITIONS STATED IN DRIVEWAY TABLE WORKSHEET.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPROVING ALL EXISTING DRIVEWAYS. CALICHE, DIRT OR ASPHALT DRIVEWAYS SHALL BE REPLACED WITH 3" COMPACTED CALICHE AND 1" ACP. CONCRETE DRIVEWAYS SHALL BE REPLACED WITH 4" CONCRETE WITH REINFORCEMENT AS PER DETAIL.


HIDALGO COUNTY
PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
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RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR


COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
IMPROVEMENT PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**
DRIVEWAY TABLE

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

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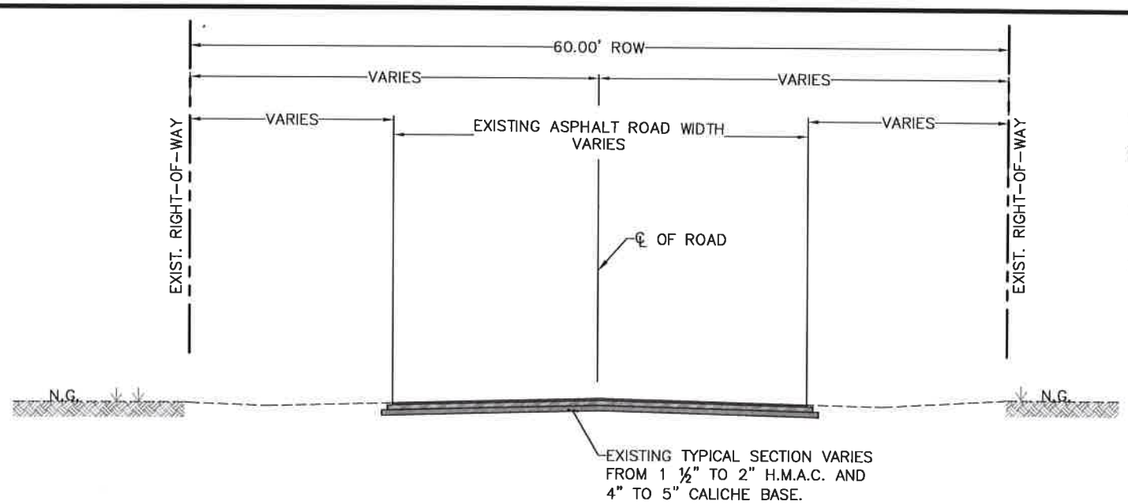
02/14/14

RAUL E. SESIN, P.E. No. 86374

SCALE:
DRAWN BY:
CHECKED BY: RAUL E. SESIN
TOPO BY: EDGAR I.
SHEET: C04–03

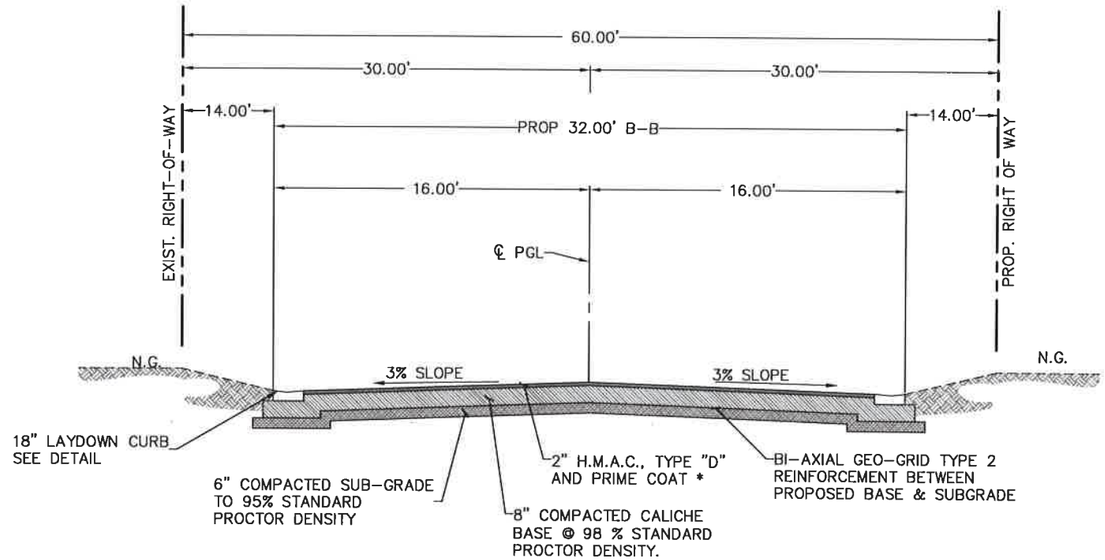
Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\PROP DRIVEWAYS.dwg
Layout Tab: DRIVEWAY TABLE Date: 02/12/2014 Time: 08:41:20 AM




## EXISTING GEARHART DRIVE
STREET CROSS SECTION

GENERAL NOTES:

1. CONTRACTOR SHALL INSTALL 8" CALICHE BASE WITH 3% CROSS SLOPE.
2. CONTRACTOR SHALL APPLY PRIME COAT OVER ENTIRE 29.0 FT BASE.
3. 2" HMAC WITH 3% CROSS SLOPE SHALL BE INSTALLED BY CONTRACTOR IF ADD. ALTERNATE BID IS AWARDED.




## PROPOSED GEARHART DRIVE
STREET CROSS SECTION

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PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
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RAUL E. SESIN, P.E., C.F.M.
PLANNING ADMINISTRATOR

COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**
STREET CROSS SECTION
DETAIL

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER
02/14/14

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| DRAWN BY: | |
| CHECKED BY: | RAUL E. SESIN |
| TOPO BY: | EDGAR I. |
| SHEET: | C05-01 |

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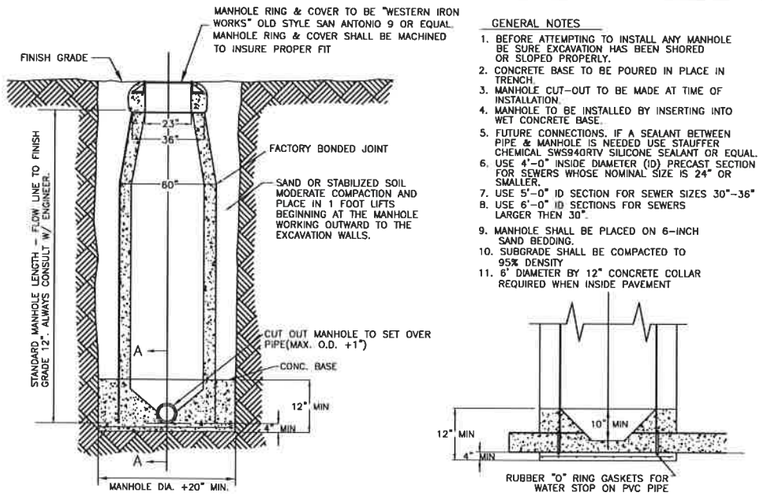



GENERAL NOTES

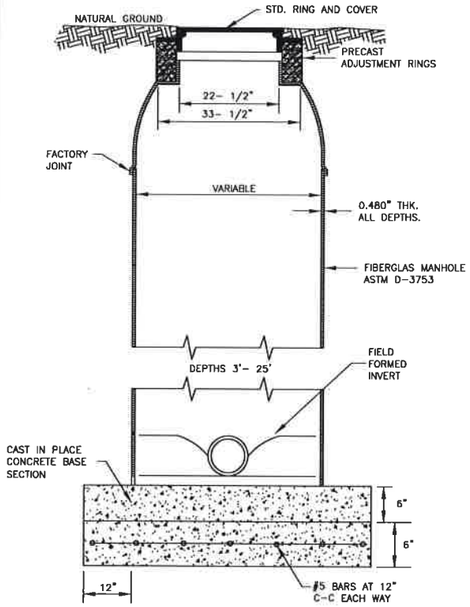
1. BEFORE ATTEMPTING TO INSTALL ANY MANHOLE BE SURE EXCAVATION HAS BEEN SHORED OR SLOPED PROPERLY.
2. CONCRETE BASE TO BE POURED IN PLACE IN TRENCH.
3. MANHOLE CUT-OUT TO BE MADE AT TIME OF INSTALLATION.
4. MANHOLE TO BE INSTALLED BY INSERTING INTO WET CONCRETE BASE.
5. FUTURE CONNECTIONS. IF A SEALANT BETWEEN PIPE & MANHOLE IS NEEDED USE STAUFFER CHEMICAL SWS940RTV SILICONE SEALANT OR EQUAL.
6. USE 4'-0" INSIDE DIAMETER (ID) PRECAST SECTION FOR SEWERS WHOSE NOMINAL SIZE IS 24" OR SMALLER.
7. USE 5'-0" ID SECTION FOR SEWER SIZES 30"-36"
8. USE 6'-0" ID SECTIONS FOR SEWERS LARGER THEN 30".
9. MANHOLE SHALL BE PLACED ON 6-INCH SAND BEDDING.
10. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY
11. 6" DIAMETER BY 12" CONCRETE COLLAR REQUIRED WHEN INSIDE PAVEMENT




*SECTION "A-A"*

## CAST-IN-PLACE 4' DIA. CONCRETE STORM SEWER MANHOLE

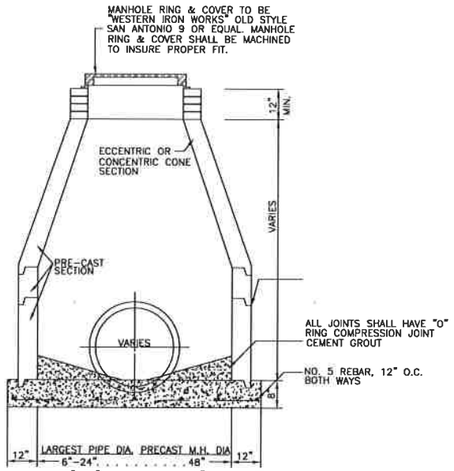
N.T.S




NOTE: (FOR FIBERGLASS & POLYETHLENE MANHOLES) FILL SHALL BE SAND OR SOIL W/ MODERATE COMPACTION & PLACED IN ONE FOOTLIFTS BEGINNING AT MANHOLE WORKING OUTWARD TO THE EXCAVATION WALLS

## TYPICAL FIBERGLASS MANHOLE

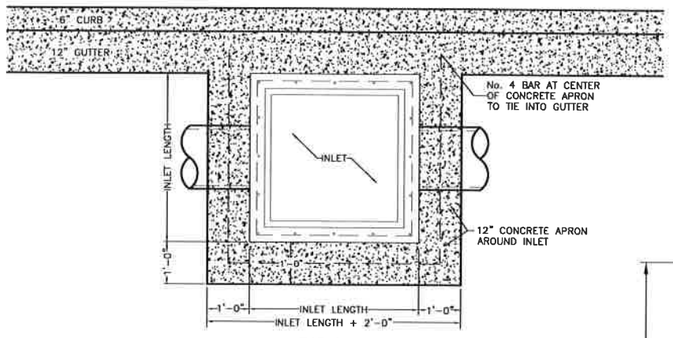
N.T.S




NOTE:
1. MANHOLE SHALL BE PLACED ON 6-INCH SAND BEDDING.
2. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY
3. 6' DIAMETER BY 12" CONCRETE COLLAR REQUIRED WHEN INSIDE PAVEMENT

## STANDARD STORM SEWER PRE-CAST CONCRETE MANHOLE

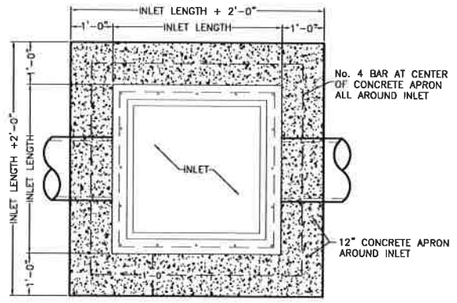
N.T.S




*TOP VIEW*

## INLET CONCRETE APRON WITH CURB & GUTTER

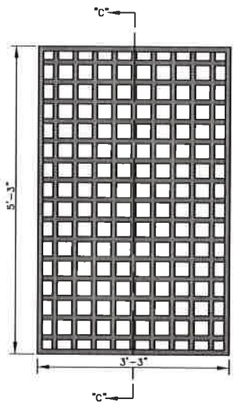
N.T.S



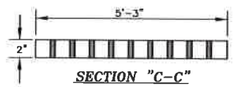

*TOP VIEW*

## INLET CONCRETE APRON WITH OUT CURB & GUTTER

N.T.S



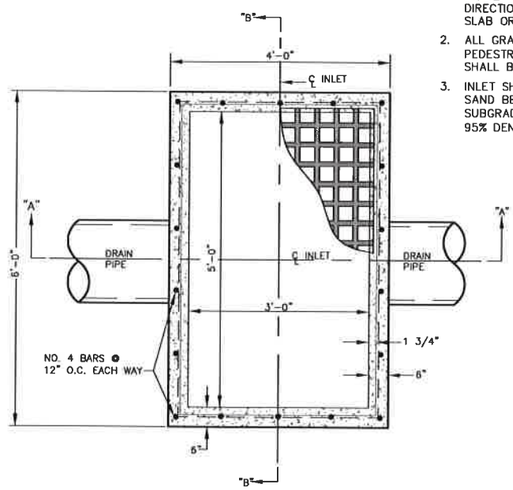

*TOP VIEW OF TYPE "C-C" GRATE*



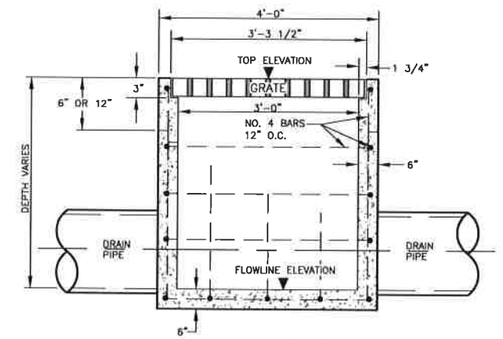

*SECTION "C-C"*

***REINFORCING STEEL DETAILS***

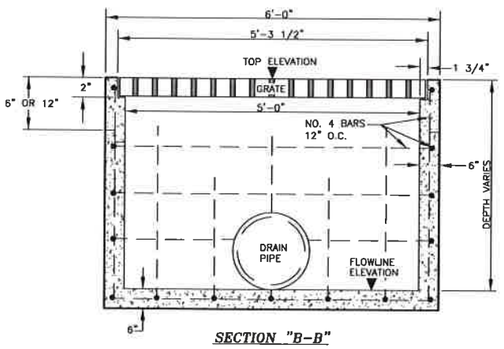
NOTE:
1. ALL STEEL TO BE No. 4 BARS ON 12" SPACING IN BOTH DIRECTIONS EXCEPT IN TOP SLAB OR MANHOLE.
2. ALL GRATE INLET COVERS SHALL BE PEDESTRIAN SAFE COVERS. OPENINGS SHALL BE NO GREATER THAN 3/8" WIDE.
3. INLET SHALL BE PLACED ON 6-INCH SAND BEDDING. SUBGRADE SHALL BE COMPACTED TO 95% DENSITY




*TOP VIEW OF INLET*




*SECTION "A-A"*




*SECTION "B-B"*

## TYPE "C-C" GRATE INLET

N.T.S

HIDALGO COUNTY
PLANNING DEPARTMENT
1304 S. 25 TH. STREET
EDINBURG TX. 78539
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COMMISSIONER
HECTOR "TITO" PALACIOS
HIDALGO COUNTY PCT 2
DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**

TYPICAL DRAINAGE DETAILS

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER
02/14/14

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RAUL E. SESIN, P.E. No. 86374

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| DRAWN BY: | |
| CHECKED BY: | RAUL E. SESIN |
| TOPO BY: | EDGAR I. |
| SHEET: | C05-02 |

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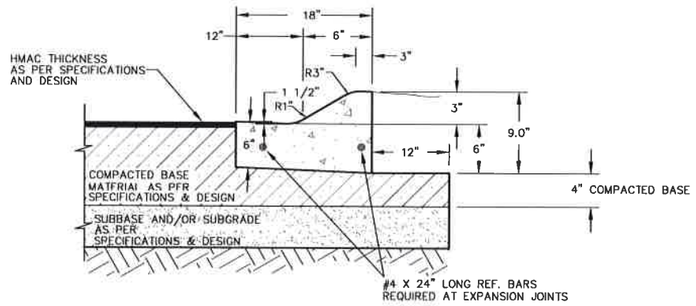
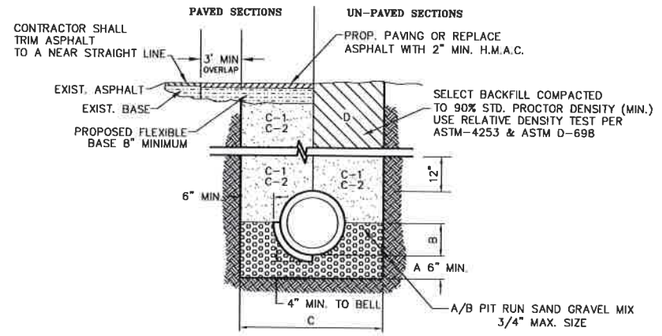



## TYPICAL COUNTY LAYDOWN CURB & GUTTER SECTION

N.T.S

1. ALL HONEYCOMBING SHALL BE GROUTED TO PROVIDE A UNIFORM SURFACE.
2. WHEN HONEYCOMBING IS EXCESSIVE AS DETERMINED BY THE COUNTY OF HIDALGO DESIGNATED REPRESENTATIVE, CURB AND GUTTER SHALL BE REPLACED.
3. BACKFILL BEHIND CURBS SHALL BE ACCOMPLISHED WITHIN 24 HOURS AFTER BACK FORM IS REMOVED OR 48 HOURS AFTER SLIP FORMING.
4. CURB AND GUTTER CONCRETE SHALL BE CLASS "A" (3000 PSI).
5. REINFORCING STEEL AS SHOWN.
6. MAX. LENGTH OF CURB AND GUTTER SECTION IS 80' BETWEEN 3/4" EXPANSION JOINT.




## STORM TRENCH BEDDING AND BACKFILL DETAILS

N.T.S

A. SAND GRAVEL MIX BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW OF PIPE (MIN. THICKNESS = 6") - PIT RUN GRAVEL 3/4" MAX. SIZE.

B. SAND GRAVEL MIX AFTER PIPE IS LAID, FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE. PIT RUN GRAVEL 3/4" MAX. SIZE

C. TRENCH WIDTHS SHALL BE BELL O.D. x 1.25 + 12".

C-1 (CITY STREETS, PARKING AREA, DRIVEWAYS, COUNTY ROAD & UNPAVED AREAS) SELECT EXCAVATED BACK FILL SHALL BE SOIL TYPE A1, A2, A3, (AASHTO M145) COMPACTED TO 90% SPD, 8" LIFTS, MECHANICAL COMPACTION.

C-2 (STATE MAINTAINED ROADWAYS) COMPACTED SAND/CEMENT STABILIZED BACK FILL WITH 7% PORTLAND CEMENT COMPACTED AS PER ASTM D-4253 AND ASTM D-698.

D. SELECTED EARTH BACKFILL COMPACTED TO 90% STANDARD PROCTOR DENSITY (12" LIFT, MECHANICAL COMPACTION). FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE. BACKFILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% STANDARD PROCTOR DENSITY (USE RELATIVE DENSITY TEST PER ASTM D-4253 & ASTM D-698). THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 8". STRUCTURE BACKFILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED SUBSITUTE.

HIDALGO COUNTY
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DRAINAGE IMPROVEMENT
PROJECTS

**GEARHART DRIVE**
**IMPROVEMENT PROJECT**

TYPICAL DETAILS

STATE OF TEXAS
RAUL E. SESIN
86374
LICENSED
PROFESSIONAL ENGINEER

02/11/14

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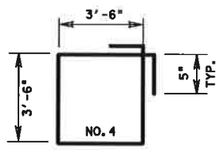
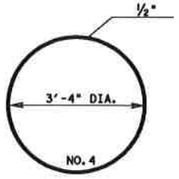
SCALE: N.T.S.
DRAWN BY:
CHECKED BY: RAUL E. SESIN
TOPO BY: EDGAR I.
SHEET: C05-03

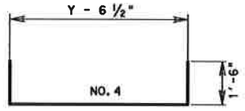
Drawing: L:\PCT 2\GEAR HART AND El Dora Drainage Improvements\Drawing\typical details.dwg)
Layout Tab: Layout1 Date: 02/11/2014 Time: 11:54:53 AM



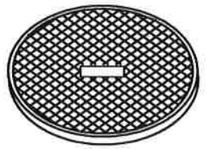

BARS O

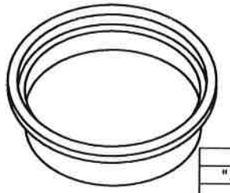


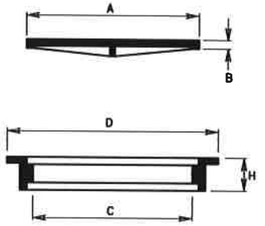

CONCENTRIC BAR




BARS C

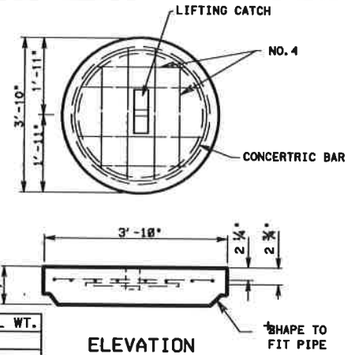




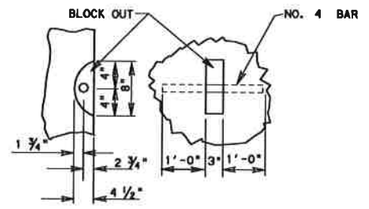



| LID | | | RING | | | | TOTAL WT. |
|---|---|---|---|---|---|---|---|
| "A" | "B" | WEIGHT | "C" | "D" | "H" | WEIGHT | |
| 25 5/8" | 1" | 125 lbs. (min) | 24 | 32 | 5 | 185 lbs. | 310 lbs. |

RING & COVER DETAILS (STEEL)
(SUBSIDIARY)

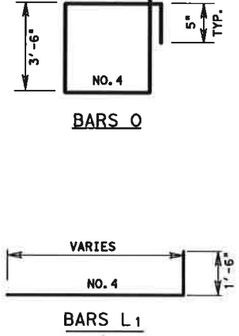



ELEVATION

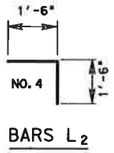



LIFTING CATCH

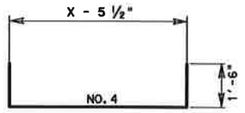
CONCRETE PIPE RISER COVER
OPTIONAL PRECAST CONCRETE LIFT-OFF COVER
(SUBSIDIARY)



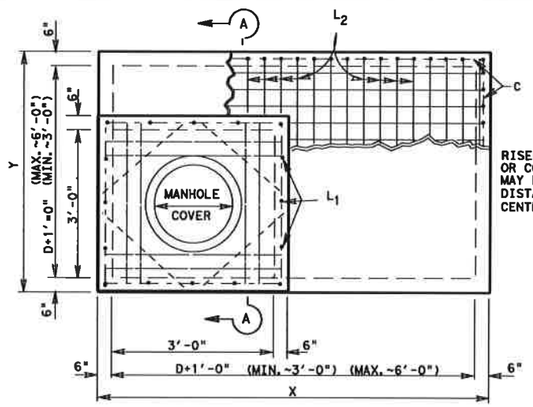

BARS L1




BARS L2

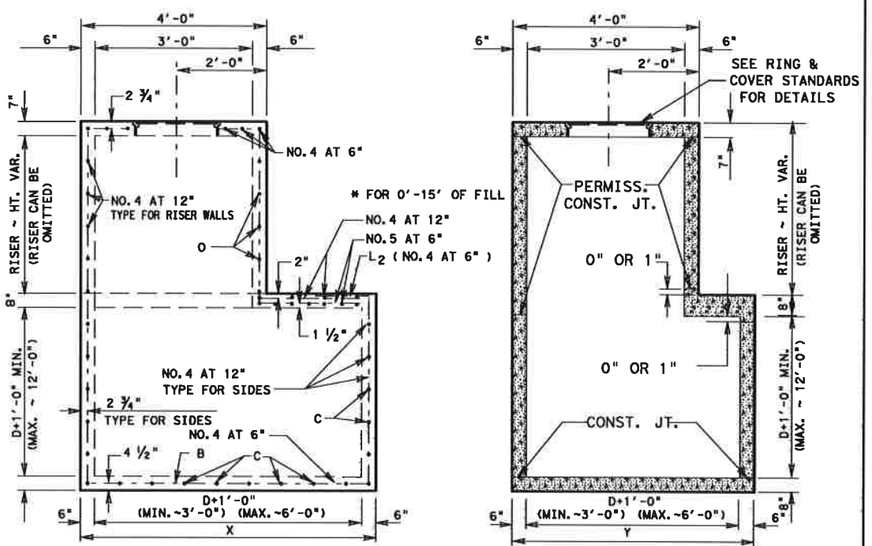



BARS B




NOTE:
RISER, EITHER CAST-IN-PLACE OR CONCRETE PIPE, MAY BE LOCATED IN ANY CORNER. DISTANCE TO ROAD ℄ IS FROM CENTER OF STRUCTURE.

PLAN

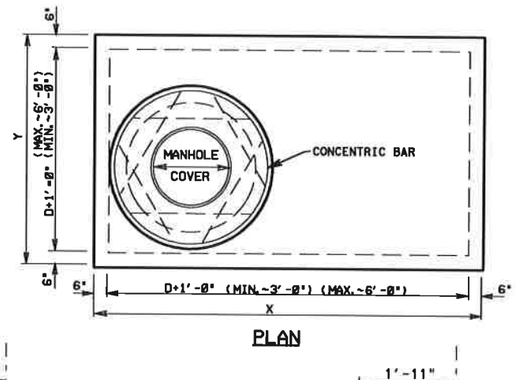



ELEVATION

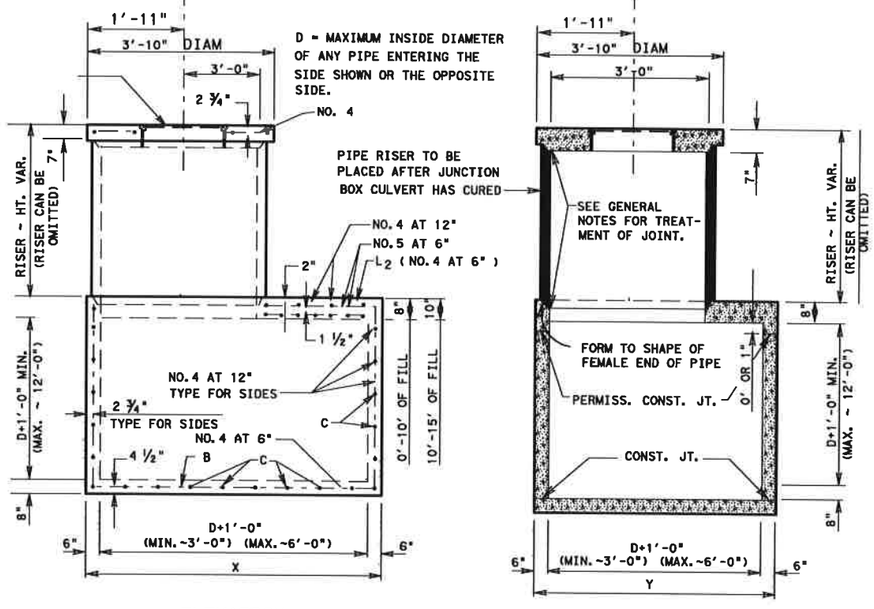



SECTION A-A

MANHOLE WITH CAST-IN-PLACE RISER




PLAN




ELEVATION




SECTION B-B

OPTIONAL MANHOLE WITH PIPE RISER

## GENERAL NOTES

UNLESS OTHERWISE SHOWN IN THE PLANS. PAYMENT WILL BE MADE FOR EACH MANHOLE OF THE TYPE M.
EXPOSED EDGES SHALL BE CHAMFERED 3/4".
ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES

SHOP DRAWINGS WILL NOT BE REQUIRED.

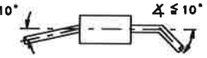
ALL MANHOLES LOCATED ON PAVED SURFACES WILL BE CONSTRUCTED WITH A COVER OF THE TYPE THAT WILL ENABLE IT TO BE BOLTED TO THE RING.

THE CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH MANHOLES OF EQUIVALENT STRUCTURAL DESIGN.

IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL. BLOCK-OUTS PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL. THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.

THE RISER MAY BE CONSTRUCTED OF REINFORCED CONCRETE AS SHOWN OR OF REINFORCED CONCRETE PIPE, CLASS III, IN ACCORDANCE WITH ASTM DESIGNATION C-76. IF PIPE IS USED, JOINTS SHALL CONFORM TO THE ITEM "REINFORCED CONCRETE PIPE CULVERTS". PRECAST CONCRETE LIFT OFF COVER MAY BE SUBSTITUTED FOR "RING AND COVER".

CONNECTING PIPES SHOULD WITHIN 10 DEG. OF NORMAL TO INLET GRATE IF NECESSARY. PIPE ELBOW OR CURBED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT.




PIPES MAY ENTER ALL WALLS. THE MAXIMUM LEGTH OF PIPE THAT CAN BE ACCOMODATED IS 60". MORE THAN ONE PIPE MAY ENTER A SIDE SUBJECT TO THE MAXIMUM BOX DIMENSIONS SHOWN. THE CLEAR DISTANCE BETWEEN ADJACEMENT PIPES SHOULD BE 9" MINIMUM.

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PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

# TYPE "M" MANHOLE (JUNCTION BOX WITH ACCESS)

REV. 08/13

MANHOLE2.DGN

| FED.RD DIV.NO. | PROJECT NO. | FILE NO. | SHEET NO. |
|---|---|---|---|
| 6 | | | |

| STATE | STATE DIST.NO. | COUNTY | CONT. | SECT. | JOB | HIGHWAY NO. |
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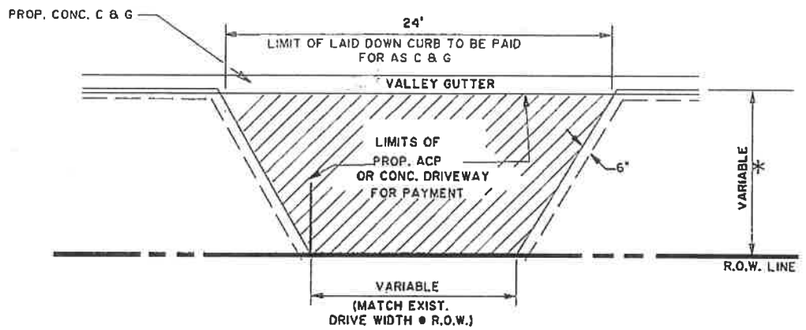
| TEXAS | 21 | | | | | |

N. T. S.

AD-76-Ø

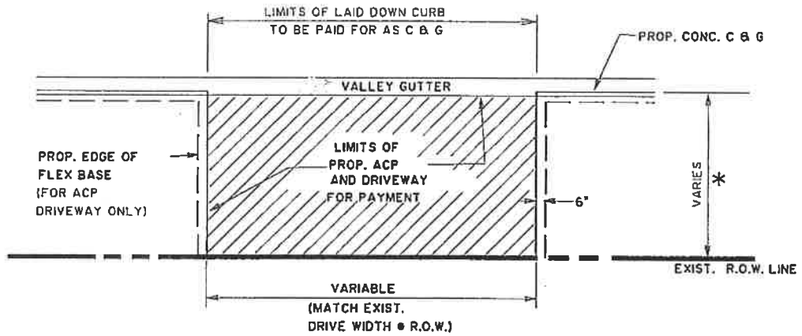



## PLAN OF PRIVATE AND COMMERCIAL DRIVES

(W/DRIVE LESS THAN 24' @ R.O.W. LINE)

⊛ SEE NOTE BELOW

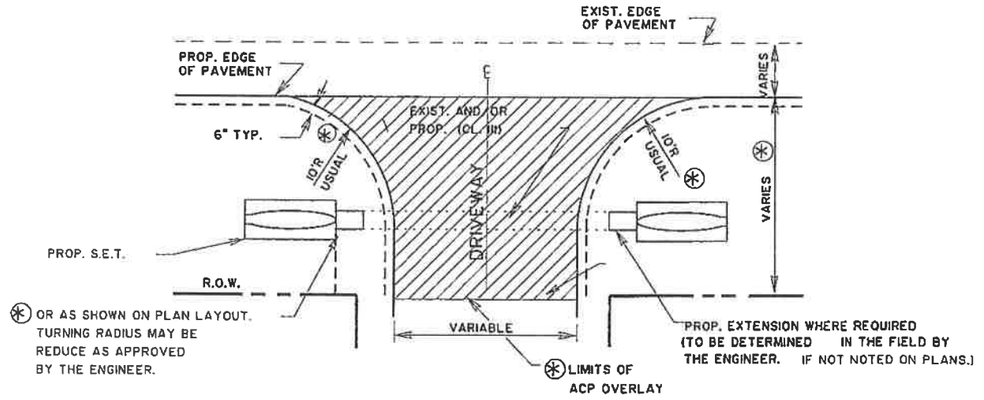
* SEE P&P SHEETS




## PLAN OF PRIVATE AND COMMERCIAL DRIVES

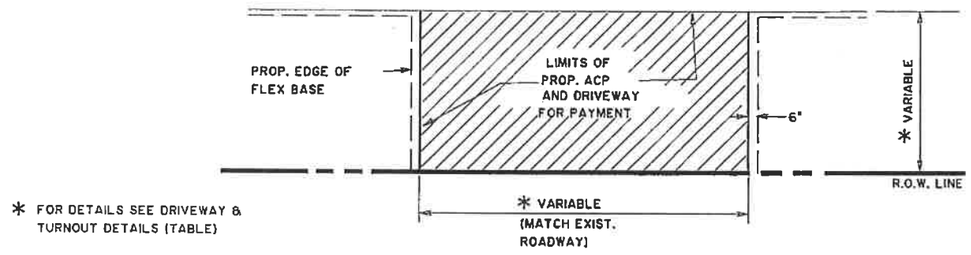
(W/DRIVE WIDTH EQUAL TO OR GREATER THAN 24')

# PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER




## PLAN OF PRIVATE AND COMMERCIAL DRIVES

*W/DRIVE LESS THAN 24' @ R.O.W. LINE)

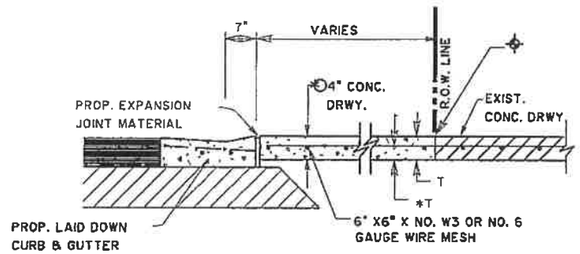



* FOR DETAILS SEE DRIVEWAY & TURNOUT DETAILS (TABLE)

## PLAN OF PRIVATE AND COMMERCIAL DRIVES

(W/DRIVE WIDTH EQUAL TO OR GREATER THAN 24')

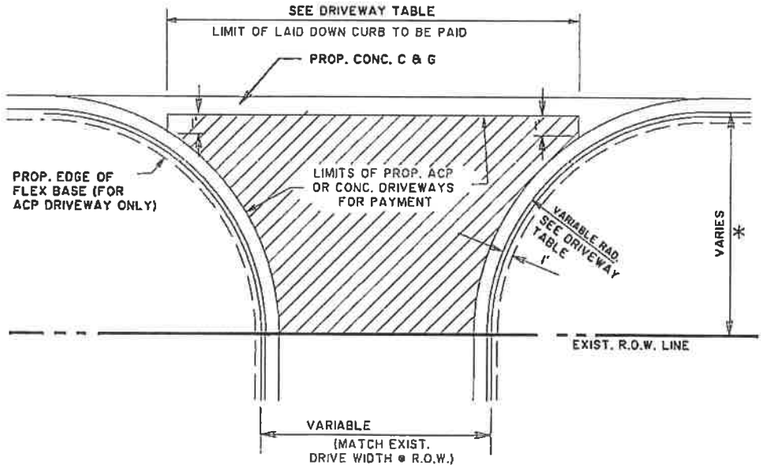
# PRIVATE AND COMMERCIAL DRIVES WITHOUT CURB & GUTTER




## TYPICAL CONCRETE DRIVEWAY SECTION

⊕ CONC. SHALL BE SAW CUT TO THE LIMITS OF REMOVAL WHERE APPLICABLE.

⊛ 6" FOR COMMERCIAL DRIVES




## PLAN OF PRIVATE AND COMMERCIAL DRIVES

SEE P&P SHEETS FOR LOCATIONS OF DRIVES

# PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER

⊛ NOTE:

## DRIVEWAY TYPES

TY PRB-1

EXIST. PAVED CALICHE AND /OR GRAVEL DRIVEWAYS TO BE SCARIFED AND RECONSTRUCTED WITH 3" NEW AND/OR SALVAGE FLEX. BASE TO MATCH THE PROPOSED WIDENED SECTION. THEN PRIMED AND SURFACED WITH 114#/SY ACP (TY "D")

TY PB-1

EXIST. UNPAVED PRIVATE OR COMMERCIAL DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" NEW AND/OR SALVAGE FLEX. BASE, PRIMED AND SURFACED WITH 114#/SY ACP.

TY P1

EXIST. PAVED DRIVEWAYS TO BE PAVED WITH 114#/SY ACP TY "D".

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# DRIVEWAY DETAILS

REV. 6/99

DRIVEWAY.DGN

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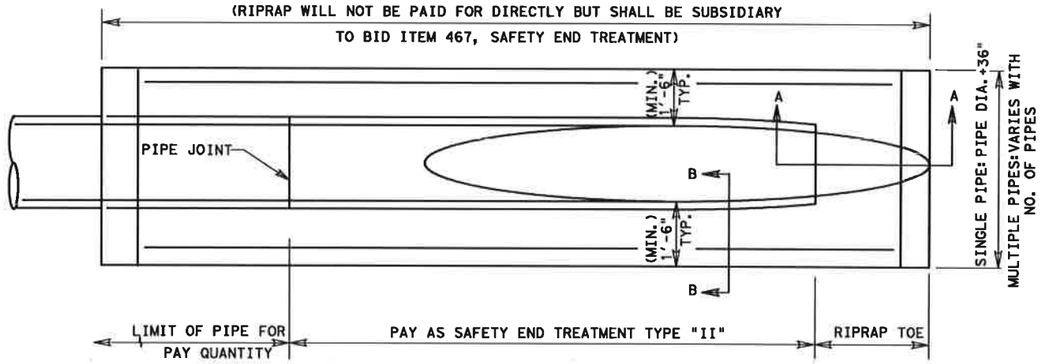
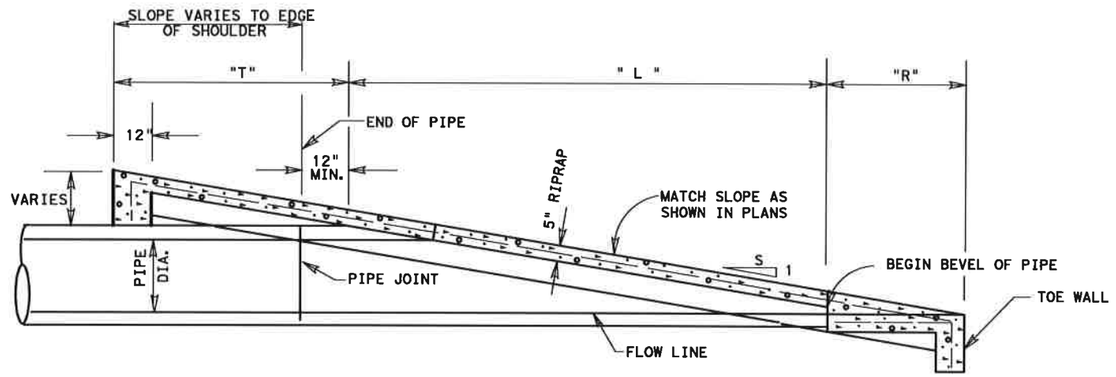
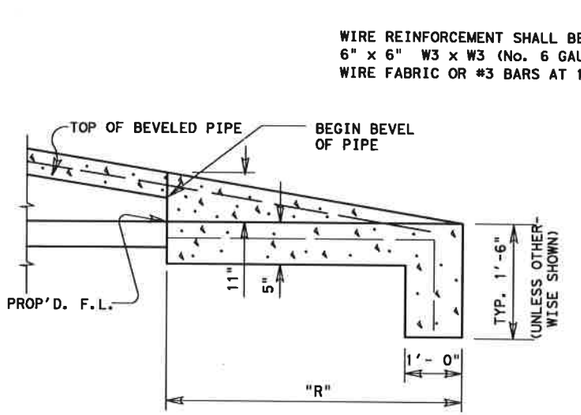


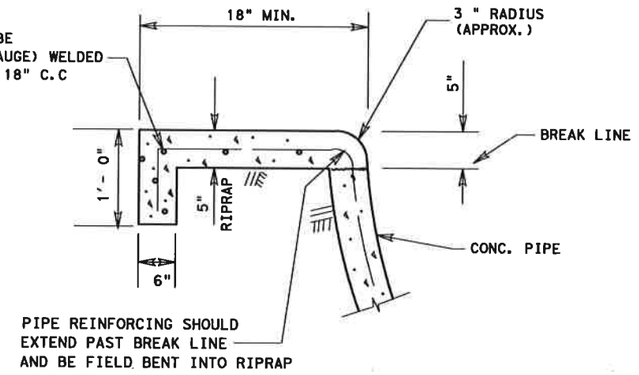

PLAN VIEW




ELEVATION
SAFETY END TREATMENT




SEC. A-A




SEC. B-B

SAFETY END TREATMENT PIPE LENGTHS

| PIPE DIA. (IN.) | "L" 3:1 | 4:1 | 5:1 | 6:1 |
|---|---|---|---|---|
| 12 | 2'-0" | 2'-8" | 3'-4" | 4'-0" |
| 15 | 2'-9" | 3'-8" | 4'-7" | 5'-6" |
| 18 | 3'-6" | 4'-8" | 5'-10" | 7'-0" |
| 24 | 5'-1½" | 6'-10" | 8'-6½" | 10'-3" |
| 30 | 6'-9" | 9-0" | 11'-3" | 13'-6" |
| 36 | 8'-6" | 11'-4" | 14'-2" | 17'-0" |
| 42 | 10'-1½" | 13'-6" | 16'-10½" | 20'-3" |
| 48 | 11'-9" | 15'-8" | 19'-7" | 23'-6" |

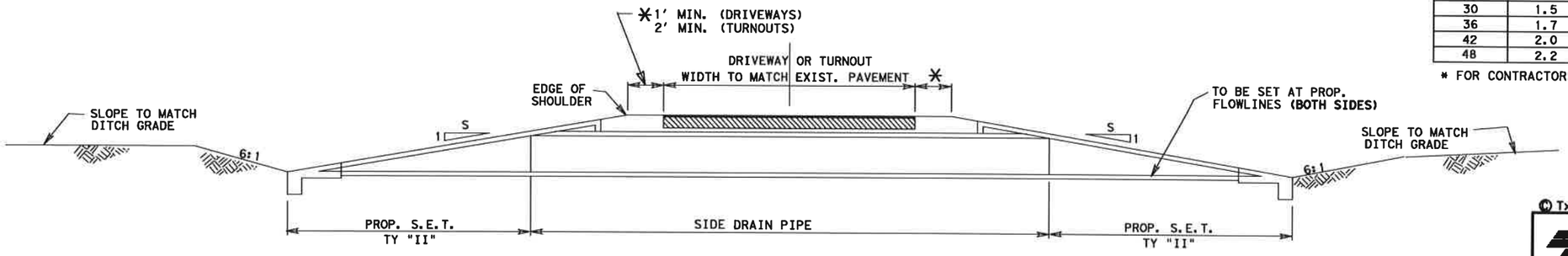
RIPRAP TOE LENGTHS

| SLOPE | " R " | "T" |
|---|---|---|
| 3:1 | 2'-9" | 1'-9" |
| 4:1 | 3'-8" | 2'-4" |
| 5:1 | 4'-7" | 2'-11" |
| 6:1 | 5'-6" | 3'-6" |
| | | |
| | | |
| | | |

ESTIMATED RIPRAP VOLUME (CY)

| PIPE DIA. (IN.) | 3:1 | 4:1 | 5:1 | 6:1 |
|---|---|---|---|---|
| 12 | .9 | 1.1 | 1.3 | 1.6 |
| 15 | 1.0 | 1.2 | 1.5 | 1.8 |
| 18 | 1.1 | 1.4 | 1.6 | 1.9 |
| 24 | 1.3 | 1.6 | 2.0 | 2.3 |
| 30 | 1.5 | 1.9 | 2.3 | 2.7 |
| 36 | 1.7 | 2.2 | 2.7 | 3.2 |
| 42 | 2.0 | 2.5 | 3.1 | 3.6 |
| 48 | 2.2 | 2.8 | 3.4 | 4.1 |

* FOR CONTRACTORS INFORMATION ONLY (SINGLE PIPE)




TYPICAL SIDEDRAIN SECTION

NOTE:

ALL EXCAVATION AND BACKFILL REQUIRED AT ALL PIPE SIDE DRAIN CONNECTIONS, ADJUSTMENTS AND/OR EXTENSIONS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE BID ITEMS INVOLVED AND IN ACCORDANCE WITH ITEM 400 "STRUCTURAL EXCAVATION".

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PHARR DISTRICT STANDARDS

TEXAS DEPARTMENT OF TRANSPORTATION

# SAFETY END TREATMENT DETAILS

REV. 11/10

SET. DGN

| FED. RD. DIV. NO. | STATE AID PROJECT NO. | | FILE NO. | | | SHEET NO. |
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| 6 | | | | | | |
| STATE | STATE DIST. NO. | COUNTY | CONT. | SECT. | JOB | HIGHWAY NO. |
| TEXAS | 21 | | | | | |

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## BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets", the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

## WORKER SAFETY APPAREL NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

| THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov |
|---|
| COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD) |
| DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) |
| MATERIAL PRODUCER LIST (MPL) |
| ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)" |
| STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD) |
| TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) |
| TRAFFIC ENGINEERING STANDARD SHEETS |

SHEET 1 OF 12

Texas Department of Transportation | Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

# BC(1)-13

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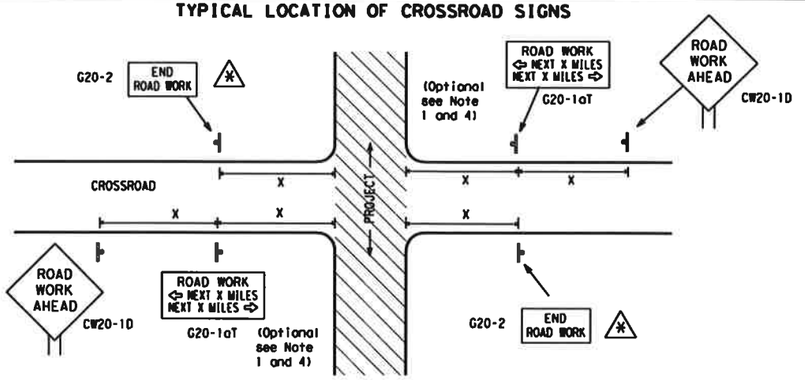
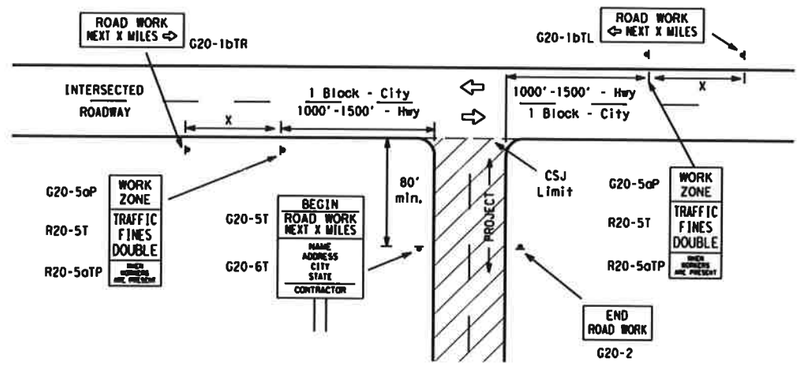
## TYPICAL LOCATION OF CROSSROAD SIGNS




* May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

## T-INTERSECTION




## CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

## TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING [1,5,6]

### SIZE

| Sign Number or Series | Conventional Road | Expressway/ Freeway |
|---|---|---|
| CW20[4], CW21, CW22, CW23, CW25 | 48" x 48" | 48" x 48" |
| CW1, CW2, CW7, CW8, CW9, CW11, CW14 | 36" x 36" | 48" x 48" |
| CW3, CW4, CW5, CW6, CW8-3, CW10, CW12 | 48" x 48" | 48" x 48" |

### SPACING

| Posted Speed | Sign Spacing "X" Δ |
|---|---|
| MPH | Feet (Apprx.) |
| 30 | 120 |
| 35 | 160 |
| 40 | 240 |
| 45 | 320 |
| 50 | 400 |
| 55 | 500[2] |
| 60 | 600[2] |
| 65 | 700[2] |
| 70 | 800[2] |
| 75 | 900[2] |
| 80 | 1000[2] |
| * | *[3] |

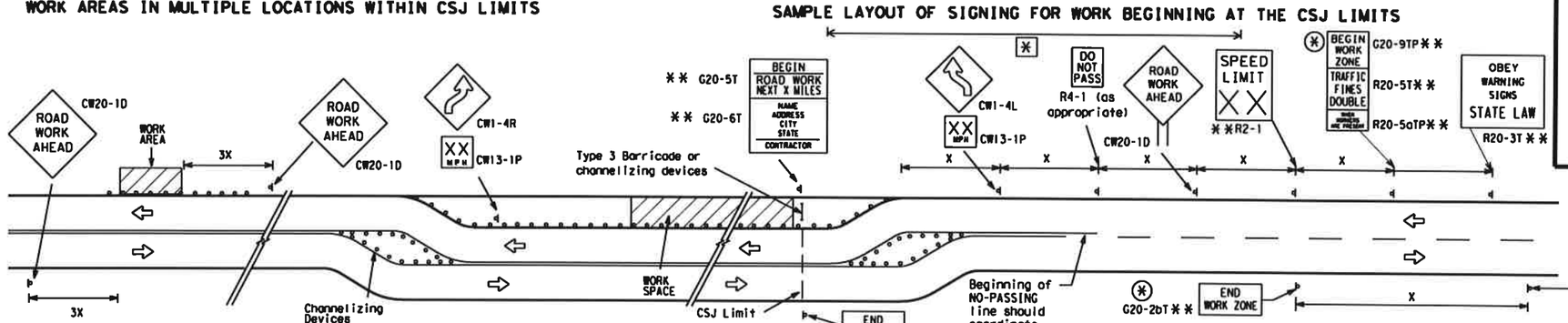
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

### GENERAL NOTES

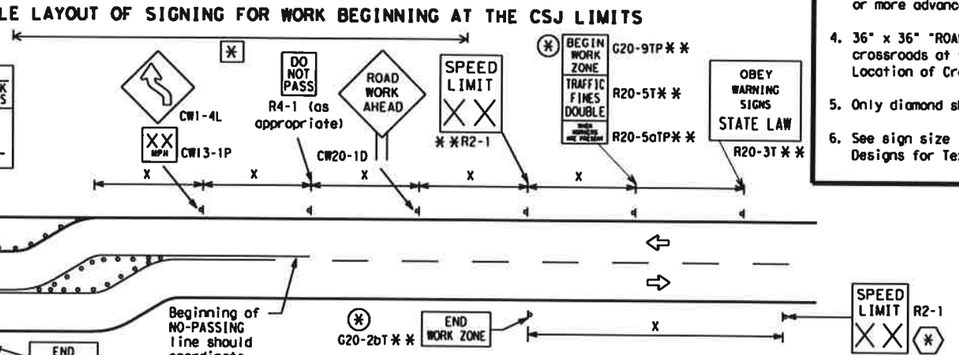
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

## WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

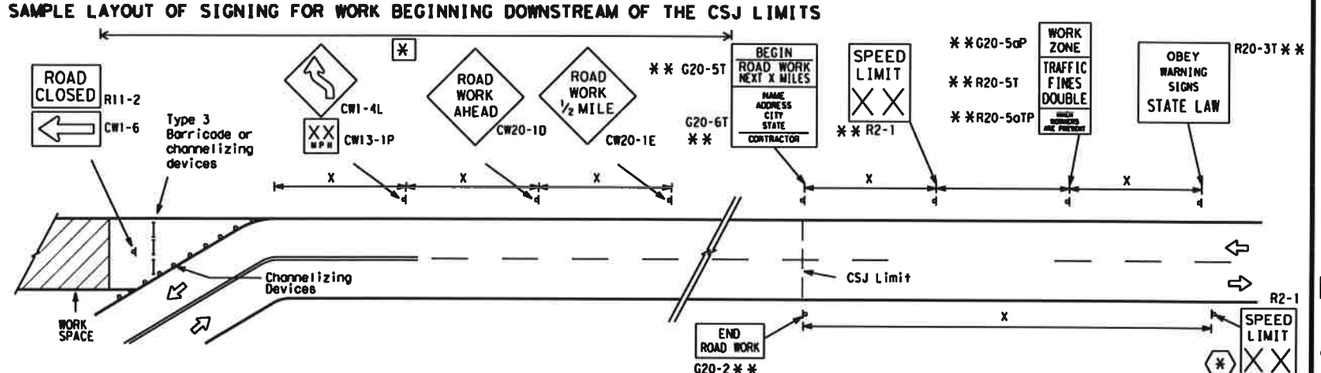



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

## SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS




## SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS




### NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

(*) The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

** Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

[*] Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.

(*) Contractor will install a regulatory speed limit sign at the end of the work zone.

| LEGEND | |
|---|---|
| ⊢⊣ | Type 3 Barricade |
| o o o | Channelizing Devices |
| ▬ | Sign |
| X | See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements. |



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PROJECT LIMIT

## BC(2)-13

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| REVISIONS 9-07 7-13 | DIST | COUNTY | | SHEET NO. |

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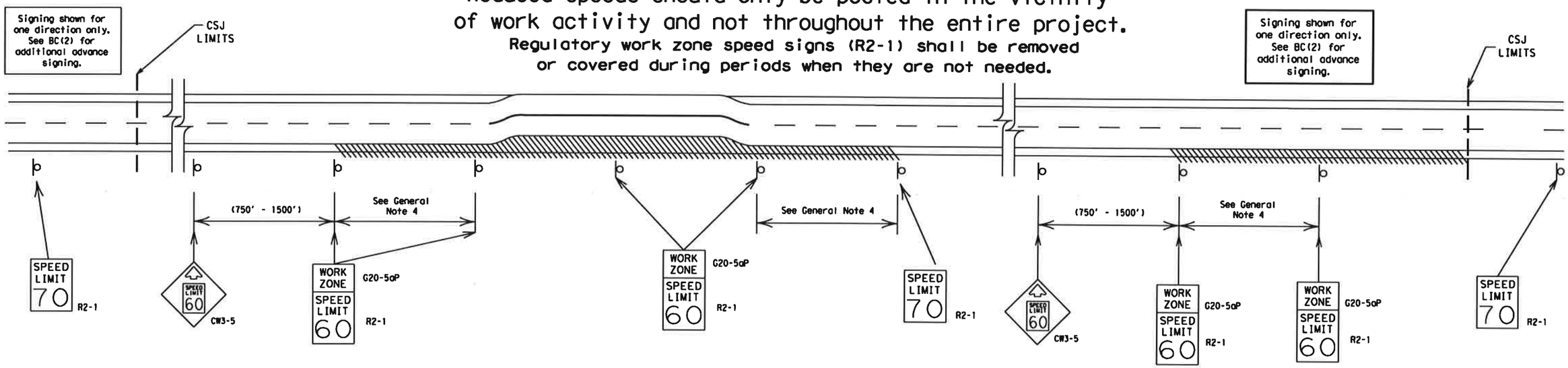
# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

**Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.**

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.




## GUIDANCE FOR USE:

### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

### SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

### GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.



Texas Department of Transportation | Traffic Operations Division Standard

## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

## BC(3)-13

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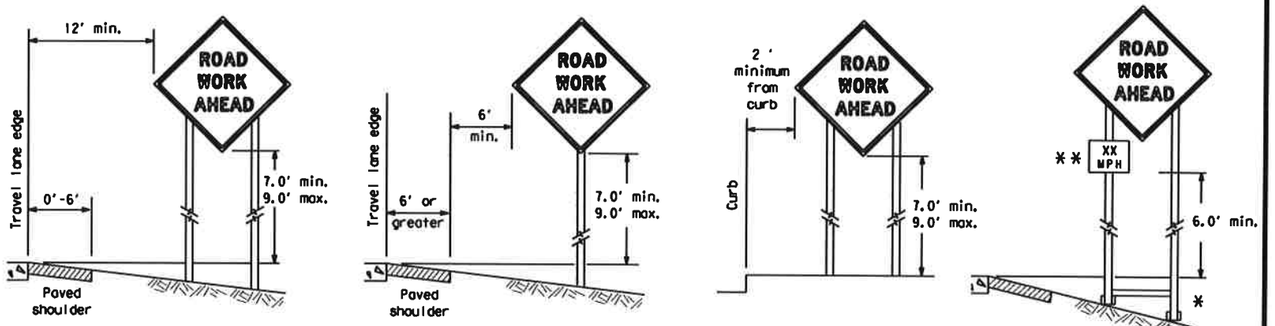
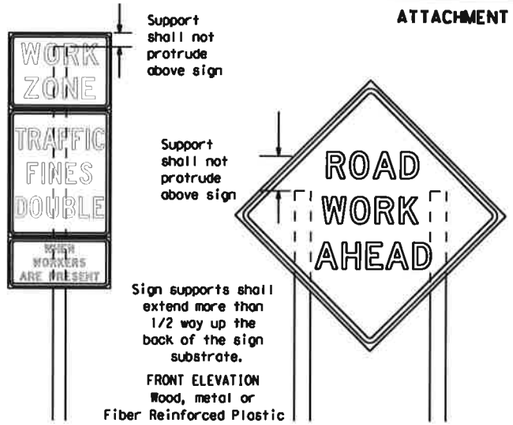
## TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



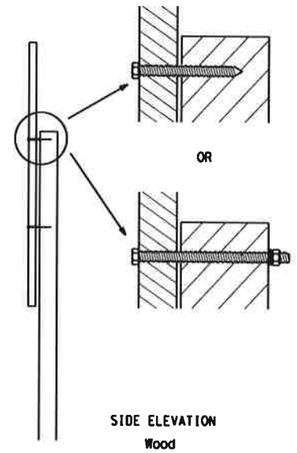

* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

## ATTACHMENT FOR SIGN SUPPORTS




Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

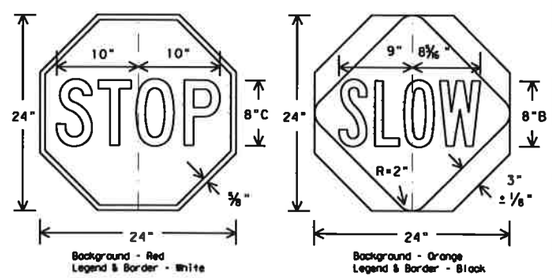



Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

**Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.**

## STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.




## CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

## GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

## DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

## SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

## SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

## SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

## REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type $B_{FL}$ or Type $C_{FL}$, shall be used for rigid signs with orange backgrounds.

## SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

## REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

## SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

## FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

# BC(4)-13

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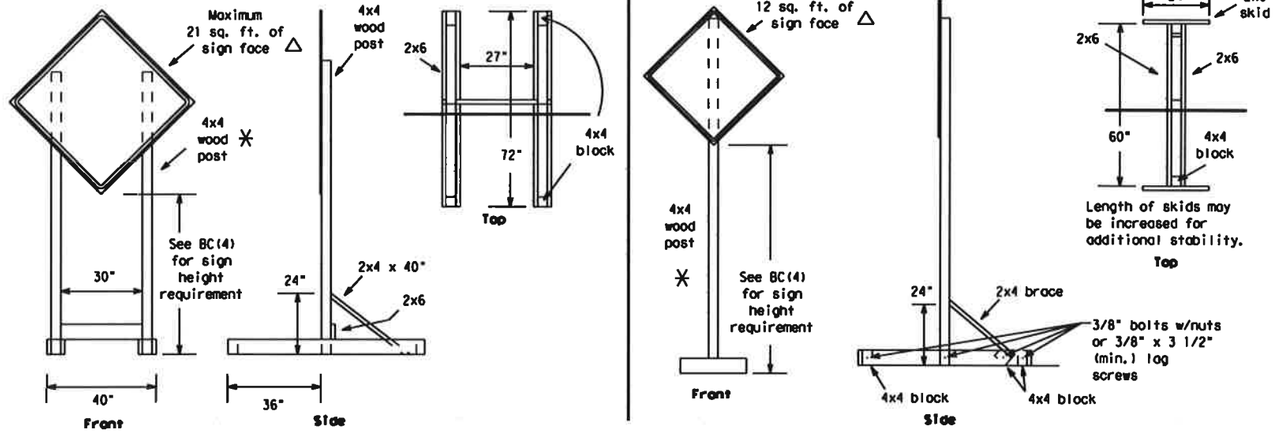
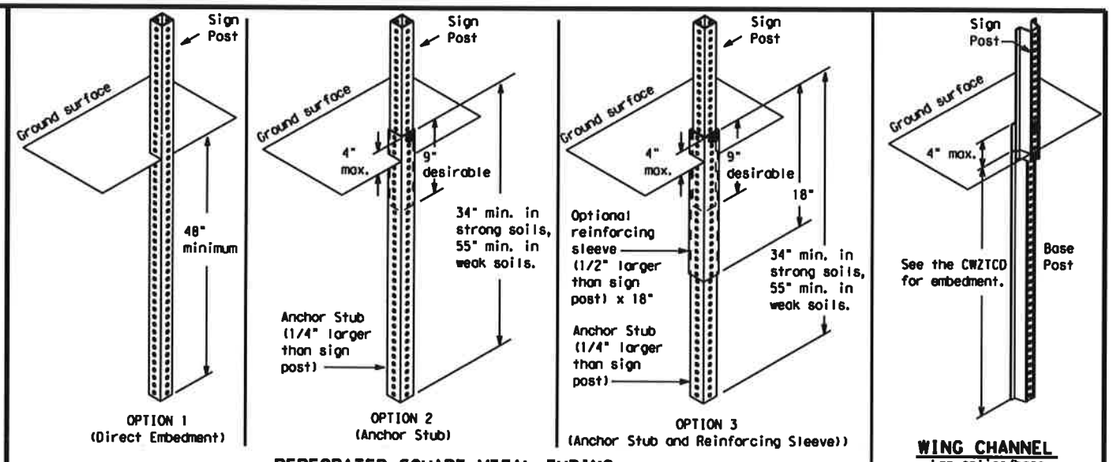



# SKID MOUNTED WOOD SIGN SUPPORTS

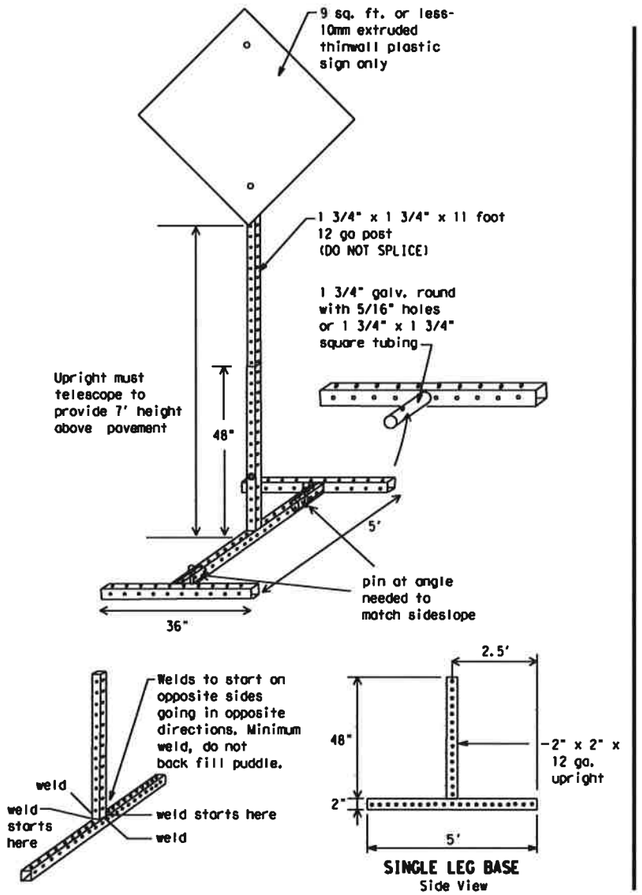
**LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □**

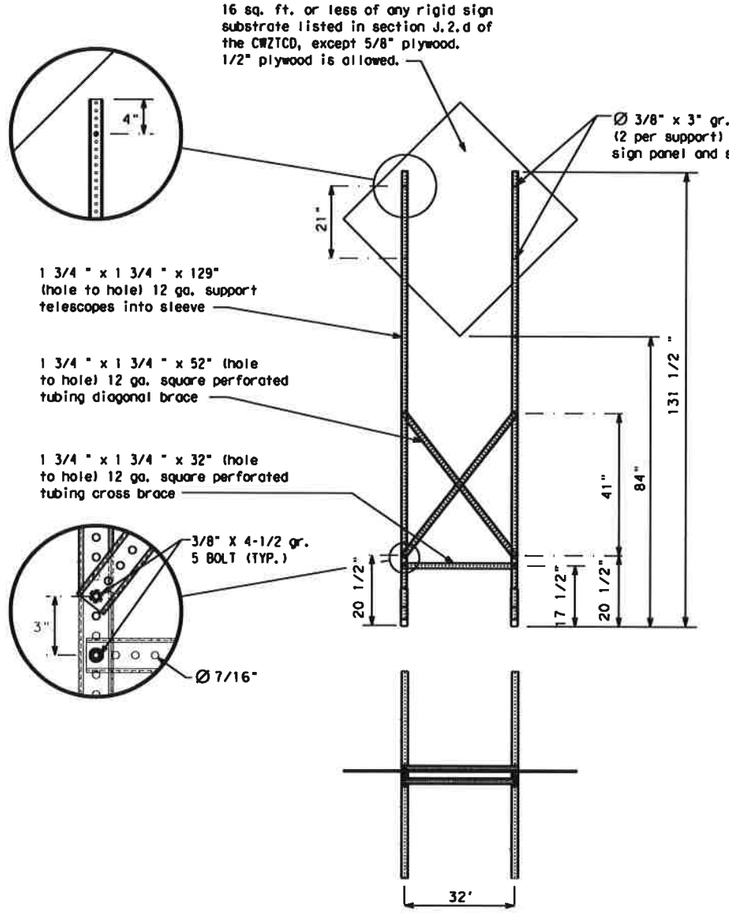


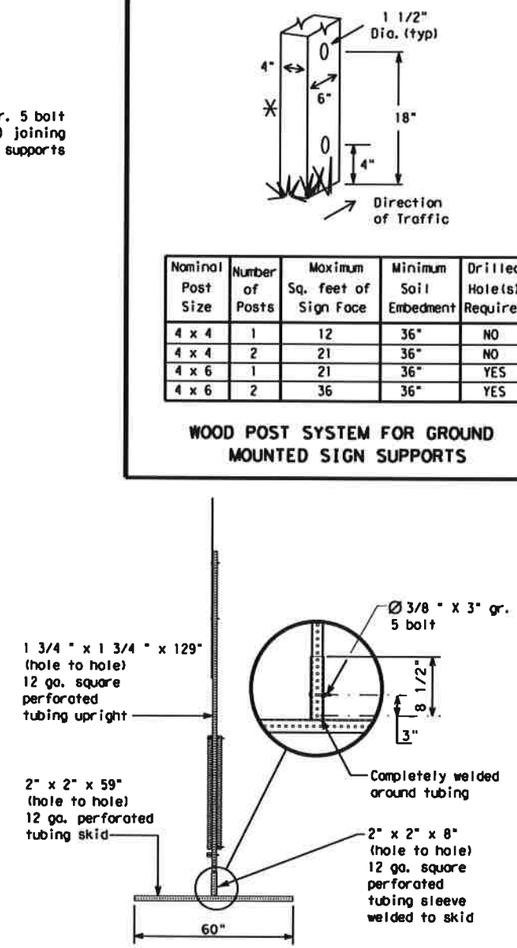

**PERFORATED SQUARE METAL TUBING**

# GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.







| Nominal Post Size | Number of Posts | Maximum Sq. feet of Sign Face | Minimum Soil Embedment | Drilled Hole(s) Required |
|---|---|---|---|---|
| 4 x 4 | 1 | 12 | 36" | NO |
| 4 x 4 | 2 | 21 | 36" | NO |
| 4 x 6 | 1 | 21 | 36" | YES |
| 4 x 6 | 2 | 36 | 36" | YES |

**WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS**

## WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

## OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

## GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

□ See BC(4) for definition of "Work Duration."

✳ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

△ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

# BC(5)-13

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# SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

## PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

| WORD OR PHRASE | ABBREVIATION |
|---|---|
| Access Road | ACCS RD |
| Alternate | ALT |
| Avenue | AVE |
| Best Route | BEST RTE |
| Boulevard | BLVD |
| Bridge | BRDG |
| Cannot | CANT |
| Center | CTR |
| Construction Ahead | CONST AHD |
| CROSSING | XING |
| Detour Route | DETOUR RTE |
| Do Not | DONT |
| East | E |
| Eastbound | (route) E |
| Emergency | EMER |
| Emergency Vehicle | EMER VEH |
| Entrance, Enter | ENT |
| Express Lane | EXP LN |
| Expressway | EXPWY |
| XXXX Feet | XXXX FT |
| Fog Ahead | FOG AHD |
| Freeway | FRWY, FWY |
| Freeway Blocked | FWY BLKD |
| Friday | FRI |
| Hazardous Driving | HAZ DRIVING |
| Hazardous Material | HAZMAT |
| High-Occupancy | HOV |
| Vehicle Highway | HWY |
| Hour(s) | HR, HRS |
| Information | INFO |
| It Is | ITS |
| Junction | JCT |
| Left | LFT |
| Left Lane | LFT LN |
| Lane Closed | LN CLOSED |
| Lower Level | LWR LEVEL |
| Maintenance | MAINT |

| WORD OR PHRASE | ABBREVIATION |
|---|---|
| Major | MAJ |
| Miles | MI |
| Miles Per Hour | MPH |
| Minor | MNR |
| Monday | MON |
| Normal | NORM |
| North | N |
| Northbound | (route) N |
| Parking | PKING |
| Road | RD |
| Right Lane | RT LN |
| Saturday | SAT |
| Service Road | SERV RD |
| Shoulder | SHLDR |
| Slippery | SLIP |
| South | S |
| Southbound | (route) S |
| Speed | SPD |
| Street | ST |
| Sunday | SUN |
| Telephone | PHONE |
| Temporary | TEMP |
| Thursday | THURS |
| To Downtown | TO DWNTN |
| Traffic | TRAF |
| Travelers | TRVLRS |
| Tuesday | TUES |
| Time Minutes | TIME MIN |
| Upper Level | UPR LEVEL |
| Vehicles (s) | VEH, VEHS |
| Warning | WARN |
| Wednesday | WED |
| Weight Limit | WT LIMIT |
| West | W |
| Westbound | (route) W |
| Wet Pavement | WET PVMT |
| Will Not | WONT |

Roadway designation = IH-number, US-number, SH-number, FM-number

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

### Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

## Phase 2: Possible Component Lists

### Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

### Location List

- AT FM XXXX
- BEFORE RAILROAD CROSSING
- NEXT X MILES
- PAST US XXX EXIT
- XXXXXXX TO XXXXXXX
- US XXX TO FM XXXX

### Warning List

- SPEED LIMIT XX MPH
- MAXIMUM SPEED XX MPH
- MINIMUM SPEED XX MPH
- ADVISORY SPEED XX MPH
- RIGHT LANE EXIT
- USE CAUTION
- DRIVE SAFELY
- DRIVE WITH CARE

### ** Advance Notice List

- TUE-FRI XX AM- X PM
- APR XX-XX X PM-X AM
- BEGINS MONDAY
- BEGINS MAY XX
- MAY X-X XX PM - XX AM
- NEXT FRI-SUN
- XX AM TO XX PM
- NEXT TUE AUG XX
- TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

### APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

### WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

### FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

# BC(6)-13

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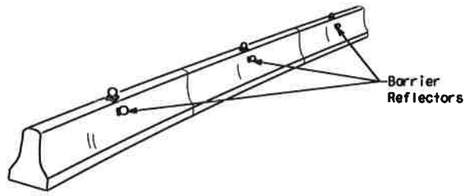
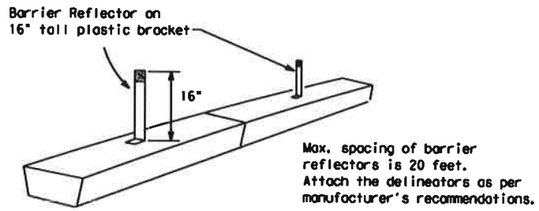
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

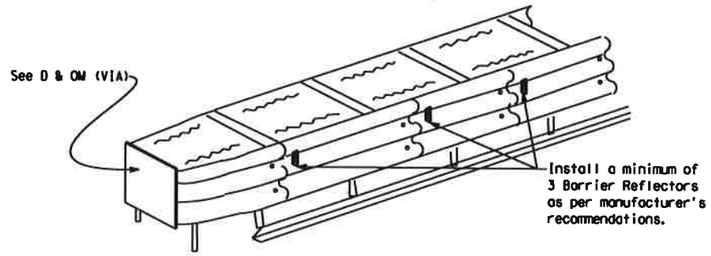



**CONCRETE TRAFFIC BARRIER (CTB)**

3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.




**LOW PROFILE CONCRETE BARRIER (LPCB)**

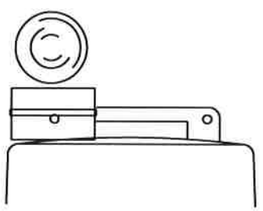



**DELINEATION OF END TREATMENTS**

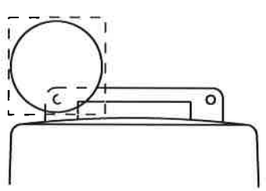
**END TREATMENTS FOR CTB'S USED IN WORK ZONES**

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

# BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

## WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type $B_{FL}$ or $C_{FL}$ Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

## WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

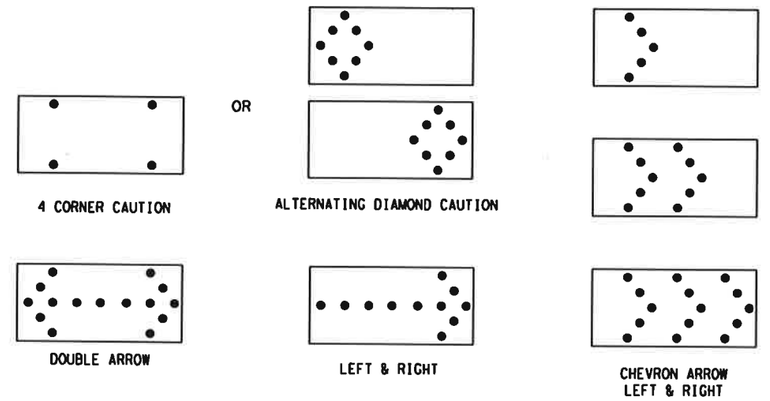
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

## WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:




5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

| REQUIREMENTS | | | |
|---|---|---|---|
| TYPE | MINIMUM SIZE | MINIMUM NUMBER OF PANEL LAMPS | MINIMUM VISIBILITY DISTANCE |
| B | 30 x 60 | 13 | 3/4 mile |
| C | 48 x 96 | 15 | 1 mile |

**ATTENTION**

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

# FLASHING ARROW BOARDS

## TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is on an extended distance from the TMA.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

# BC(7)-13

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## GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

## GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

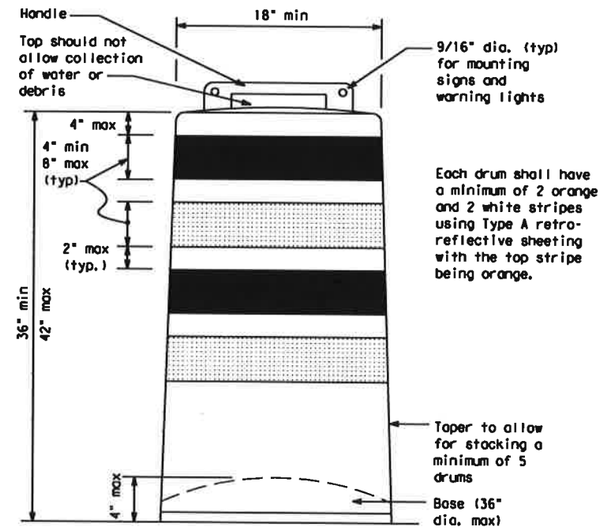
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

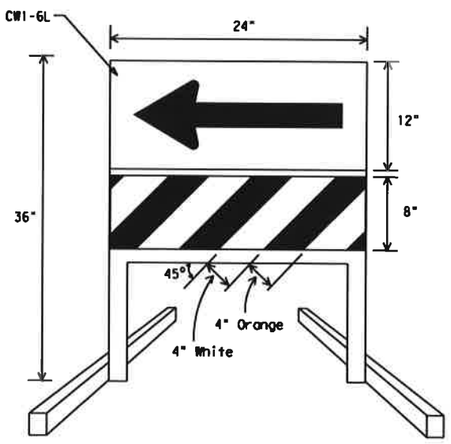
## RETROREFLECTIVE SHEETING

1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

## BALLAST

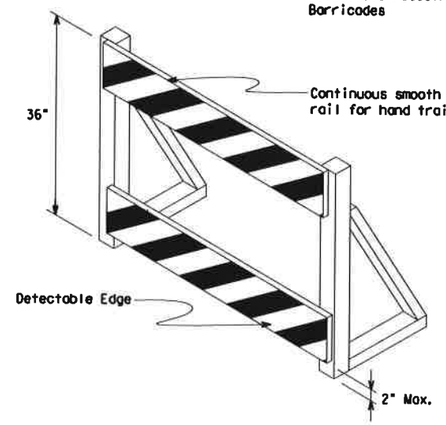
1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.




## DIRECTION INDICATOR BARRICADE

1. The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CWI-6) sign in the size shown with a black arrow on a background of Type $B_{FL}$ or Type $C_{FL}$ Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.




## DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.

18" x 24" Sign
(Maximum Sign Dimension)
Chevron CWI-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer

12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

**Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums**

## SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type $B_{FL}$ or Type $C_{FL}$ Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.



Texas Department of Transportation | Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

# BC(8)-13

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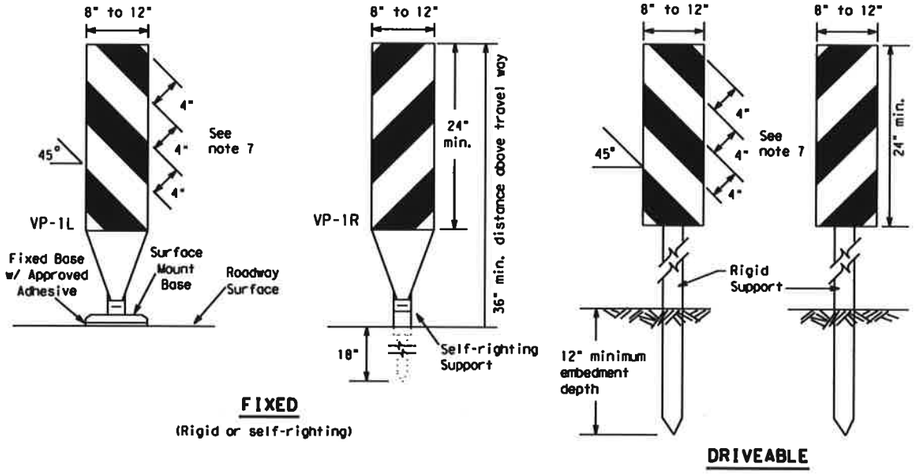
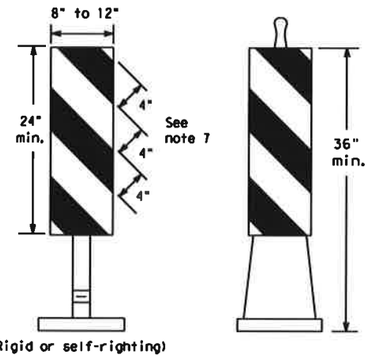



**FIXED**
(Rigid or self-righting)

**DRIVEABLE**

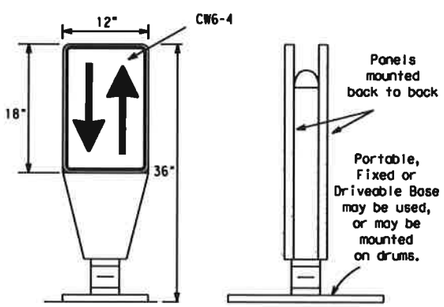



(Rigid or self-righting)

**PORTABLE**

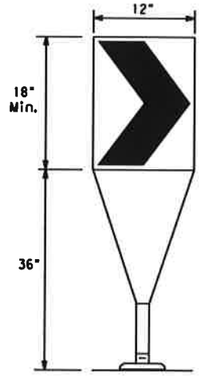
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

## VERTICAL PANELS (VPs)




1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type $B_{FL}$ or Type $C_{FL}$ conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

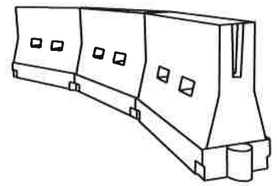
## OPPOSING TRAFFIC LANE DIVIDERS (OTLD)




Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type $B_{FL}$ or Type $C_{FL}$ conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

## CHEVRONS



## LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

## WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

## HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

## GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices On a Taper | On a Tangent |
|---|---|---|---|---|---|---|
| 30 | $L=\frac{WS^2}{60}$ | 150' | 165' | 180' | 30' | 60' |
| 35 | | 205' | 225' | 245' | 35' | 70' |
| 40 | | 265' | 295' | 320' | 40' | 80' |
| 45 | L=WS | 450' | 495' | 540' | 45' | 90' |
| 50 | | 500' | 550' | 600' | 50' | 100' |
| 55 | | 550' | 605' | 660' | 55' | 110' |
| 60 | | 600' | 660' | 720' | 60' | 120' |
| 65 | | 650' | 715' | 780' | 65' | 130' |
| 70 | | 700' | 770' | 840' | 70' | 140' |
| 75 | | 750' | 825' | 900' | 75' | 150' |
| 80 | | 800' | 880' | 960' | 80' | 160' |

**Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

## SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS



Texas Department of Transportation | Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

## BC(9)-13

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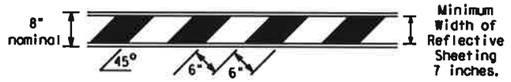
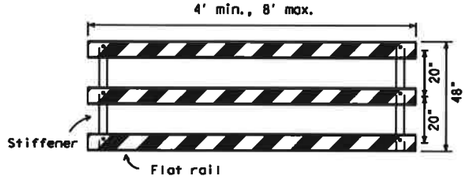
## TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



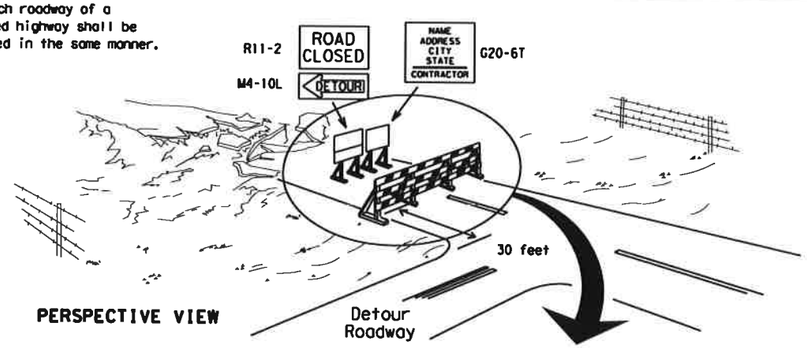

### TYPICAL STRIPING DETAIL FOR BARRICADE RAIL




Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

### TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

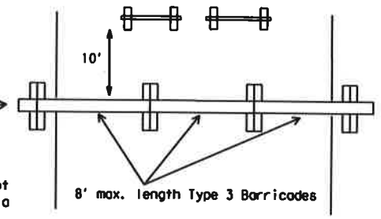
Each roadway of a divided highway shall be barricaded in the same manner.




PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

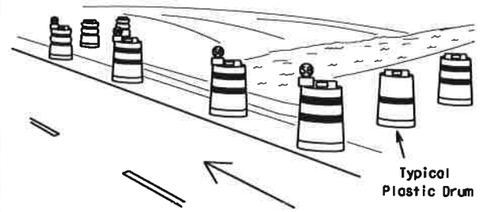
Barricade striping should slant downward in the direction of detour.




PLAN VIEW

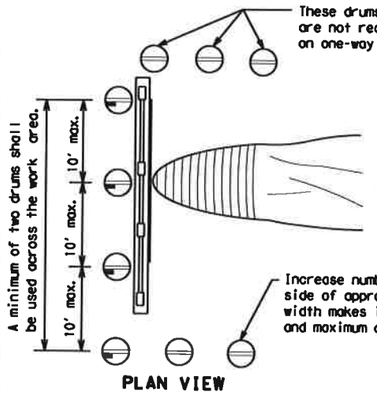
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

### TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION




PERSPECTIVE VIEW

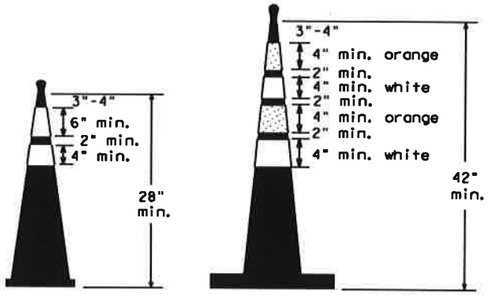
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.




PLAN VIEW

| LEGEND | |
|---|---|
| | Plastic drum |
| | Plastic drum with steady burn light or yellow warning reflector |
| SB | Steady burn warning light or yellow warning reflector |

### CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

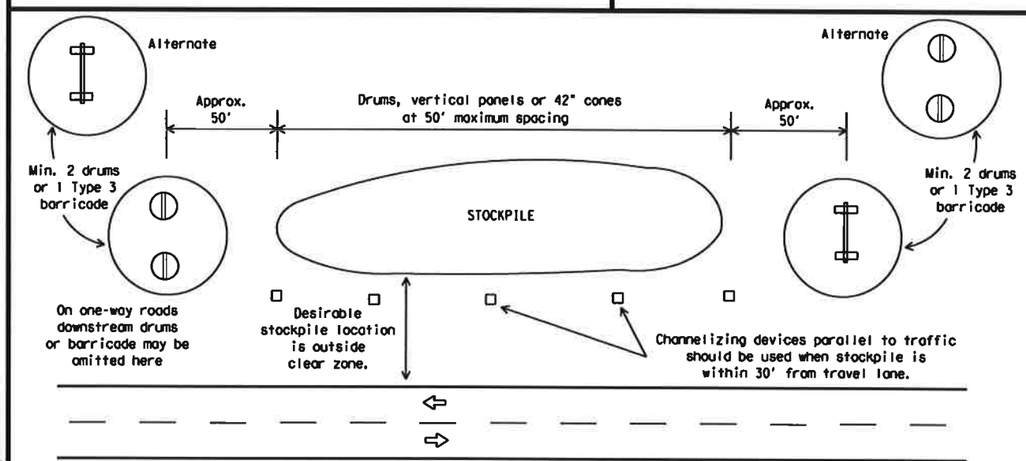



Two-Piece cones | One-Piece cones | Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

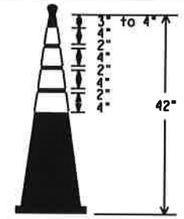
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.




### TRAFFIC CONTROL FOR MATERIAL STOCKPILES

THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.




EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

## BC(10)-13

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# WORK ZONE PAVEMENT MARKINGS

## GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

## RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

## PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

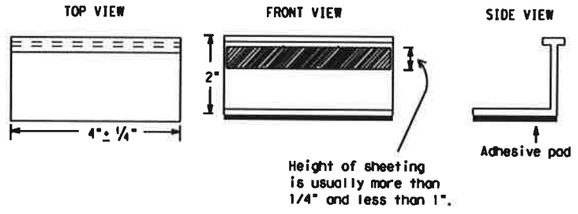
## MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

## REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

# Temporary Flexible-Reflective Roadway Marker Tabs




**STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE**

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

## RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

| DEPARTMENTAL MATERIAL SPECIFICATIONS | |
|---|---|
| PAVEMENT MARKERS (REFLECTORIZED) | DMS-4200 |
| TRAFFIC BUTTONS | DMS-4300 |
| EPOXY AND ADHESIVES | DMS-6100 |
| BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS | DMS-6130 |
| PERMANENT PREFABRICATED PAVEMENT MARKINGS | DMS-8240 |
| TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS | DMS-8241 |
| TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS | DMS-8242 |

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).



Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

## BC(11)-13

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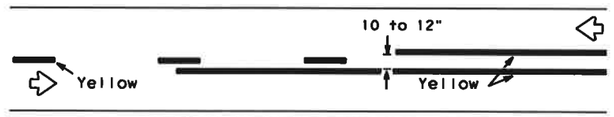
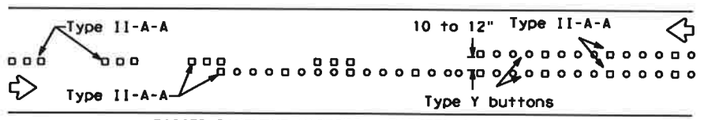
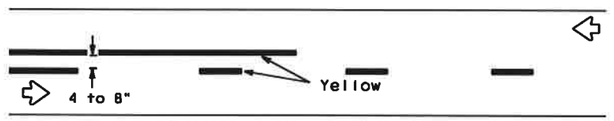
# PAVEMENT MARKING PATTERNS



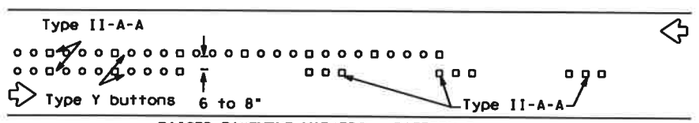

REFLECTORIZED PAVEMENT MARKINGS - PATTERN A




RAISED PAVEMENT MARKERS - PATTERN A



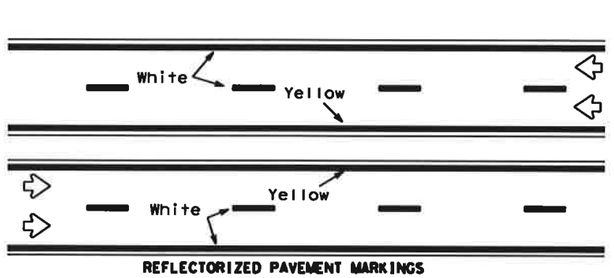

REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



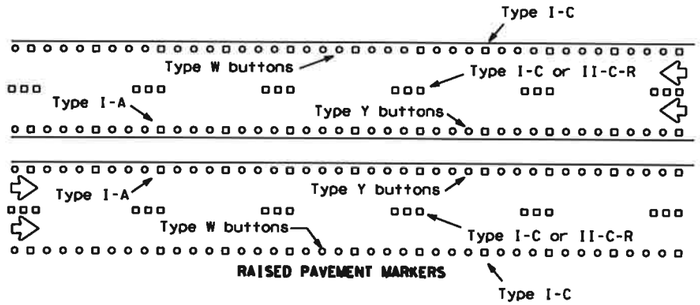

RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

## CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



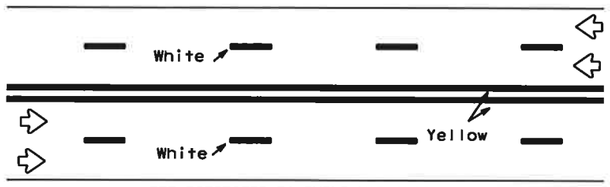

REFLECTORIZED PAVEMENT MARKINGS



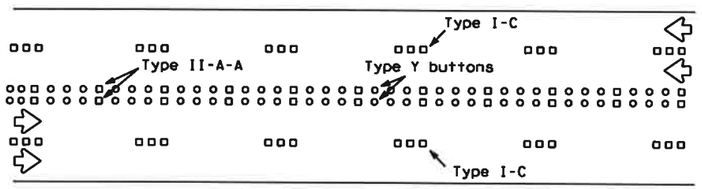

RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



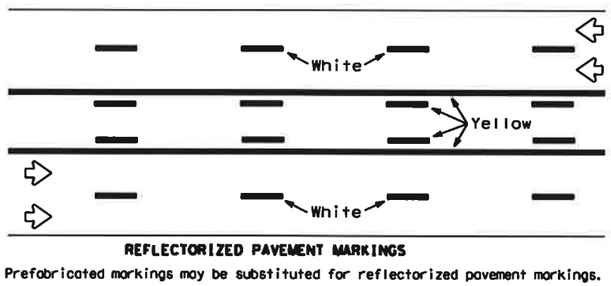

REFLECTORIZED PAVEMENT MARKINGS



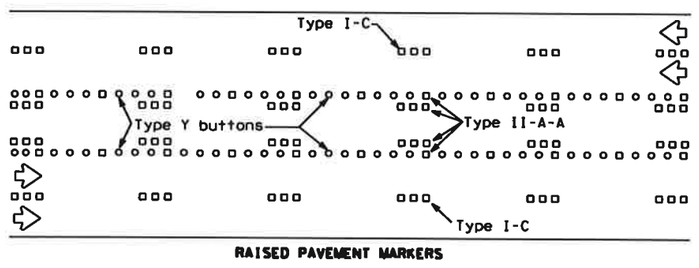

RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS




REFLECTORIZED PAVEMENT MARKINGS

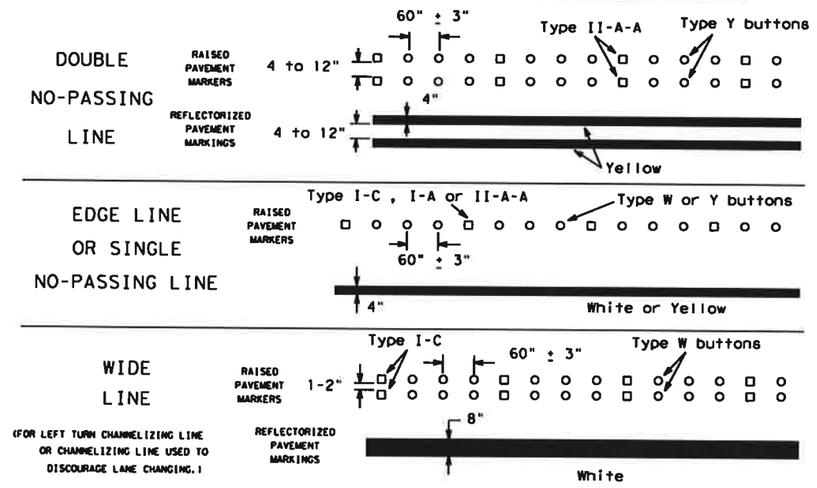



RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

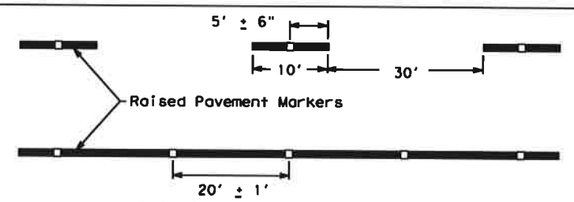
## TWO-WAY LEFT TURN LANE

# STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS




### REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.




Centerline only - not to be used on edge lines

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

SHEET 12 OF 12

Texas Department of Transportation

Traffic Operations Division Standard

# BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

## BC(12)-13

| FILE: bc-13.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT |
|---|---|---|---|---|
| ©TxDOT February 1998 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS 1-97 11-02 7-13 2-98 9-07 | DIST | COUNTY | | SHEET NO. |

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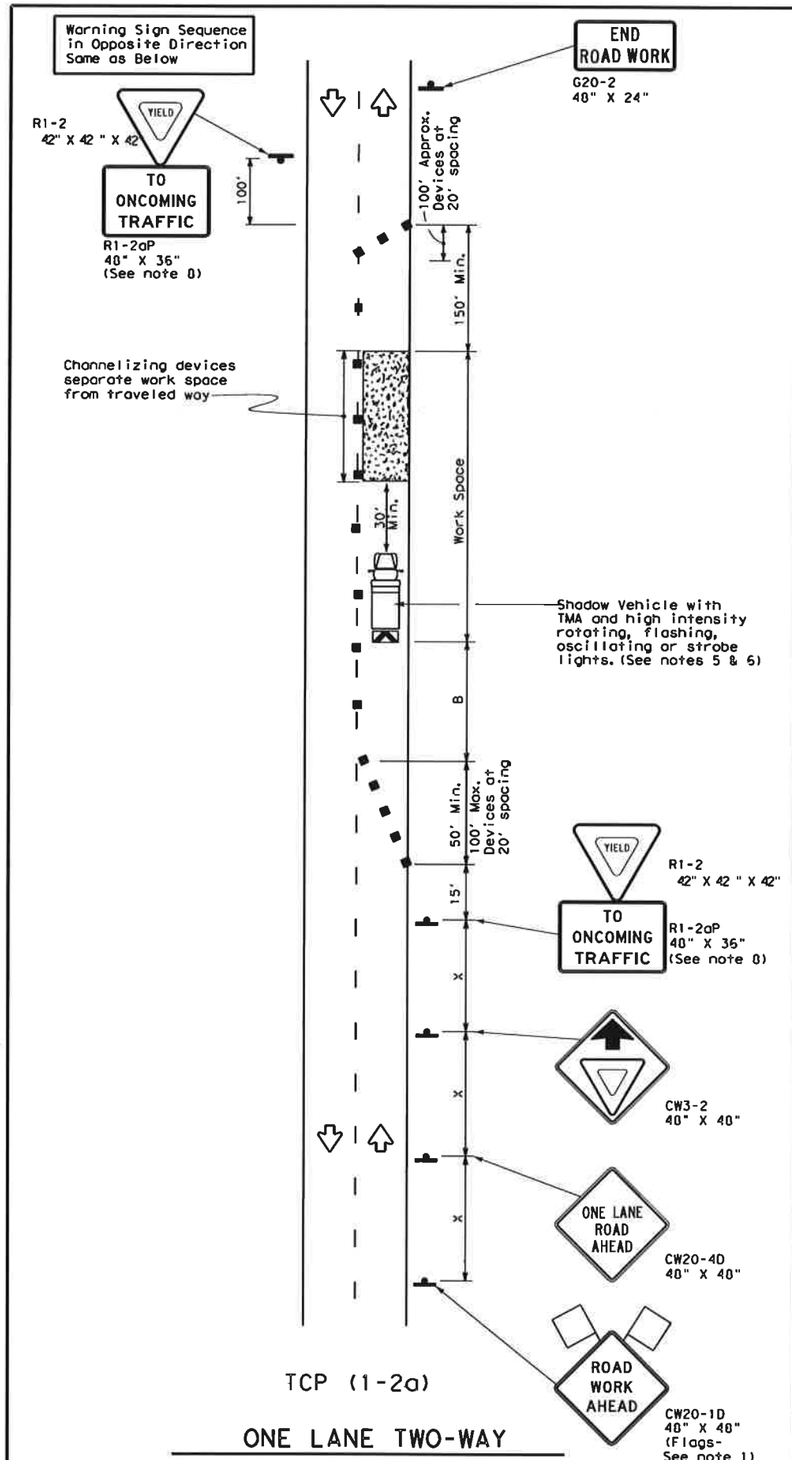
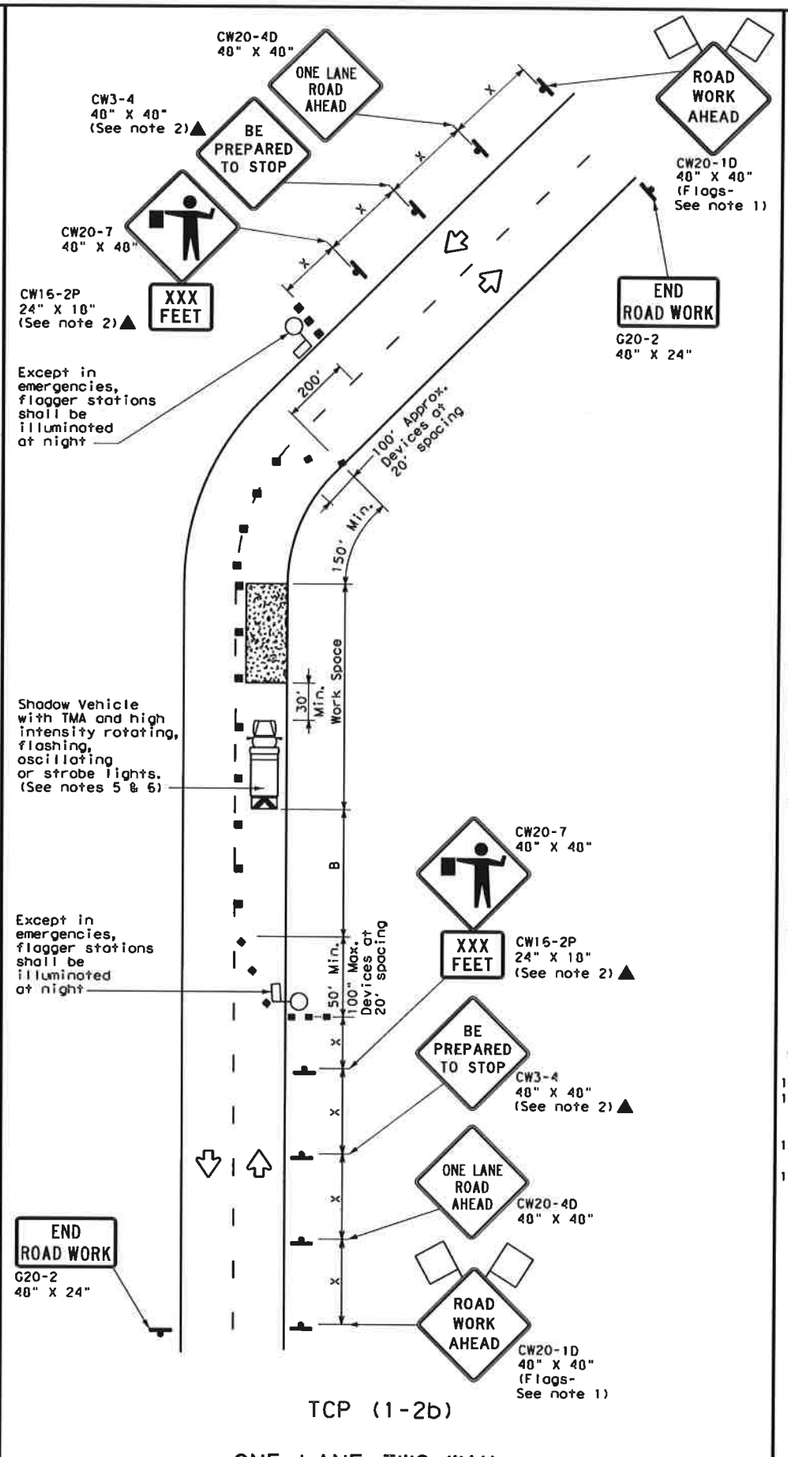



TCP (1-2a)

## ONE LANE TWO-WAY CONTROL WITH YIELD SIGNS

(Less than 2000 ADT - See note 7)




TCP (1-2b)

## ONE LANE TWO-WAY CONTROL WITH FLAGGERS

| LEGEND | | | |
|---|---|---|---|
| | Type 3 Barricade | | Channelizing Devices |
| | Heavy Work Vehicle | | Truck Mounted Attenuator (TMA) |
| | Trailer Mounted Flashing Arrow Board | M | Portable Changeable Message Sign (PCMS) |
| | Sign | | Traffic Flow |
| | Flag | | Flagger |

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" | Stopping Sight Distance |
|---|---|---|---|---|---|---|---|---|---|
| 30 | $L=\frac{WS^2}{60}$ | 150' | 165' | 180' | 30' | 60' | 120' | 90' | 200' |
| 35 | | 205' | 225' | 245' | 35' | 70' | 160' | 120' | 250' |
| 40 | | 265' | 295' | 320' | 40' | 80' | 240' | 155' | 305' |
| 45 | L=WS | 450' | 495' | 540' | 45' | 90' | 320' | 195' | 360' |
| 50 | | 500' | 550' | 600' | 50' | 100' | 400' | 240' | 425' |
| 55 | | 550' | 605' | 660' | 55' | 110' | 500' | 295' | 495' |
| 60 | | 600' | 660' | 720' | 60' | 120' | 600' | 350' | 570' |
| 55 | | 650' | 715' | 780' | 65' | 130' | 700' | 410' | 645' |
| 70 | | 700' | 770' | 840' | 70' | 140' | 800' | 475' | 730' |
| 75 | | 750' | 825' | 900' | 75' | 150' | 900' | 540' | 820' |

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

| TYPICAL USAGE | | | | |
|---|---|---|---|---|
| MOBILE | SHORT DURATION | SHORT TERM STATIONARY | INTERMEDIATE TERM STATIONARY | LONG TERM STATIONARY |
| | ✓ | ✓ | | |

## GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

### TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

### TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

# TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-12

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|---|---|---|---|

REVISIONS
4-90 2-12
2-94
1-97
4-98

| CONT | SECT | JOB | HIGHWAY |
|---|---|---|---|
| | | | |

| DIST | COUNTY | SHEET NO. |
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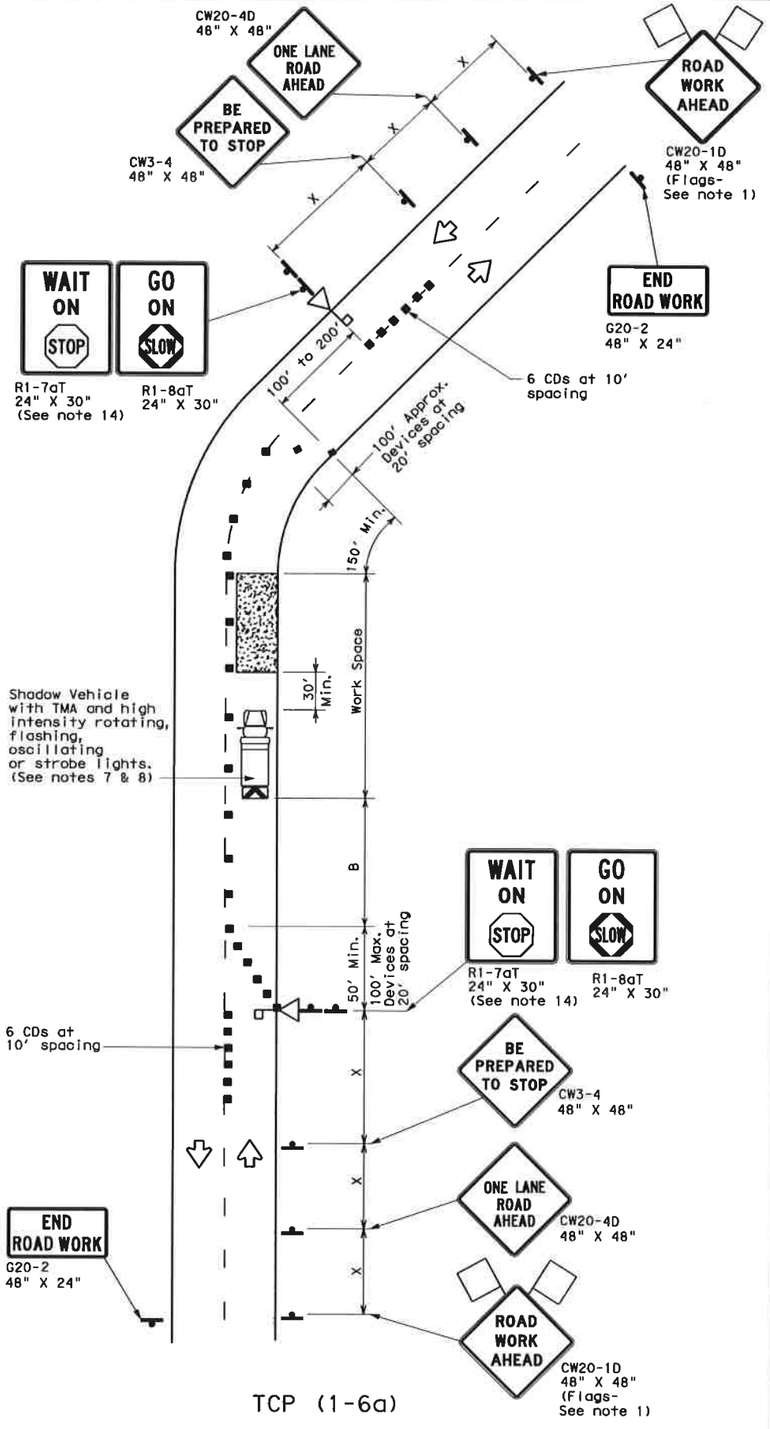
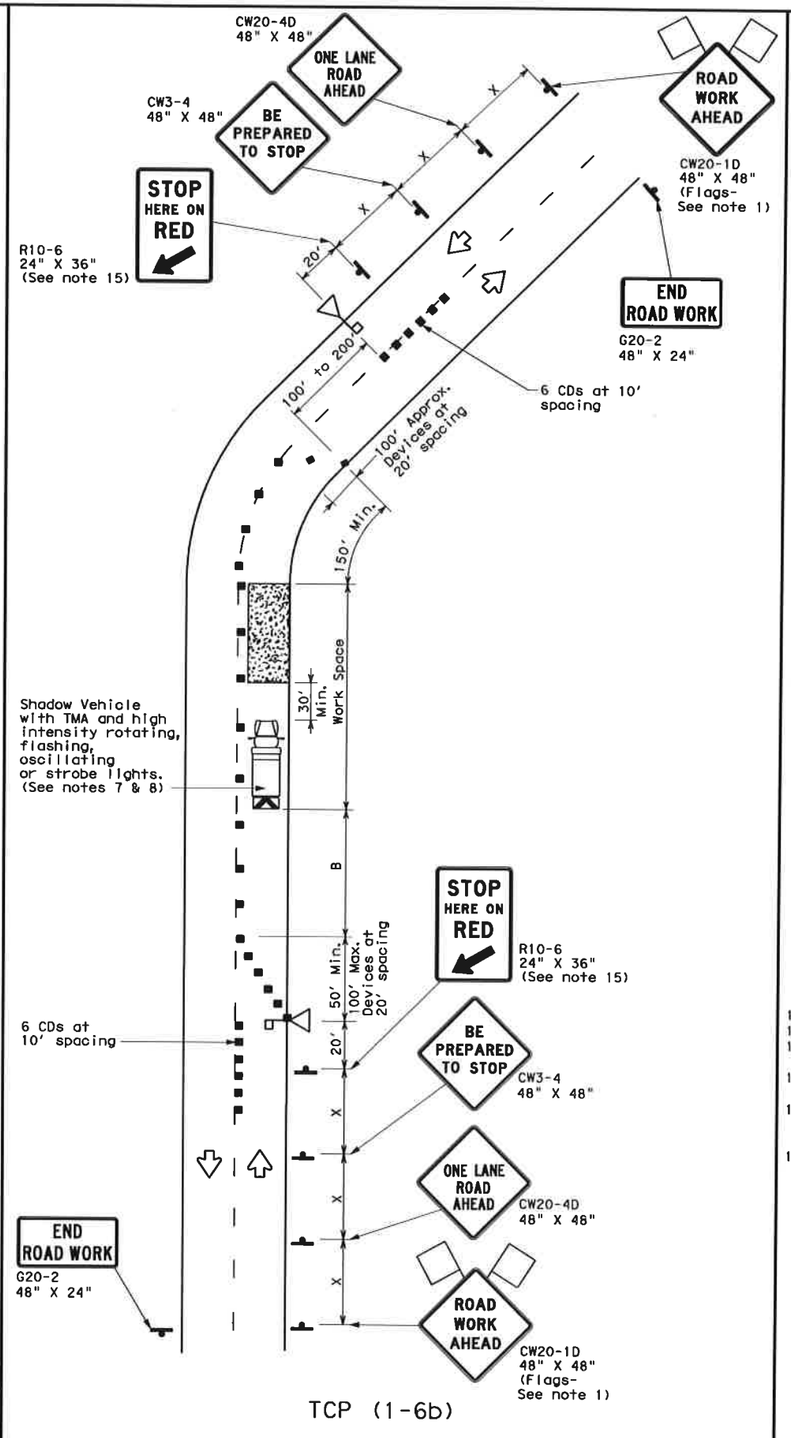



TCP (1-6a)

## ONE LANE TWO-WAY CONTROL WITH SIGNS/SLOW AFADs




TCP (1-6b)

## ONE LANE TWO-WAY CONTROL WITH RED/YELLOW LENS AFADs

| LEGEND | | | |
|---|---|---|---|
| | Type 3 Barricade | ■ ■ | Channelizing Devices (CDs) |
| | Heavy Work Vehicle | | Truck Mounted Attenuator (TMA) |
| | Automated Flagger Assistance Device (AFAD) | M | Portable Changeable Message Sign (PCMS) |
| | Sign | | Traffic Flow |
| | Flag | | Flagger |

| Posted Speed * | Formula | Minimum Desirable Taper Lengths ** 10' Offset | 11' Offset | 12' Offset | Suggested Maximum Spacing of Channelizing Devices: On a Taper | On a Tangent | Minimum Sign Spacing "X" Distance | Suggested Longitudinal Buffer Space "B" | Stopping Sight Distance |
|---|---|---|---|---|---|---|---|---|---|
| 30 | $L=\frac{WS^2}{60}$ | 150' | 165' | 180' | 30' | 60' | 120' | 90' | 200' |
| 35 | | 205' | 225' | 245' | 35' | 70' | 160' | 120' | 250' |
| 40 | | 265' | 295' | 320' | 40' | 80' | 240' | 155' | 305' |
| 45 | L=WS | 450' | 495' | 540' | 45' | 90' | 320' | 195' | 360' |
| 50 | | 500' | 550' | 600' | 50' | 100' | 400' | 240' | 425' |
| 55 | | 550' | 605' | 660' | 55' | 110' | 500' | 295' | 495' |
| 60 | | 600' | 660' | 720' | 60' | 120' | 600' | 350' | 570' |
| 65 | | 650' | 715' | 780' | 65' | 130' | 700' | 410' | 645' |
| 70 | | 700' | 770' | 840' | 70' | 140' | 800' | 475' | 730' |
| 75 | | 750' | 825' | 900' | 75' | 150' | 900' | 540' | 820' |

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

| TYPICAL USAGE | | | | |
|---|---|---|---|---|
| MOBILE | SHORT DURATION | SHORT TERM STATIONARY | INTERMEDIATE TERM STATIONARY | LONG TERM STATIONARY |
| | ✓ | ✓ | | |

## GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. AFADs shall only be used in situations where there is one lane of approaching traffic in the direction to be controlled.
3. Adequate stopping sight distance must be provided to each AFAD location for approaching traffic. (See table above).
4. Each AFAD shall be operated by a qualified/certified flagger. Flaggers operating AFADs shall not leave them unattended while they are in use.
5. One flagger may operate two AFADs only when the flagger has an unobstructed view of both AFADs and of the approaching traffic in both directions.
6. When pilot cars are used, a flagger controlling traffic shall be located on each approach. AFADs shall not be operated by the pilot car operator.
7. All AFADs shall be equipped with gate arms with an orange or fluorescent red-orange flag attached to the end of the gate arm. The flag shall be a minimum of 16" square.
8. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
9. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
10. Flaggers should use two-way radios or other methods of communication to control traffic.
11. Length of work space should be based on the ability of flaggers to communicate.
12. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the AFAD.
13. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
14. The R1-7aT "WAIT ON STOP" sign and the R1-8aT "GO ON SLOW" sign shall be installed at the AFAD location on separate supports or they may be fabricated as one 48" x 30" sign. They shall not obscure the face of the STOP/SLOW AFAD.
15. The R10-6 "STOP HERE ON RED" arrow sign shall be offset so as not to obscure the lenses of the AFAD.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

# TRAFFIC CONTROL PLAN AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADS)

TCP(1-6)-12

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|---|---|---|---|---|
| | CONT | SECT | JOB | HIGHWAY |
| | DIST | COUNTY | | SHEET NO. |

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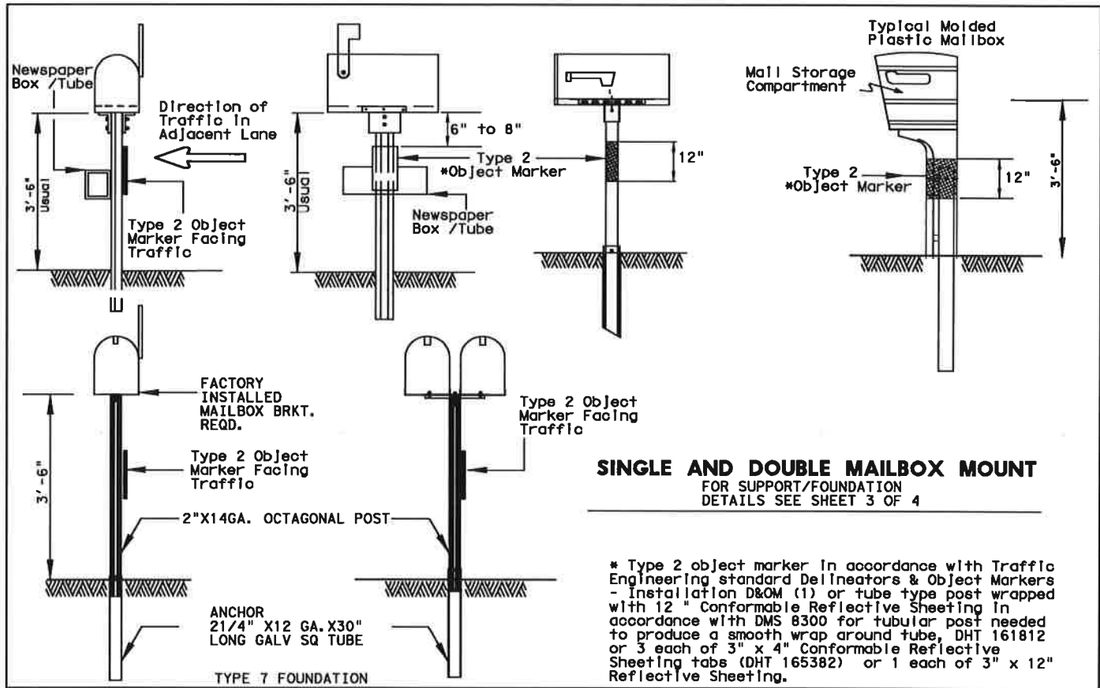
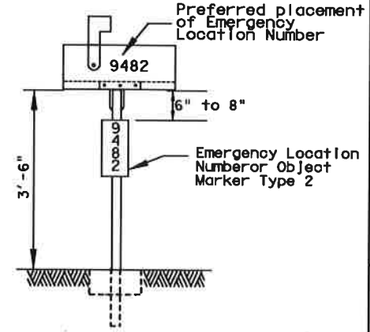



## SINGLE AND DOUBLE MAILBOX MOUNT

FOR SUPPORT/FOUNDATION DETAILS SEE SHEET 3 OF 4

* Type 2 object marker in accordance with Traffic Engineering standard Delineators & Object Markers - Installation D&OM (1) or tube type post wrapped with 12 " Conformable Reflective Sheeting in accordance with DMS 8300 for tubular post needed to produce a smooth wrap around tube, DHT 161812 or 3 each of 3" x 4" Conformable Reflective Sheeting tabs (DHT 165382) or 1 each of 3" x 12" Reflective Sheeting.

Note: Mailbox installations in sidewalk areas shall be in accordance with the Design Division standard PED-05 for pedestrian facilities.




## PLACEMENT OF EMERGENCY LOCATION NUMBER

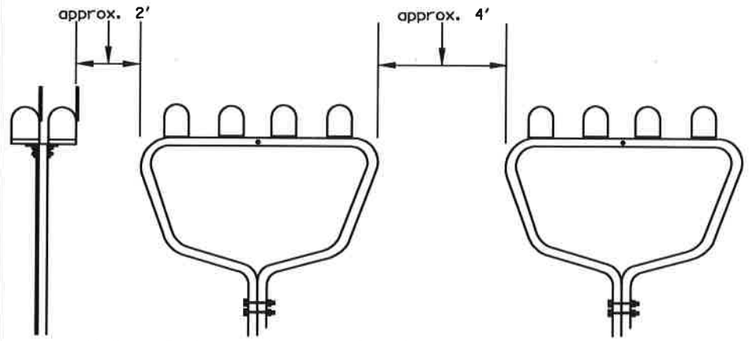
Location Number shall be placed on: 1. A yellow, type A plate with class 1 flat surface reflective sheeting in accordance with DMS 8600. The color of numbers shall be black. or 2: A green or blue plate with white numbers attached to post beside the object marker. Other contrasting color configuration, as approved , may be used. (Use Same type plate as used for the type 2 Object Marker. Recommended sign size is 6" by 15")

Mailboxes shall be made of light weight sheet metal or light weight plastic. Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.

| TYPICAL MAILBOX SIZE | | | | LIGHT WEIGHT MATERIAL | |
|---|---|---|---|---|---|
| | | | | SHEET METAL | **PLASTIC |
| | LENGTH | WIDTH | HEIGHT | MAXIMUM WEIGHT | |
| SIZE | INCHES | | | POUNDS | |
| SMALL | 19 ½ | 6 | 7 | 5 | 5 |
| MEDIUM | 22 ½ | 8 | 11 ½ | 7 | 7 |
| LARGE | 23 ½* | 11 ½* | 13 ½* | 10 | 10 |

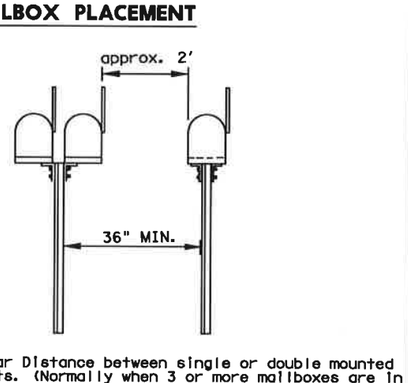
* Maximum allowed dimensions for mailbox
** Excluding Molded Plastic on 4 X 4 Post

## MAILBOX SIZES




4' Clear Distance between multiple installations and 2' clearance between double or single installations and the multiple installation. DHT #'s 164116 or 149339.

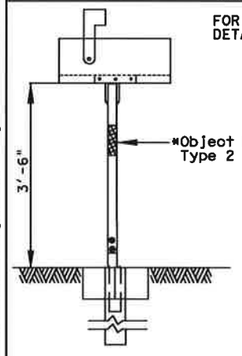
## MULTIPLE MAILBOX PLACEMENT

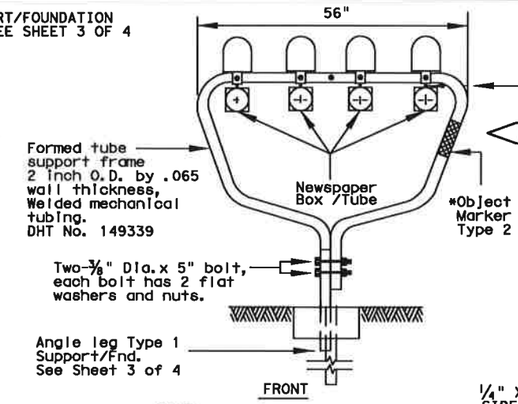


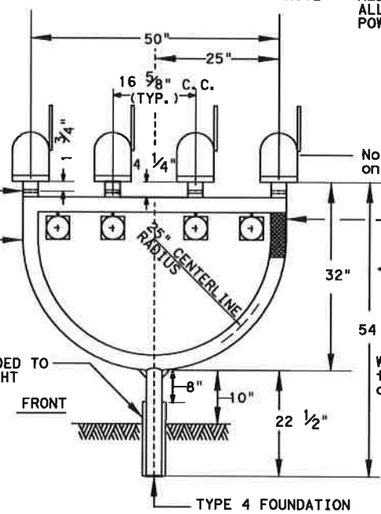

Clear Distance between single or double mounted posts. (Normally when 3 or more mailboxes are in one location, a multiple support is used).

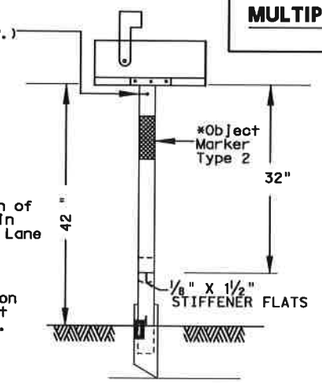
## SINGLE & DOUBLE MAILBOX PLACEMENT

FOR SUPPORT/FOUNDATION DETAILS SEE SHEET 3 OF 4



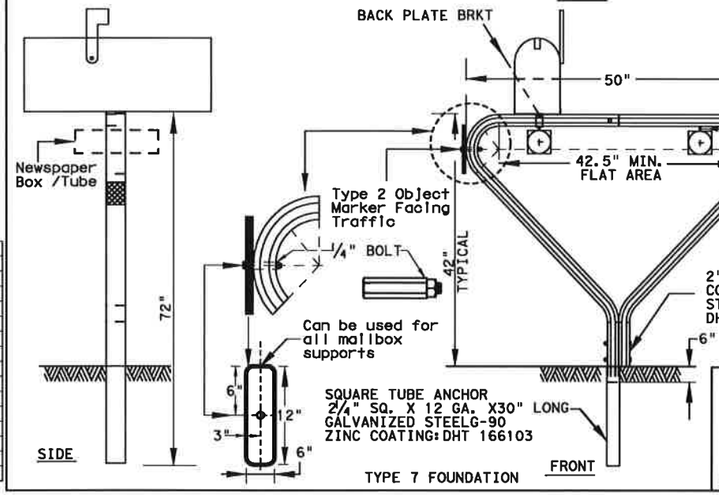




## DOUBLE AND MULTIPLE MAILBOX MOUNT

FOR SUPPORT/FOUNDATION DETAILS SEE SHEET 3 OF 4




## NEWSPAPER RECEPTACLE

A light weight receptacle for newspaper delivery can be attached to mailbox posts as shown on this page if the receptacle:

- Does not touch the mailbox.
- Does not present a hazard to traffic or delivery of the mail.
- Does not extend beyond the front of the mailbox.
- Does not display advertising, except the publication title.
- Newspaper receptacles on separate supports are prohibited.

## MULTIPLE MAILBOX MOUNT

### INDEX OF MAILBOX DETAIL SHEETS

1 of 4 MAILBOX MOUNTING AND SPACING
2 of 4 MAILBOX BRACKET CONNECTING DETAILS
3 Of 4 MAILBOX SUPPORT / FOUNDATION
4 of 4 TABLE OF DHT NUMBERS

FOR SUPPORT/FOUNDATION DETAILS SEE SHEET 3 OF 4

Note on DHT Number

See Table of Applicable DHT Numbers on sheet 4 of 4 for DHT description.

REVISIONS
04/03/06: Added New Multiply Mount, DHT: 164116.
04/03/06: Added general note numbers 6 & 7. Sheet & title block renumbered.
08/02/06: Added Maximum weight for typical mailbox sizes.
10/9/2009 Added new mailbox post
10/19/2009 Added sheet 4 of 4
01/07/2011 Added note disallowing newspaper receptacle separate support
01/07/2009: Added pedestrian facilities stds note.
07/07/2011: Revised note to allow more color options for emergency location number. Included type 2 object marker attachment details for the wrap around and tube type.

*Standard Plans*

*Texas Department of Transportation*
*Maintenance Division*

# MAILBOX MOUNTING AND SPACING

# MB-11(1)

Sheet 1 of 4

| FILE: MB10(1).DGN | DN: JEO | CK: LJB | DW: JEO | CK: RDB | MEG: |
|---|---|---|---|---|---|
| ©TxDOT JANUARY 2011 | DIST | FED REG | FEDERAL AID PROJECT | | SHEET |
| | --- | 6 | | | --- |
| | COUNTY | | CONTROL | SECT | JOB | HIGHWAY |
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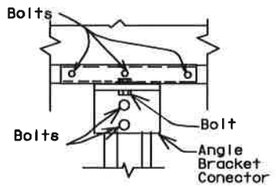
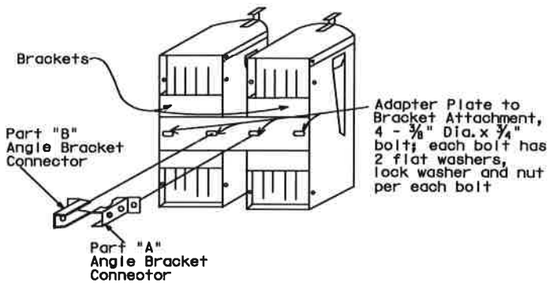


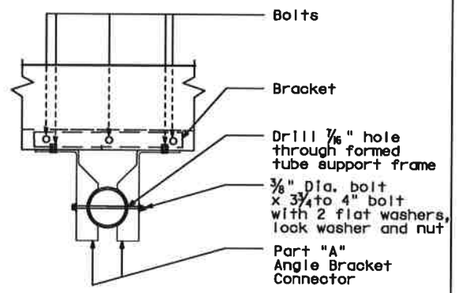

For bolt sizes see details below for "SMALL MAILBOX" and "MEDIUM AND LARGE MAILBOXES"

**SINGLE MAILBOX CONNECTION**

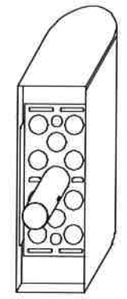



**DOUBLE MAILBOX CONNECTION**

(Not permitted for Large Mailboxes)

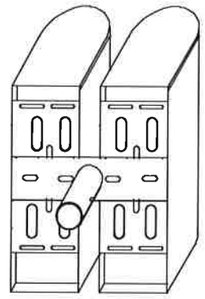



**MULTIPLE MAILBOX CONNECTION**



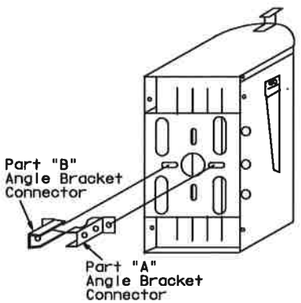
**WELDED SINGLE MAILBOX BRACKET CONNECTION**

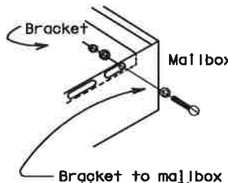
To be used with
2 3/8" OD RR or
thinwall Steel posts.



**WELDED DOUBLE MAILBOX BRACKET CONNECTION WITH ADAPTER PLATE**

To be used with
thinwall Steel posts.
Not to be used with
RR posts.



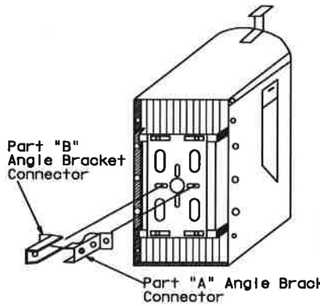




Bracket to mailbox attachment:
6 - 1/4" Dia. x 3/4" bolt w/ 2 flat washers and nut per each bolt.

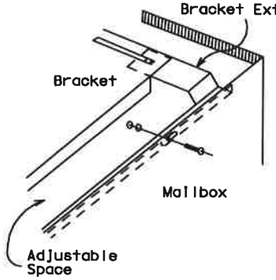
Angle to bracket attachment:
2 - 3/8" Dia. x 3/4" bolt with 2 flat washers, lock washer and nut per each bolt.

Angle to
2 - 3/8" Dia. x 2 1/2" bolt with 2 flat washers, lock washer and nut per each bolt.

**SMALL MAILBOX**




Use both Parts "A" and "B" Angle Bracket Connectors for Winged Channel Posts




Bracket to mailbox attachment:
6 - 1/4" Dia. x 3/4" bolt w/2 flat washers and nut per each bolt.

Bracket to bracket extension attachment:
2 - 1/4" Dia. x 3/4" carriage bolt w/ flat washer, lock washer and nut per bolt (4 bolts required if 2 bracket extensions are used).

Angle to bracket attachment:
2 - 7/8" Dia. x 3/4" bolt w/2 flat washers, lock washer and nut per each bolt.

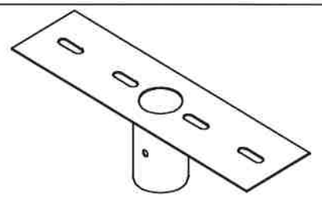
Angle to mailbox support attachment:
2 - 3/4" Dia. x 2 1/2" bolt w/2 flat washers, lock washer, and nut per each bolt.

Medium size mailboxes - one extension bracket
Large size mailboxes - two extension brackets

**MEDIUM AND LARGE MAILBOXES**

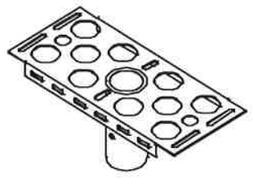
**GENERAL NOTES**

1. Connecting hardware detailed on this sheet is for the hardware that the Department stocks at the Regional Warehouses. This hardware is available to the contractor only when so stated elsewhere in the plans or specification.
2. Hardware for mounting mailboxes to the support/foundation furnished by Industry should be used when shown on the Maintenance Divisions "Approved Products List." Only mailbox hardware that have been crash tested in accordance with NCHRP Report 350, will be on the approved list.
3. Hardware furnished by Industry shall be erected in accordance with the manufacturer's recommendation.
4. Bracket and bracket extension shall be constructed of 14 gauge galvanized steel sheet metal.
5. The angles, brackets and adapter plates shall be constructed of 12 gauge galvanized steel sheet metal.
6. Items with evidence of damage to the galvanized coating or wet storage stains (white rust) will not be accepted.



**DHT 162323**

For use with galvanized thinwall steel posts DHT # 143426 or powder-coated thinwall steel post DHT # 162911.

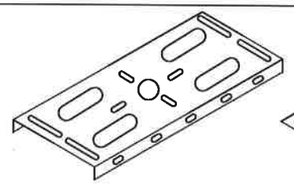


**DHT 161443**

For use with RCR post DHT # 161442 or galvanized thinwall steel post DHT # 143426 or powder-coated thinwall steel post. DHT # 162911.

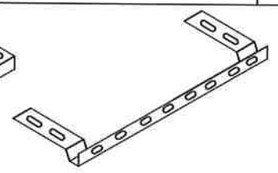
**DHT #3789**

Used for mounting two Mailboxes on the same post.



**DHT 148939**

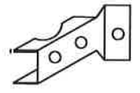
Mailbox Bracket



**DHT 148938**

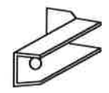
Used for extending 6" wide bracket to attach larger mailboxes.

Bracket Extension



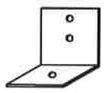
**DHT 159489**

Part "A"
Angle Bracket
Connector



**DHT 159490**

Part "B"
Angle Bracket
Connector

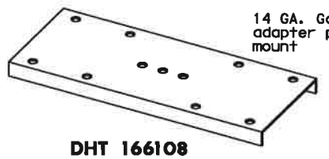


**DHT 2917**

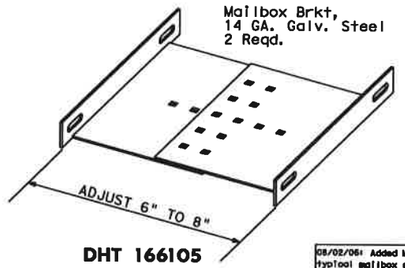
Angle Bracket
For Temporary
Mailbox

Note on DHT Number

See Table of Applicable DHT Numbers on sheet 4 of 4 for DHT description and unit of measure.




**DHT 166108**




**DHT 166105**

**HARDWARE AT TXDOT REGIONAL WAREHOUSES**

Brackets and adapter plate shown in this section should be available to the Contractor when stated elsewhere in plans or specifications.

08/02/06: Added Maximum weight for typical mailbox size.
10/08/2009 Added Accessibility stds note
10/9/2009 Added new mailboxpost

*Standard Plans*

*Texas Department of Transportation*
*Maintenance Division*

**MAILBOX BRACKET CONNECTING DETAILS**

**MB-11(1)**

Sheet 2 of 4

| FILE: MB10(1).DGN | DN: JEO | CK: LJB | DW: | CK: RDB | MEG: |
|---|---|---|---|---|---|
| ©TxDOT JANUARY 2011 | DIST | FED REG | FEDERAL AID PROJECT | | SHEET |
| REVISIONS | | 6 | | | |
| 02/02/05 | | | | | |
| 06/08/05: Added general note numbers 6 & 7. Sheet & title block renumbered. 11/14/05: Deleted sheet4. 10/28/2009 added sheet 4 | COUNTY | | CONTROL | SECT | JOB | HIGHWAY |
| | | | | | | |

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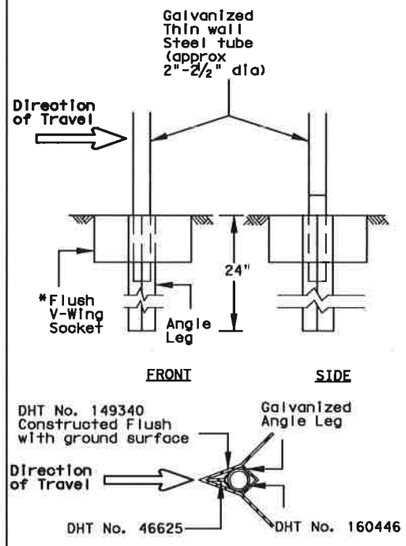
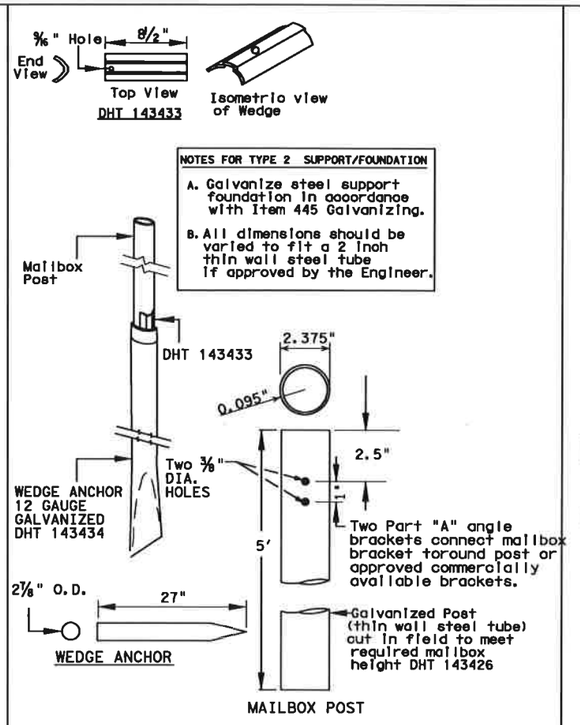


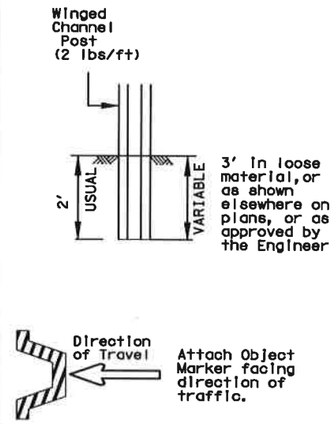

## TYPE 1 SUPPORT/FOUNDATION

THIN WALL STEEL TUBE w/ V-LOC ANCHORAGE



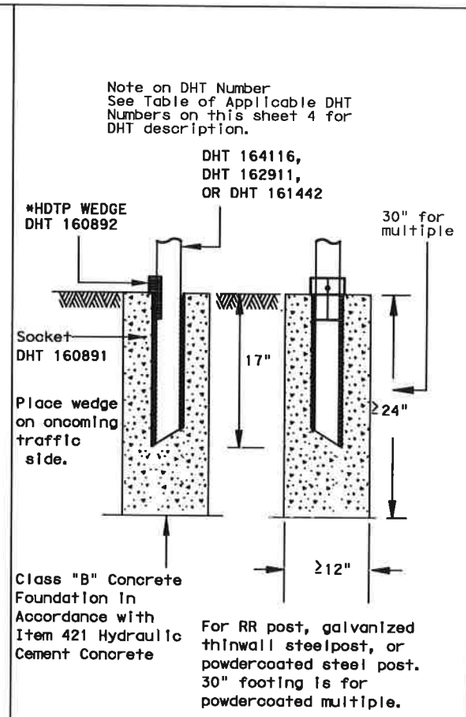

## TYPE 2 SUPPORT/FOUNDATION

THIN WALL STEEL TUBE w/ WEDGE ANCHOR SYSTEM



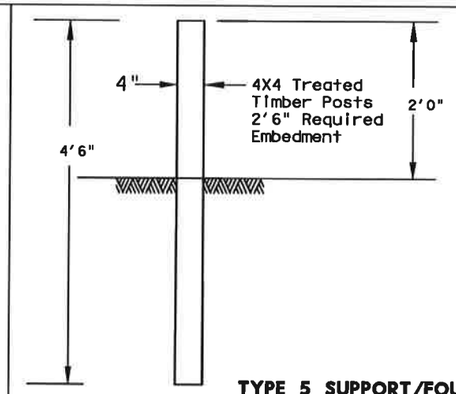

## TYPE 3 SUPPORT/FOUNDATION

WINGED CHANNEL POST




## TYPE 4 SUPPORT/FOUNDATION

FOR WHITECOATED STEEL POST, MULTIPLE POST, AND RECYCLED RUBBER.

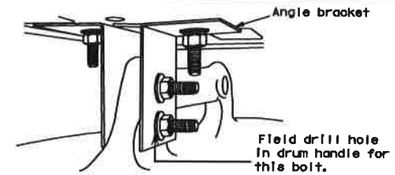



## TYPE 5 SUPPORT/FOUNDATION

FOR ONE PIECE MOLDED PLASTIC MAILBOX

## ONE PIECE MOLDED PLASTIC MAILBOXES

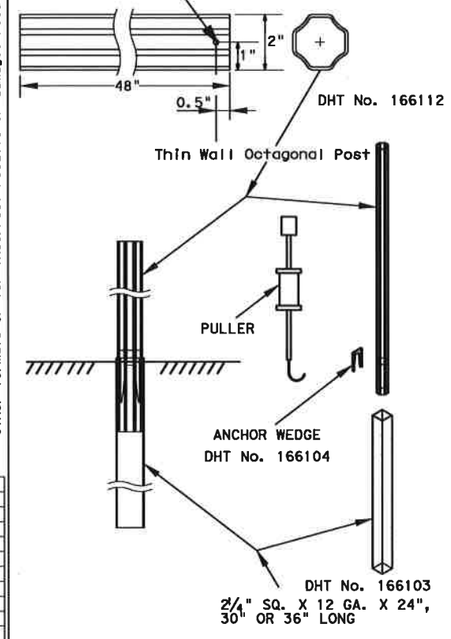
Molded Plastic Mailboxes shall be installed on 4"x4" treated timber posts only. The use of steel pipe or structural tubing in place of timber post is prohibited.




Placed on approved plastic drum as shown in the Compliant Work Zone Traffic Control Devices (CWZTCD). Existing attachment hardware shall be used unless damaged. Damaged hardware shall be replaced.

## TYPE 6 TEMPORARY MAILBOX SUPPORT

CONNECTION DETAIL




## TYPE 7 MAILBOX SUPPORT/FOUNDATION

CONNECTION DETAIL

MB-(X) ASSM TY (XXX) (X) (XX) (OPTIONAL)

Type of Mailbox
- S = Single
- D = Double
- M = Multiple
- SP = Single Plastic

Type of Post
- WC = Winged Channel Post
- RR = Recycled Rubber
- TWW = Thin Walled White Tubing
- TWG = Thin Walled Galvanized Tubing
- TIM = Timber

Type of Foundation
- Ty 1 = V-Loc
- Ty 2 = Wedge Anchor Steel System
- Ty 3 = Winged Channel post
- Ty 4 = Wedge Anchor Plastic System
- Ty 5 = 4 X 4 Post
- Ty 7 = Wedge Anchor

Type of Bracket
- AB = Angle Bracket.
- TB = 2.375" Tube Bracket

GENERAL NOTES
1. Erect post plumb or vertical.
2. When galvanized part is required galvanize in accordance with Item 445.
3. Type 1, 2, 3, 4 or 7 supports or foundation can be used for single or double mailbox installations. The RCR post should be used only for a single installation with a small mailbox. The Type 5 support/foundation is used for the single molded plastic mailbox. The Type 4 support/foundation is used for the 2.375" O.D. RR post, thin wall steel post, and white multiple mailbox post.
4. The Type 1 or type 7 support/foundation can be used for a multiple mailbox mount.
5. The Type 4 support should be used with thin wall steel pipe for the medium, large and double mailbox installations.
6. Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition.

DOUBLE AND LARGE MAILBOXES MUST BE ON STEEL POST.

*HDTP: High density thermoplastic polyesters

REVISIONS
08/08/05: Added general note numbers 6 & 7. Sheet & title block renumbered. 11/14/05: Deleted sheet4. 08/03/06: Added DHT table, Mailbox descriptive codes and bid items. 10/9/2009: Added new mailboxpost 10/28/2009: Moved DHT table to sheet 4 deleted general notes 7 & 8

Standard Plans

Texas Department of Transportation
Maintenance Division

# MAILBOX SUPPORT/ FOUNDATION

Sheet 3 of 4

# MB-11(1)

| FILE: MB10(1).DGN | DN: JEQ | CK: LJB | DW: JEQ | CK: RDB | MEG: |
|---|---|---|---|---|---|
| ©TxDOT JANUARY 2011 | DIST | FED REG | FEDERAL AID PROJECT | | SHEET |
| REVISIONS 01/07/2011: Added note 7 for mailboxes installed in areas with sidewalks. | | 6 | | | |
| | COUNTY | | CONTROL | SECT | JOB | HIGHWAY |
| | | | | | | |

LEVELS DISPLAYED
1 2

| TABLE OF APPLICABLE DHT NUMBERS | |
|---|---|
| DHT NUMBER | DESCRIPTION |
| FOUNDATIONS | |
| 46625 | WEDGE FOR V-WING SOCKET FOR TYPE 1 FOUNDATION |
| 149340 | V-WING SOCKET FOR TYPE 1 FOUNDATION |
| 143433 | WEDGE FOR TYPE 2 FOUNDATION |
| 143434 | ANCHOR FOR TYPE 2 FOUNDATION |
| 166103 | ANCHOR FOR TYPE 7 FOUNDATION |
| 160891 | SOCKET FOR TYPE 4 FOUNDATION |
| 160892 | WEDGE FOR TYPE 4 FOUNDATION |
| 166104 | WEDGE FOR TYPE 7 FOUNDATION |
| POSTS | |
| 4289 | WINGED CHANNEL MAILBOX POST |
| 149339 | MULTIPLE MAILBOX POST (GALVANIZED TUBING) |
| 164116 | MULTIPLE MAILBOX POST (WHITE COATED) |
| 166114 | MULTIPLE MAILBOX POST (WHITE COATED OCTAGONAL) |
| 166153 | MULTIPLE MAILBOX POST (GALVANIZED OCTAGONAL) |
| 161442 | RECYCLED RUBBER POST. FOR SMALL MAILBOX ONLY |
| 143426 | THIN-WALL GALVANIZED STEEL TUBE 2.375" OUTER DIAMETER |
| 162911 | THINWALL WHITE STEEL TUBE 2.375" OUTER DIAMETER |
| 166152 | SINGLE OR DOUBLE THIN-WALL MAILBOX POST GALVANIZED 2" OCTAGONAL |
| 166112 | SINGLE OR DOUBLE THIN-WALL MAILBOX POST WHITECOATED 2" OCTAGONAL |
| REFLECTIVE SHEETING | |
| 161812 | REFLECTIVE SHEETING FOR EMERGENCY LOCATION NUMBER PANEL |
| CONNECTING HARDWARE | |
| 2917 | ANGLE BRACKET USED FOR TEMPORARY MAILBOX SUPPORT |
| 166105 | BRACKET FOR SINGLE MOUNTING OF MAILBOXES (MOUNTING KIT) |
| 3789 | PLATE FOR DOUBLE MOUNTING OF MAILBOXES |
| 166108 | BRACKET FOR DOUBLE MOUNTING OF MAILBOXES (MOUNTING KIT) |
| 166111 | BRACKET FOR MULTIPLE MOUNTING OF MAILBOXES (MOUNTING KIT) |
| 148939 | BRACKET FOR ATTACHING SMALL OR MEDIUM SIZE MAIL BOX |
| 148938 | EXTENDER TO BRACKET FOR ATTACHING LARGE MAILBOX |
| 159489 | ANGLE BRACKET PART A |
| 159490 | ANGLE BRACKET PART B |
| 162323 | BRACKET FOR DOUBLE MOUNTING OF MAILBOXES ON THINWALL STEEL POST, GALVANIZED OR POWDERCOATED. |
| 161443 | BRACKET FOR ATTACHING MAILBOX TO RECYCLED RUBBER POST AND TO MULTIPLE WHITE MAILBOX POST |
| 158358 | CASTING (NEWSPAPER RECEPTACLE BRACKET) |
| 163731 | U-BOLT (NEWSPAPER RECEPTACLE BRACKET) |

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LEVELS DISPLAYED
1 2

Standard Plans
Texas Department of Transportation
Maintenance Division

**TABLE OF DHT NUMBERS**

Sheet 4 of 4 **MB-11(1)**

| FILE: MB10(1).DGN | DN: JEO | CK: LJB | DW: JEO | CK: BDB | MEG: |
|---|---|---|---|---|---|
| ©TxDOT JANUARY 2011 | DIST | FED REG | FEDERAL AID PROJECT | | SHEET |
| 10/28/09 REVISIONS | | 6 | | | |
| | COUNTY | | CONTROL | SECT | JOB | HIGHWAY |
| | | | | | | |

# FORMS OF SPECIFICATIONS, CONTRACT, BONDS AND BID PROPOSALS

## FOR

# HIDALGO COUNTY PRECINCT NO. 2

## GEARHART DRIVE
## PAVING & DRAINAGE IMPROVEMENTS

## PROJECT NO.: 2014-078-04-02-MSS

PURPOSE OF PRELIMINARY REVIEW AND COMMENTS UNDER THE AUTHORITY OF RAUL E. SESIN P.E. 86374 ON FEBRUARY 27, 2014. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, AND/OR PERMIT PURPOSES

## PREPARED BY:

**RAUL E. SESIN, P.E., PROJECT ENGINEER**
**HIDALGO COUNTY PLANNING DEPARTMENT**
**1304 S. 25th STREET**
**EDINBURG, TEXAS 78539**

**Hidalgo County Precinct No. 2**
**Gearhart Drive Paving & Drainage Improvements**
**Project No.: 2014-078-04-02-MSS**

# TABLE OF CONTENTS


1) Advertisement and Invitation for Bids
2) Hidalgo County Legal Notice
3) Bidder Acknowledgement
4) Statement of Credentials
5) Information for Bidders
6) Bid Form
7) Bid Bond
8) Contract
9) Non Collusion
10) Payment Bond
11) Performance Bond
12) **Exhibit C** -Insurance Requirements
13) General Conditions of the Agreement
14) Title 29 Labor
15) Standard General Condition of Construction Contract
16) Supplemental General Condition
    **Exhibit A** General Notes
    a. Technical Specifications

17) **Exhibit B**
    a. Debarment
    b. W-9
    c. Bidder/Vendor Application
    d. Conflict of Interest Memo
    e. Conflict of Interest Form
    f. Sales Tax and Local Sales Tax Certificate

18) **Exhibit D Border Wage Rates**
    a. Government code Ch 2258
    b. Prevailing Wage Rate
    c. Davis Bacon

19) **Exhibit E**
    a. Change Order
    b. Payment of Application
    c. Estimate Quantity Update
    d. Schedule of Values
    e. Contract Time Statement
    f. List of Suppliers
    g. Partial Release of Lien
    h. Contractor's Affidavit of Payment of Debts and Claims
    i. Prevailing Wage Rates Certificate Statement
    j. Certificate of Construction Completion
    k. Contractor's Affidavit of Release of Liens
    l. Quantity Work Sheet

20) Construction Identification Sign

# REQUEST FOR
# SEALED BIDS (RFB)

**TO SUPPLY HIDALGO COUNTY** with sealed bids for the following Construction Project:

| | | |
|---|---|---|
| Request for Sealed Bids (RFB) | 2014-078-04-02-MSS | -HIDALGO COUNTY PRECINCT NO. 2- "Gearhart Drive Paving & Drainage Improvements." |

**PROCUREMENT PACKETS.** Interested contractors may obtain bid packets at project engineer's office: **Hidalgo County Planning Department,** Raul Sesin, P.E., 1304 S. 25th St., Edinburg, TX 78539, Ph. (956) 318-2842.

**PRE-BID CONFERENCE** is scheduled for **Monday, March 24, 2014 at 4:00 P.M.** at HIDALGO COUNTY PURCHASING DEPARTMENT CONFERENCE ROOM-2802 S. Business Hwy 281, Edinburg, TX 78539

**A BIDDER'S BOND** from a reliable surety company licensed to operate in the State of Texas or certified Cashier's Check, payable without recourse to the County of Hidalgo, for the amount of not less than **5%** of the total bid shall accompany the bid as guaranty that, if awarded the contract, the bidder will enter into a contract with the County of Hidalgo. A Payment Bond is required in the amount of one hundred percent (100%) of the Contract Amount, if the contract exceeds $25,000. A Performance Bond is required in the amount of one hundred percent (100%) of the Contract Amount, if the contract exceeds $100,000.

**UPON SUBMITTING SEALED BID,** bidders are required to properly identify (handwritten, typed or printed) sealed envelope and/or packet with Bidders' name and address on the upper left hand corner of the sealed envelope and/or package and **Bid No. and project name** on the lower left hand corner of sealed envelope/and or packet. **OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE.**

The sealed bid must contain one (1) original and three (3) copies of bid and must be clearly identified and addressed for delivery to:

**Martha L. Salazar, CPPB, Hidalgo County Purchasing Agent**
**Hidalgo County Purchasing Department**

US Postal Mail/Courier Address: Hidalgo County New Administration Building, 2812 S. Business Hwy 281, Edinburg, TX 78539
Physical Location: Hidalgo County New Administration Building, 2802 S. Business Hwy. 281 (Southeast of Canton Rd & Business Hwy 281) Edinburg, TX

**BIDS ACCEPTANCE:** Sealed bids will be accepted until **3:00 p.m. on Wednesday, April 02, 2014** at which time they will be opened in the Hidalgo County Purchasing Department Conference Room at **Physical Location: 2802 S. Business Hwy 281, Hidalgo County New Administration Building, Edinburg, Texas 78539.** NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY BID RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED.

Attention is called to the fact that not less than, the most current federally determined prevailing **(Davis-Bacon and Related Acts)** wage rate, as issued and contained in the contract documents, must be paid on this project. In addition the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, age, disability or national origin.

**BIDS MAY BE HELD** by the County of Hidalgo for a period not to exceed ninety (90) days from the date of the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders, prior to awarding of the contract.

**Typed-written RFI's** shall be sent to Engineer. Please follow with a call to confirm receipt of RFI. RFI's will not be answered by phone. NO HAND WRITTEN RFI'S will be answered. All inquiries shall be forwarded by March 26, 2014. Inquiries beyond this date will not be responded. Contact project engineer for copies of Addenda.

**BY ORDER OF THE COMMISSIONERS COURT OF HIDALGO COUNTY, TEXAS** on this the 09th day of April, 2013.

**MARTHA L. SALAZAR, CPPB**
**HIDALGO COUNTY PURCHASING AGENT**

***REPORT ROAD HAZARDS@1-866-HCR-SAFE OR 1-866-427-7233***

# REQUEST FOR BIDS

**TO SUPPLY HIDALGO COUNTY PRECINCT NO. 2** with sealed bids for: "Gearhart Drive Paving & Drainage Improvements."

**A BIDDER'S BOND** from a reliable surety company licensed to operate in the State of Texas or certified Cashier's Check, payable without recourse to the County of Hidalgo, for the amount of not less than **5%** of the total bid shall accompany the bid as guaranty that, if awarded the contract, the bidder will enter into a contract with the County of Hidalgo. Payment and Performance Bonds shall be executed except in the event into a single payment contract with the County of Hidalgo in lieu of a Performance Bond. In the event the total amount bid is $25,000 or less, the successful contract has the option to enter into a single payment contract with the County of Hidalgo in lieu of a Payment and Performance Bond.

**Bid Packets** may be obtained from the office of Hidalgo County Planning Department, 1304 S. 25th St., Edinburg, TX 78539 Phone No. **(956) 318-2842.**

**PRE-BID CONFERENCE** is scheduled for **Monday, March 24, 2014 @ 4:00 P.M.**, at **HIDALGO COUNTY NEW ADMINISTRATION BUILDING - PURCHASING DEPARTMENT 2812 S Business Hwy 281, EDINBURG, TEXAS 78539**

**UPON SUBMITTING SEALED BID**, bidders are required to properly identify (handwritten, typed or printed) sealed envelope and/or packet as follows: Bidder's name and address on the upper left hand corner of the sealed envelope and/or package and **Bid No.: 2014-078-04-02-MSS – Hidalgo County Precinct No. 2 – "Gearhart Drive Paving & Drainage Improvements."** on the lower left hand corner of sealed envelope/and or packet. **OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE.**

The sealed bid must contain one (1) original and three (3) copies of bid and must be clearly identified and addressed for delivery to:

Martha L. Salazar, CPPB, Hidalgo County Purchasing Agent
Hidalgo County Purchasing Department

US Postal Mail/Courier Address
Hidalgo County New Administration Building
2812 S. Business Hwy 281
Edinburg, Texas 78539

Physical Location:
Hidalgo County New Administration Building
2802 S. Business Hwy. 281
(Southeast of Canton Rd & Business 281)
Edinburg, Texas 78539

**Sealed bids will be accepted until 3:00 PM on Wednesday, April 02, 2014** at which time they will be opened in the Hidalgo County Purchasing Department Conference Room at **Physical Location: 2802 S. Business Hwy 281, Hidalgo County New Administration Building, Edinburg, Texas 78539**. NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY BID RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED

Attention is called to the fact that not less than, the federally determined prevailing **(Davis-Bacon and Related Acts)** wage rate, as issued and contained in the contract documents, must be paid on this project. In addition, the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, age, disability or national origin.

**BIDS MAY BE HELD** by the County of Hidalgo for a period not to exceed ninety (90) days from the date of the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders, prior to awarding of the contract.

**THE COUNTY** reserves the right to refuse and reject any/all bids and to waive any/all formalities or technicalities, or to accept the bids considered the best and most advantageous to the County.

**BY ORDER OF THE COMMISSIONERS COURT OF HIDALGO COUNTY, TEXAS** on this the 6th day of March, 2014.

**MARTHA L. SALAZAR, CPPB**
**HIDALGO COUNTY PURCHASING AGENT**

***REPORT ROAD HAZARDS @ 1-866-HCR-SAFE OR 1-866-427-7233***

**REQUEST FOR BIDS (RFB)**

# HIDALGO COUNTY PRECINCT NO. 2

## "Gearhart Drive
## Paving & Drainage Improvements"

**RFB NO: 2014-078-04-02-MSS**

Acceptance Date: **April 02, 2014**

Martha L. Salazar, CPPB, Purchasing Agent
Hidalgo County Purchasing Department

Project Buyer Contact Information:

Moises Salazar, Buyer III
(956) 292-7000 Ext. 4863
moises.salazar@co.hidalgo.tx.us

Form HCPD-03

1. Sealed bids will be received for **"HIDALGO COUNTY PRECINCT NO. 2 – GEARHART DRIVE PAVING & DRAINAGE IMPROVEMENTS"** in accordance with the specifications attached as Exhibit "A" hereto. Bids should address all specifications set forth. Bidders may suggest substitutions of features which they feel would be in the best interest of Hidalgo County ("County"). Strong rationale must be presented for any deviation from the specifications. Hidalgo County reserves the right to reject the deviation and its effect on the overall bid.

2. One (1) original and three (3) copies of all bids are required with the bidders name and return address clearly typed/printed on upper left hand corner and the proper notation clearly typed/printed on the lower left hand corner of the envelope and/or package: **"BID- 2014-078-04-02-MSS - HIDALGO COUNTY PRECINCT NO. 2- GEARHART DRIVE PAVING & DRAINAGE IMPROVEMENTS."** and in County's Purchasing Department, physical address: 2802 S. Business Hwy 281, mailing address 2812 S. Business 281 New Administration Building,, Edinburg, Texas, **on or before 3:00 p.m., WEDNESDAY, APRIL 02, 2014.**

   **NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY RFB RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED. OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE WITH REFERENCE TO "REQUEST FOR BIDS – 2014-078-04-02-MSS - HIDALGO COUNTY PRECINCT NO. 2 – GEARHART DRIVE PAVING & DRAINAGE IMPROVEMENTS".**

   WRITTEN QUESTIONS WILL BE ACCEPTED. Written RFI's shall be sent to the office of project engineer: Raul Sesin, P.E., Hidalgo County Planning Department to the attention of, *Nora D Cavazos at nora.cavazos@hchd.org* . Please call 956-318-2842 to confirm receipt RFI. RFI's will not be answered by phone. NO HAND WRITTEN RFI'S will be answered. All inquiries shall be forwarded by March 26, 2014. Inquiries beyond this date will not be responded. Contact project engineer for copies of Addenda. All bidders who paid a deposit will be required to return Addenda as part of the Construction Documents in order to receive full deposit refund.

   Hidalgo County reserves the right to refuse and reject any/all RFB and to waive any/all formalities or technicalities, or to accept the RFB considered the best and most advantageous to Hidalgo County

3. Hidalgo County reserves the right to: A. separate and accept, or eliminate any item(s) listed under this bid that it deems necessary to accommodate budgetary and/or operational requirements; B. reject any or all bids submitted and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid for approval; and C. award the bid to one bidder or to multiple bidders if the County determines it is in its best interest to do so."

4. The Bidder shall not substitute items named in the bid without the express written consent of Hidalgo County. Failure of the delivered item(s) to perform as specified, or failure to meet the stated delivery schedule shall release Hidalgo County from all obligations to the contracting party with regard to the item(s) in question. In such event, County may elect to award the contract to the next-lowest responsible bidder, or to reject all bids and re-advertise.

5. For work to be performed at a County owned or operated location, each bidder shall, in its sole discretion, visit the job site before preparing the bid and thoroughly familiarize himself/herself with existing conditions. Bidder should take field dimensions and note all circumstances which affect the dollar amount of the bid.

6. Descriptive specifications are referenced in this document to indicate the general kind and quality of equipment desired by Hidalgo County. Due to various styles and models of equipment, bidders are required to include illustrations, specifications, explanation of warranties, and service data with their bid including catalogue numbers and any necessary references.

7. No bid may be withdrawn within thirty (30) days from the scheduled time to open bids.

8. Proposed prices are to remain firm for a minimum of ninety (90) days after bid opening.

9. Any interpretations, amendments, corrections or changes to this bid document must be in a written addendum and signed by the County Judge or his designee. Addenda will be mailed to all who are known to have received a copy of the Request for Bids. Bidders shall acknowledge receipt of all addenda as a part of their bid.

10. County reserves the right to accept or reject any or all bids.

11. Costs are to be net F.O.B., County Prepaid.

12. County is exempt from Federal Excise Tax, State Tax and Local Tax. Do Not include tax in cost figure. If it is determined that tax was included in the cost figures it will not be included in the tabulation of any awards. Tax exemption certificates will be furnished upon request.

13. Funds for this procurement have been provided through the County budget for this fiscal year only. County, on an annual basis, has the right to reconsider a contract during the budget process for ensuing years if financial resources of County are insufficient to meet the liabilities of said contract. The award of a bid or contract hereunder will not be construed to create a debt of the County which is payable out of funds beyond the current fiscal year.

14. Upon award and prior to execution of a contract, Sole Proprietorships are required to submit a copy of their social security cards to the Hidalgo County Auditor's Office in order to establish an account with the County. All awarded vendors must submit a completed W-9 and a copy o their Federal ID Number Certificate.

15. DELIVERY INSTRUCTIONS:

- No deliveries accepted after 3:00 P.M., Monday-Friday.
- At least seventy two (72) hours prior notice of delivery must be given to Martha L. Salazar, Purchasing Agent before delivery will be accepted.
- If you need additional information call the office listed below:

Hidalgo County Purchasing Department
Martha L. Salazar, Purchasing Agent
(956) 318-2626

16. BILLING AND PAYMENT INSTRUCTIONS:

- Invoices must include:
  a) Name and address of successful bidder
  b) Name and address of receiving department or official
  c) Purchase Order Number (if any)
  d) Notation - **BID- 2014-078-04-02-MSS - HIDALGO COUNTY PRECINCT NO. 2 -"GEARHART DRIVE PAVING & DRAINAGE IMPROVEMENTS"** Descriptive information as to the items or services delivered, including product code, item number, quantity, etc.
- Discount payments will be considered when offered.
- Contact person for Billing and Payment questions:

**Carlos Jasso, Accountant IV**
**Hidalgo County Precinct No. 2**
**300 W. Hall Acres Rd.**
**Pharr, Texas 78577**
**(956) 787-1891**

17. Schedule

| | | |
|---|---|---|
| **Pre-Bid Conference,** | **4:00 PM** | **March 24, 2014** |
| **Bid Opening,** | **3:00 PM** | **April 02, 2014** |
| Award of Contract | | **_____, 2014** |
| Commence Work or Deliver Products | | **_____, 2014** |

HIDALGO COUNTY APPROVED HOLIDAYS

| 2014 YEAR | |
|---|---|
| New Year's Day | 01/01/14 |
| Martin Luther King Day | 01/20/14 |
| President's Day | 02/17/14 |
| Good Friday | 04/18/14 |
| Easter | 04/21/14 |
| Memorial Day | 05/26/14 |
| Independence Day | 07/04/14 |
| Labor Day | 09/01/14 |
| Veteran's Day | 11/11/14 |
| Thanks Giving Day | 11/27/14 and 11/28/14 |
| Christmas Day | 12/25/14 and 12/26/14 |

18. Bid or Performance Bond and Debarment Certification; Payment Under Contract:

. If the contract proposed is for the construction of public works or is for a contract for goods & services exceeding $100,000, all bidders shall furnish a good and sufficient bid bond in the amount of five percent of the total contract price. A bid bond must be executed with a surety company authorized to do business in Texas. All bidders are also required to furnish a certification or acknowledgment stating that the contractor or vendor is free from suspension or debarment pursuant to federal regulation 45CFR Part 76.

. Together with the signing of a contract or issuance of a purchase order following the acceptance of a bid, and prior to commencement of the actual work, the bidder shall furnish a performance bond to the County for the full amount of the contract, if that contract exceeds $100,000.

. If the contract is for $50,000 or less, no money will be paid to the contractor until completion and acceptance of the work or the fulfillment of the purchase obligation to the County, and, if applicable, the receipt by County of satisfactory evidence that all subcontractors and material men have been paid.

. If a contract is for the construction, alteration or repair of public buildings or public works, the contractor *shall* provide a payment bond for a contract in excess of Twenty Five Thousand Dollars ($25,000.00), as required by Tex. Govt. Code Ch. 2253.

. For requirements contracts, bond requirements are determined by applying the proposed unit price to the estimated quantities included in the specifications.

19. Ethical Standards:

. It shall be a breach of ethics to offer, give or agree to give any elected official, department head or employee, or former elected official, department head

or employee, of the County, or for any elected official, department head or employee or former elected official, department head or employee of the County, to solicit, demand, accept or agree to accept from another person, entity or organization, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore pending before any department or agency of the County.

. It shall be a breach of ethics for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor for any contract for the County, or any person associated therewith, as an inducement for the award of a subcontract or order.

. No public official shall have an interest in a contract awarded hereunder except in accordance with Tex. Loc. Govt. Code Chapter 171.

- NOTICE:
ALL COMMUNICATIONS BY A VENDOR TO THE COUNTY, ITS OFFICIALS, AND DEPARTMENT HEADS REGARDING THIS PROCUREMENT SHALL BE DONE THROUGH THE HIDALGO COUNTY PURCHASING DEPARTMENT.

No vendor, its representative, agent, or employee shall engage in private communication with a member of the Hidalgo County Commissioners Court or county department heads regarding any procurement of goods or services by the County from the date that the Bid, RFP, or RFQ is released. No private communication regarding the purchase shall be permitted until the procurement process is complete and a purchase order is granted or a contract is entered into. Members of the commissioners court are required to make a reasonable effort to inform themselves regarding potential procurements and have a duty to inquire of vendors, their representatives or employees, the nature of any private communication being sought prior to engaging in any communication. "Private Communication" means communication with any vendor outside of a posted meeting of the governing body, a regular meeting of a standing or
appointed committee, or a negotiation with a vendor which has been specifically authorized by the governing body.

20. Disclosure of Conflict of Interest

. Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor, person, consultant or contractor considering doing business with Hidalgo County ("the County") to disclose in the Conflict of Interest Questionnaire (the "CIQ") attached as Exhibit D, the vendor, person,

consultant or contractor's affiliation or business relationship that might cause a conflict of interest with the County. By law, the CIQ must be filed with the Hidalgo County Clerk's Office no later than the seventh business day after the date the person becomes aware of facts that require that statement to be filed. The disclosure requirement applies to a person or business who contracts or seeks to contract with Hidalgo County for the sale or purchase of property, goods or service. Any purchase order or contract resulting from this process shall be considered null and void if the successful bidder fails to comply with Texas Local Government Code Chapter 176. Vendors, consultants, contractors and others who desire to conduct business with Hidalgo County are encouraged to refer to Texas Local Government Code Chapter 176 for the details of this law. An offense under Texas Local Government Code Chapter 176 is a Class C Misdemeanor.

Please Submit completed CIQ forms to the Hidalgo County Clerk's Office located at 100 N. Closner, Edinburg, Texas 78539-Hidalgo County Courthouse
**COMPLETION AND SUBMISSION OF FORM CIQ IS THE SOLE RESPONSIBILITY OF THE PROSPECTIVE BIDDER.**

21. If, during the life of any contract or bid awarded, the successful bidder's net prices generally available to other customers for items awarded herein are reduced below the contracted price, it is understood and agreed that the benefits of such reduction shall be extended to County.

22. Bids, and all goods and services provided thereunder, shall comply with all federal, state and local laws concerning this type(s) of goods and/or services

23. Minimum Standards For Responsible Prospective Bidders: A prospective bidder must affirmatively demonstrate bidder's responsibility. A prospective bidder, by submitting a bid, represents to County that it meets the following requirements:

- **Possess and submit a Certificate of Account Status indicating bidder is in "Good Standing" with the Texas Comptroller of Public Accounts if such bidder is incorporated in the State of Texas. If the bidder is not incorporated with the Texas, the bidder must submit the appropriate evidence of filing with the Texas Secretary of State stating that the business is authorized to transact business in Texas.**
- Possess or is able to obtain adequate financial resources as required to perform under the bid;
- Be able to comply with the required or proposed delivery schedule;
- Have a satisfactory record of performance;
- Have a satisfactory record of integrity and ethics;
- Be otherwise qualified and eligible to receive an award.

24. Successful bidder will pay or cause to be paid, without cost or expenses to County, all FICA, FUTA/SUTA and Federal Income Withholding Taxes of all employees, and all wages and benefits as required by Federal or State law. Successful bidder's officers, agents and/or employees will not be entitled to any benefits of an employee or elected

official of County, including, but not limited to, benefits associated with County's civil service system.

25. Any contract award to a successful bidder will be in effect until (a) the contract expires, (b) delivery and acceptance of products, and/or performance of services ordered, or (c) terminated by County with thirty day's written notice prior to cancellation.

26. County reserves the right to enforce performance of any contract awarded hereunder in any manner prescribed by law or deemed to be in the best interest of the County in the event of breach or default by successful bidder; County reserves the right to terminate any contract immediately in the event a successful bidder fails to:

    A. Meet schedules;
    B. Pay any required fees or taxes; or
    C. Otherwise perform in accordance with the specifications.

27. Successful bidder shall defend, indemnify and save harmless County and all its elected officials, officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful bidder, or of any agent, employee, subcontractor or supplier of successful bidder in the execution of, or performance under, any contract which may result from bid award or which arises from any event or casualty happening on or within County premises themselves or happening upon or in any halls, elevators, entrances, stairways or approaches of or to such County facilities. Successful bidder shall pay any judgment with costs which may be obtained against County growing out of such injury or damages, and shall, upon request, provide a defense to County by counsel reasonably acceptable to County. Successful bidder's indemnity hereunder shall include, but is not limited to, claims relating to patent, copyright or trademark infringement, and the like, arising out of the goods and services provided by successful bidder.

28. Successful bidder shall warrant that all items/services shall conform with the specifications and/or all warranties provided under the Uniform Commercial Code and be free from all defects in material, workmanship and the like. Items supplied under a contract pursuant to this Request for Bids shall be subject to County's approval. Items found to be defective or not meeting specifications shall be replaced by successful bidder within two business days at no expense to County. Items not picked up within one (1) week after notification shall be deemed a donation to County and may be used or disposed of at County's discretion and without waiver of any other rights of County as to the item's nonconformity.

29. ***Vendors hereby assigns to purchaser any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States, 15 USCA, Section 1 et. seq., and which arise under the antitrust laws of the State of Texas, Bus. & Com. Code, Section 15.01, et. seq.***

30. This document and any disputes arising hereunder shall be governed and construed according to the laws of the State of Texas, and will be performable exclusively in Hidalgo County, Texas.

31. The successful bidder shall not assign, sell, transfer or convey its rights under any awarded contract, in whole or in part, without the prior written consent of County.

**BIDDERS ACKNOWLEDGEMENT**
Bid
for
**HIDALGO COUNTY PRECINCT NO. 2**

**"GEARHART DRIVE**
**PAVING & DRAINAGE IMPROVEMENTS"**
**BID NO.: 2014-078-04-02-MSS**

To: Martha L. Salazar, CPPB, Purchasing Agent
Hidalgo County Purchasing Department
2802 S. Bus. Hwy. 281
Edinburg, Texas 78539

In accordance with the Specifications, and subject to all laws and regulations of the United States and state and local laws, the undersigned bidder proposes and commits to furnish all labor, equipment, material, software and services as set forth in the documents hereinbefore mentioned. The undersigned bidder further agrees, upon acceptance of its bid, to execute a contract and/or Purchase Order issued by Hidalgo County for performing and completing the work described in the Specifications within the time stated and for the prices proposed in the documents attached hereto and made a part hereof.

Bidder acknowledges receipt of all of the pages of the documents referenced in the Invitation to Bid Table of Contents presented in connection with this procurement. Bidder understands that Hidalgo County reserves the right to reject any or all bids and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing time for receiving bids, as contained in the Specifications.

Respectfully submitted,

Bidder: _____

Address: _____

By: _____

Printed Name: _____

Title: _____

***(THIS PAGE MUST BE SUBMITTED WITH BID PACKET)***

## STATEMENT OF CREDENTIALS

1. **GENERAL:** In order to assist the Owner in determining the ability of each Bidder to properly fulfill the requirements of this proposed contract, the Bidder will complete the following items. All questions must be answered and the data given must be clear and comprehensive. **This statement must be notarized.** If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he/she desires.

Name of Bidder: _____

Address: _____

_____

Date Organized: _____ Date Incorporated: _____

Office Number: _____ Fax Number: _____

Number of years in business under present name: _____

Type of work performed by your company: _____

_____

Have you ever failed to complete any work awarded to you? _____

Have you ever defaulted on a contract? _____

2. **EXPERIENCE:** The Bidder will give below a list of similar projects which he/she has completed within the last five (5) years.

1. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

2. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

3. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

4. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

5. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

3. **CONTRACTS ON HAND:** The Bidder shall provide below a list of any contracts/projects he/she currently has on hand:

_____

_____

_____

_____

_____

_____

_____

4. **SUBCONTRACTORS:** List any subcontractors you propose to use on the Hidalgo County's project that will comprise at least 20% of the total project cost. Use additional page if necessary. This information is considered preliminary and may be revised prior if bid is awarded and re-submitted during the pre-construction phase. However, it is expressly understood that the use of any subcontractor other than those listed with bid shall require written approval from Hidalgo County.

   Failure to submit the information as required may result in a disqualification of your bid.

_____

_____

_____

_____

_____

6. **PERFORMANCE OF WORK BY BIDDER:** Except as otherwise provided, the bidder shall perform no less than eighty percent (80%) of the work with his own organization, only twenty percent (20%) of the work may be subcontracted.

   The organization of the specifications into divisions, sections, articles, etc., and the arrangement and titles of project drawings shall not control the Bidder in dividing the work among subcontractors or in establishing the extent of work to be performed by any trade.

   Awarded bidder shall assign a project superintendent who is directly employed by the Bidder, that superintendent will be required to be on the job on a daily basis. No subcontractors will be allowed to act as project superintendents at any point during the construction of said project.

Bidder shall have a significant business presence with the Rio Grande Valley Area, the business must be headquartered in either Hidalgo, Cameron, or Starr County or a local office must be located in either of the three counties (Hidalgo, Cameron, Starr) with at least thirty percent (30%) of the total company workforce employed at the local office. County reserves the right to request payrolls and any necessary documentation to confirm that the local office meets these requirements.

Bidders shall carefully examine the plans, specifications and other documents, visit the site of the work, and fully inform themselves as to all conditions and matters which can affect the work or cost thereof. Should the bidder find discrepancies in, or omissions from the plans, specifications or other documents, or should he/she be in doubt as their meaning, he/she should at once notify the Engineer and obtain clarification by addendum prior to submitting any bid.

Bidder herby certifies that said company carried liability coverage and workers compensation insurance coverage that meets the requirements set forth in this Request for Bids/Proposals when performing work on this project for Hidalgo County.

Furthermore, bidder certifies that any subcontractor on the project shall provide the said company with a certificate relating that all employees of the subcontractor also are provided with workers' compensation insurance coverage. Bidder will provide copies of all of these certificates to Hidalgo County during the course of the project for all subcontractors working on the project.

All subcontractors must comply with federally determined prevailing Davis-Bacon and Related Acts wage rate.

Hidalgo County encourages the hiring of minority women subcontractors and/or suppliers whenever and wherever feasible.

The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the owner in verification of the recitals comprising this Statement of Credentials.

Executed this _____ day of _____, 20_____.

_____

By_____

Title_____

**Subscribed and sworn** to me this _____ day of _____, 20___.

By:_____

Notary Public in and for _____County, Texas

My commission expires _____

# INFORMATION FOR BIDDERS

## 1. Receipt and Opening of Bids

The Hidalgo County Pct # 2 (herein called the "Owner"), invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the Owner at the Hidalgo County Purchasing department until **Wednesday, APRIL 02, 2014 at 3:00 p.m.** and then at said office publicly open and read aloud. The envelopes containing the bids must be sealed, addressed to Martha L. Salazar, Hidalgo County Purchasing Agent at 2812 S Business 281, Edinburg, Texas 78539 and designated as Bid for Hidalgo County Pct # 2.

The owner may consider informal any bid not prepared and submitted in accordance with provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof.

## 2. Preparation of Bid

Each bid must be submitted on the prescribed forms and Certification by Bidder and/or contractor, concerning Labor Standards and Prevailing Wage Requirements. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures, and the foregoing Certificates must be fully completed and executed when submitted.

Each bid must be submitted in a sealed envelopes bearing on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another enveloped addressed as specified in the bid form.

## 3. Subcontracts

The bidder is specifically advised that any person, firm, or other party to whom is proposed to ward a subcontract under this contract –

**a** Must be acceptable to the Owner after verification of the current eligibility status, and,
**b** Approval of the proposed subcontract award cannot be given by the Owner unless and until the proposed subcontractor has submitted the Certification and/or other evidence showing that it has fully complied with any reporting requirements to which it is or was subject. Although the bidder is not required to attach such Certification by proposed subcontractors to his bid, the bidder is here advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

## 4. Telegraphic Modification

Any bidder may modify his bid by telegraphic communication at any time prior to the scheduled closing time for receipt of bids, provided such telegraphic communication is received by the Owner prior to the

closing time, and provided further, the Owner is satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the additional or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the telegraphic modification.

**5. Method of Bidding**

The Owner invites the following bid(s):
Project Name: **Hidalgo County Precinct No. 2 – Gearhart Drive Paving & Drainage Improvements.**
Project Number: **2014-078-04-02-MSS**

**Qualifications of Bidder**

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request, the Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract to complete the work contemplated therein. Conditional bids will not be accepted.

**6. Bid Security**

Each bid must be accompanied by certified check of the bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5% of the bid. Such checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or if no award has be made within 60 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

**7. Liquidated Damages for Failure to enter into Contract**

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

**8. Time of Completion and Liquidated Damages**

Bidder must agree to commence on or before a date to be specified in a Written "Notice to Proceed" of the Owner and to fully complete the project within **45** **consecutive calendar days** thereafter. Bidder must agree also to pay as liquidated damages, the sum of **$ 250.00** for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

**9. Condition of Work**

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with work of any other contractor.

**10. Addenda and Interpretations**

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.

Every request for such interpretation should be in writing via e-mail to moises.salazar@co.hidalgo.tx.us or via fax to (956) 292-7612 addressed to Martha L. Salazar, Purchasing Agent, 2802 S. Business Hwy. 281, Edinburg, TX 78539 attn: Moises Salazar, Buyer and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will mailed by certified mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes), not later than three days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

**11. Security for Faithful Performance**

Simultaneously with his delivery of the executed contract; the contractor shall furnish a surety bond or bonds as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner.

**12. Power of Attorney**

Attorney-in-fact who sign bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

**13. Notice of Special Conditions**

Attention is particularly called to those parts of the contract documents and specifications which deal with the following;

**a** Inspection and testing of materials
**b** Insurance requirements
**c** Wage rates
**d** States allowances

## 14. Laws and Regulations

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

## 15. Method of Award – Lowest Qualified Bidder

If at the time this contract is to be awarded, the lowest base bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the Owner as available to finance the contract the contract will be awarded on the base bid only. If such bid exceeds such amount, the Owner may reject all bids or may award the contract on the base bid combined with such deductible alternates applied in numerical order in which they are listed in the form of Bid, as produces a net amount which is within the available funds.

## 16. Obligation of Bidder

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his bid.

**Supplement to Form HUD-4238-B®**
**INFORMATION FOR BIDDERS**

## 17. SAFETY STANDARDS AND ACCIDENTS PREVENTION

With respect to all work performed under this contract, the contractor shall:

1 Comply with the safety standards provision of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the Associates General Contractors or America, the requirements of the Occupational Safety and Health Act of 1970 (Public Laws 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register", Volume 36, No 75, Saturday, April 17, 1971.

2 Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.

3 Maintain at his office or other well known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or a doctor's care of persons (including employee), whom may be injured on the job site. In no case shall employee be permitted to work at a job site before the employer has made a standing arrangement for removal of injured person to a hospital or a doctor's care.

## SPECIAL PROVISIONS

1. The County of Hidalgo reserves the right to partially award the contract in order to meet the budget.

2. It shall be the Contractor's responsibility to locate underground utilities, whether shown or not shown on the drawings, sufficiently in advance of operations to preclude damage to same.

3. Water, sewer, or other utility serves shall not be interrupted. Any damages to existing utilities will be Contractor's responsibility.

4. In the event of damage to underground facilities, whether shown or not shown in the drawings, the Contractor shall make the necessary repairs to place the facilities back in service at no increase in the Contractors price and all such repairs shall conform to the requirements of the company or agency servicing the facility

5. The Contractor shall exercise extra care to prevent damage to all other structures in the area including, fence, roads, pipelines, utilities, etc., whether publicly or privately owned.

6. Until acceptance by the Engineer of any part or all of the construction, as provided for in the plans and these specifications, it shall be under the charge and care of the contractor, and he shall take every necessary precaution against injury or damage to any part of the work. The Contractor shall rebuild, repair, restore and make good, at his own expense, all injuries or damage to any portion of the work before its completion and acceptance.

7. In case the Contractor deems extra compensation is due him for proposed work not covered in the contract, the Contractor shall notify the Engineer in writing of his claim for such extra compensation before he begins the work. Failure on the part of the Contractor to give such notification shall constitute a waiver of claim for such extra compensation. The Contractor shall not proceed until a written Change Order is approved by the Owner, Engineer, and Contractor.

8. Prospective bidders should make a careful examination of the projects sites.

9. Contractor shall review his overall method and schedule of construction with the County Prior to construction for proper coordination of inspection.

10. No open trenches or excavation shall be left open overnight.

**BID TAB**
**HIDALGO COUNTY PRECINCT No. 2**
**PROJECT No. 2014-078-04-02-MSS**
**GEARHART DRIVE PAVING AND DRAINAGE IMPROVEMENTS PROJECT**
**ESTIMATOR: RAUL E. SESIN PE., CFM DATE:2/27/2014**

***SAMPLE***

| Item No. | Estimated Quantity | Unit | Item Description | Unit Bid Price In Words | Unit Price In Figures | Total Extension In Figures |
|---|---|---|---|---|---|---|
| *1* | *34.33* | *STA* | *PREPARING ROW* | *THREE HUNDRED* Dollars<br>*FIFTY* Cents | *$300.50* | *$6,271.44* |

| **BASE BID** | | | | | | |
|---|---|---|---|---|---|---|
| **Item No.** | **Estimated Quantity** | **Unit** | **Item Description** | **Unit Bid Price In Words** | **Unit Price In Figures** | **Total Extension In Figures** |
| 1 | 4,141 | SY | PRIME COAT (MC-30) ENTIRE BASE AND LEAVE IT READY FOR HMAC INSTALLATION (ESTIMATED 830 GAL.) | Dollars<br>Cents | | |
| 2 | 4,822 | SY | 8" COMPACTED CALICHE (LABOR ONLY) | Dollars<br>Cents | | |
| 3 | 4,822 | SY | BIAXIAL GEOGRID | Dollars<br>Cents | | |
| 4 | 2,103 | SY | EXCAVATE STOCKPILE & TREAT CALICHE WITH 2% LIME AND REWORK EXISTING ROAD SECTION TO ACHIEVE PROP BASE | Dollars<br>Cents | | |
| 5 | 1 | LS | EROSION AND SEDIMENT CONTROL STRUCTURAL PRACTICES TO COMPY WITH COUNTY AND TCEQ REQUIREMENTS FOR STORM WATER POLLUTION PREVENTION | Dollars<br>Cents | | |
| | | | | | | |
| 6 | 2,442 | LF | 18" LAYDOWN CURB & GUTTER | Dollars<br>Cents | | |
| 7 | 8 | EA | CONCRETE APRON AROUND "C-C" INLET | Dollars<br>Cents | | |
| 8 | 210 | SY | ASPHALT DRIVEWAYS (3" CALICHE BASE & 1" ACP) | Dollars<br>Cents | | |
| 9 | 771 | SY | 4" CONCRETE DRIVEWAYS | Dollars<br>Cents | | |
| 10 | 200 | LF | GRADE ROADISE DITCH | Dollars<br>Cents | | |
| 11 | 1 | LS | TRAFFIC CONTROL | Dollars<br>Cents | | |
| 12 | 1 | EA | 24" THERMOPLASTIC STOP BAR | Dollars<br>Cents | | |
| 13 | 1 | EA | STOP SIGN | Dollars<br>Cents | | |
| | | | **BASE BID PRICE IN WORDS** | | **BID IN FIGURES** | |
| | | | | Dollars<br>Cents | $ | |

| ADD ALTERNATE #1 BID | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Estimated Quantity | Unit | Item Description | Unit Bid Price In Words | Unit Price In Figures | Total Extension In Figures |
| 1 | 4,141 | SY | 2" HMAC TYPE "D" (MATERIAL & LABOR) | *Dollars*<br>*Cents* | | |

| ADD ALTERNATE #1 BID PRICE IN WORDS | BID IN FIGURES |
|---|---|
| *Dollars* | $ |
| *Cents* | |

| ADD ALTERNATE #2 BID | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Estimated Quantity | Unit | Item Description | Unit Bid Price In Words | Unit Price In Figures | Total Extension In Figures |
| 1 | 4,822 | SY | 8" COMPACTED CALICHE (MATERIAL ONLY) | *Dollars*<br>*Cents* | | |

| ADD ALTERNATE #2 BID PRICE IN WORDS | BID IN FIGURES |
|---|---|
| *Dollars* | $ |
| *Cents* | |

| TOTAL BID PRICE IN WORDS (BASE BID) | BID IN FIGURES |
|---|---|
| *Dollars* | $ |
| *Cents* | |

| TOTAL BID PRICE IN WORDS (ALTERNATE #1 BID) | | BID IN FIGURES |
|---|---|---|
| | *Dollars* | $ |
| | *Cents* | |

| TOTAL BID PRICE IN WORDS (ALTERNATE #2 BID) | BID IN FIGURES |
|---|---|
| *Dollars* | $ |
| *Cents* | |

LF - LINEAR FEET

EA- EACH

SY- SQUARE YARD(S)

LS- LUMP SUM

PHONE NUNBER: _____

AUTHORIZED SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____

**CONTINUATION OF BID PAGE**

The undersigned **Bidder** agrees to commence work after written notice to commence work and to substantially complete the work on which he has bid **45** calendar days.

Enclosed with this Proposal is a Cashier's check or Certified Check for _____ _____ Dollars (_____) or a Bid Bond in the Sum of _____ _____ Dollars (_____), which is agreed shall be collected and retained by the **Owner** under the conditions hereof within ten (10) days after the date this proposals is accepted; then otherwise the said bond or check shall be returned to the undersigned upon demand.

Receipts of the following Addenda on these dates shown is acknowledged:

| | DATE | ACKNOWLEDGE | | DATE | ACKNOWLEDGE |
|---|---|---|---|---|---|
| #1 | _____ | _____ | #2 | _____ | _____ |
| #3 | _____ | _____ | #4 | _____ | _____ |

Respectfully submitted,

_____
Name of Firm

By: _____
Signature Date

_____
Title

**THIS PROPOSAL MUST BE SIGNED BY AN OFFICER OF REPRESENTATIVE DULY AUTHORIZED BY THE BIDDER.**

_____
Address

_____

_____
Telephone Number

(Seal, if Bid is by a Corporation)

Attest: _____

**HIDALGO COUNTY PRECINCT #2**
**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned _____

_____ as Principal, and _____

_____ as Surety, are hereby held and firmly bound

unto _____ as OWNER in the penal sum of _____

_____

for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20_____.

The condition of the above obligation is such that whereas the Principal has submitted to _____

_____ a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing for the

_____

_____

_____

_____

NOW, THEREFORE,

(a) If said Bid shall be rejected, or

(b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and Shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then, this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation is herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

_____
Surety

By:_____

IMPORTANT – Surety companies executing BONDS must appear on the Treasury Department's most current list (circular 570 as amended) and be authorized to transact business in the state where the project is located.

**THE STATE OF TEXAS** §
§
**COUNTY OF HIDALGO** §

**CONSTRUCTION CONTRACT**
**C-XX-XXX-XX-XX**

This Agreement, entered into this_____day of_____, **2014** by and between **Hidalgo County** (hereinafter called the "OWNER," and, _____ (a Texas corporation), of County of Hidalgo, and State of Texas, hereinafter called "CONTRACTOR".

**WITNESSETH**

That for and in consideration of the payments and agreement hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

**Hidalgo County Precinct No. 2 "Gearhart Drive Paving & Drainage Improvements"**

Hereinafter called the project, for the sum of _____ and all extra work in connection therewith, under the terms and stated in the General and Special Conditions of the Contract; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the Technical Specifications, the General Conditions and Special Conditions printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by County of Hidalgo, Raul E. Sesin, P.E., entitled the Architect/Engineer, and as enumerated in Paragraph 1.01.A.12 of the General Conditions, all of which are made a part hereof and collectively evidence and constitute the contract.

The CONTRACTOR hereby agrees to commence work under this contract on or after a date to be specified in written "Notice to Proceed" of the OWNER and to fully complete the project within **45 consecutive calendar days thereafter**. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of $**250.00** for each consecutive calendar day thereafter.

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions and deductions, as provided in the General Conditions of the contract, and to make payments on account thereof as provided in Paragraphs 14.02.C and 14.07.C of the General Conditions.

IN WITNESS WHREOF, the parties to these present have executed this contract in five (5) counterparts, each of which shall be deemed an original, in year and day first above mentioned.

APPROVED BY COMMISSIONERS COURT ON; _____, 2014.

CONTRACTOR:_____
Print Name & Title: _____
Name of Firm: _____
_____
Address: _____
_____
Fed I.D. #/SS #: _____

**STATE OF TEXAS**

**COUNTY OF HIDALGO**

This instrument was acknowledged before me on this the _____day of _____,

2014, by _____Of and on behalf of _____
(Title) (A corporation)

_____
Notary Public-Signature

APPROVED AS TO FORM:
Atlas & Hall, L.L.P.
800 Pecan
McAllen, Texas 78504

BY: _____

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

COUNTY OF HIDALGO:

_____
Ramon Garcia, County Judge

DRAFT

# NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

**State of .....)**

**County of.....)**

_____, being first duly sworn, deposes and says that:

(1) He is _____, of

_____, the Bidder that has submitted the attached Bid;

(2) He is fully informed respecting the preparation and contents of this attached bid and of all pertinent circumstances respecting such bid;

(3) Such bid is genuine and is not a collusive or sham Bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representative:, employees or parties in interest, including this affiant, has in any way colluded, conspired a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication of conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

_____
(Title)

Subscribed and sworn to before me on this _____

Day of _____

_____

_____

Title

# PAYMENT BOND

(To be used in Texas under V.A.T.S. 5160)

THE STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____,
a (2) _____, hereinafter called
Principal and (3)_____ of
_____, hereinafter called the
Surety, are held and firmly bound unto (4) _____ of
_____, hereinafter called Owner, and unto all persons, firms, and corporations who may furnish materials for, or perform labor upon the building or improvements hereinafter referred to the penal sum of _____ ($_____) Dollars in lawful money of the United States to be paid in (5) _____, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly be these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with (6)_____
_____, the Owner, dated the _____ day of _____, A.D. 20_____,
a copy of which is hereto attached and made a part hereof for the construction of:

**HIDALGO COUNTY PRECINCT 2**
**"GEARHART DRIVE PAVING & DRAINAGE IMPROVEMENTS"**

---

These footnotes refer to numbers in body of contract above:

Date of Bond must not be prior to date of contract

(1) Correct name of Contractor
(2) A Corporation, a Partnership or an Individual, as case may be
(3) Correct name of Surety
(4) Correct name of Owner
(5) County and State
(6) Owner

NOW, THEREFORE, the condition of this obligation is such that, if the –1- Principal shall promptly make payment to all claimants as defined in Article 5160 Revised Civil Statutes of Texas, 1925, as amended by House Bill 344, Act 56th Legislature, Regular Session, 1925 effective April 27, 1959, supplying labor and materials in the prosecution of the work provided for in said Contract, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

This bond is made and entered into solely for the prosecution of all claimants supplying labor and material in the prosecution of the work provided for in said Contract, and all such claimants shall have a direct right of action under the bond as provided in Article 5160, Revised Civil Statutes 1925, as amended by House Bill 344, Acts 56th Legislature, Regular Session, 1959

PROVIDED FURTHER, that if any legal action be filed upon this bond, venue shall lie in Hidalgo County, State of Texas, and that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specification accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in six counterparts, each one of which shall be deemed an original, this the _____ day of _____. A.D., 20____.

ATTEST:

_____
(Principal) Secretary

(Seal)

_____
Witness as to Principal

_____
(Address)

Principal_____
By_____

(Address)_____

Telephone Number:_____

_____
Surety

ATTEST:

_____
(Surety) Secretary

(Seal)

_____
Witness as to Surety

_____
(Address)

By_____

(Address)_____

_____
NOTE:If Contractor is partnership all Partners should execute bond

Telephone Number:_____

## PAYMENT BOND FORM

_____ _____
(Individual Principal)

_____ _____
(Address) (Business Address)
Telephone Number:_____ Telephone Number:_____

_____
(Corporate Principal)

_____
(Business Address) (Affix Corporate SEAL)
Telephone Number:_____
BY_____

_____ _____
ATTEST: _____

_____
(Business Address)(Affix Corporate SEAL)

BY_____
Telephone Number:_____

## CERTIFICATES AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____
Secretary of the corporation named as Principal in the within bond; that _____
_____,who signed the said bond on behalf of the Principal was then _____
of said corporation; and I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

_____
(TITLE)
DATE_____ _____
(AFFIX CORPORATE SEAL)

Telephone Number:_____

The rate of premium on this bond is _____ per thousand. Total amount of premium charge $ _____.
(The above must be filled in by corporate surety.) (Power-of-Attorney of person signing for surety company must be attached.)

# PERFORMANCE BOND
**(To be used in Texas under V.A.T.S. 5160)**

THE STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____, a (2) _____ _____ OF _____,____ hereinafter called Principal and (3)_____ of _____, State of _____, hereinafter called the Surety, are held and firmly bound unto (4) _____ of_____, hereinafter called Owner, in the penal sum of _____ ($_____) Dollars in lawful money of the United States to be paid in (5) _____, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly be these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with (6)_____, the Owner, dated the _____ day of _____, A.D. 200_____, a copy of which is hereto attached and made a part hereof for the construction of:

**HIDALGO COUNTY PRECINCT 2**
**"GEARHART DRIVE PAVING & DRAINAGE IMPROVEMENTS"**

hereinafter called the "Work").

---

These footnotes refer to the numbers in body of contract above:

Date of Bond must not be prior to date of contract

(1) Correct name of Contractor
(2) A Corporation, a Partnership or an Individual, as case may be
(3) Correct name of Surety
(4) Correct name of Owner
(5) County and State
(6) Owner

(Texas Performance Bond) – Page 2.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform the work in accordance with the plans, specifications, and contract documents during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that if any legal action be filed upon this bond, venue shall lie in Hidalgo County, State of Texas, and that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alternation or addition to the terms of the contract or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed in six counterparts, each one of which shall be deemed an original, this the _____ day of _____. A.D.

ATTEST:

_____
(Principal) Secretary

Principal_____
By_____

(Seal)

(Address)_____

_____
Witness as to Principal

Telephone Number:_____

_____
(Address)

ATTEST:

_____
(Surety) Secretary

By_____

(Seal)

(Address)_____

_____
Witness as to Surety

Telephone Number:_____

_____
(Address)

NOTE: If Contractor is a partnership, all partners should execute bond.

## PERFORMANCE-PAYMENT BOND FORM

_____ _____
(Individual Principal)

_____ _____
(Address) (Business Address)
Telephone Number:_____ Telephone Number:_____

_____
(Corporate Principal)

_____
(Business Address) (Affix Corporate SEAL)
Telephone Number:_____
BY_____

_____ _____
ATTEST: _____

_____
(Business Address)(Affix Corporate SEAL)

BY_____
Telephone Number:_____

## CERTIFICATES AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____
Secretary of the corporation named as Principal in the within bond; that _____
_____,who signed the said bond on behalf of the Principal was then _____
of said corporation; and I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

_____
(TITLE)
DATE_____ _____
(AFFIX CORPORATE SEAL)

Telephone Number:_____

The rate of premium on this bond is _____ per thousand. Total amount of premium charge $ _____.
(The above must be filled in by corporate surety.) (Power-of-Attorney of person signing for surety company must be attached.)

# EXHIBIT "C"
# Insurance Requirements

The Bidder awarded the contract shall furnish proof of insurance, which will also include any subcontractor that is subcontracted by the bidder in at least the following limits, to be in place prior to providing any services under this Contract and to continue at all times in force in effect during the term of this Contract:

1. A Five Hundred Thousand Dollar ($500,000.00) Comprehensive General Liability insurance policy providing additional coverage to all underlying liabilities of County.

2. Automobile liability insurance policy with limits of at least Three Hundred Thousand Dollars ($300,000.00) per person and Five Hundred Thousand Dollars ($500,000.00) per occurrence. Coverage should include injury to or death of persons and property damage claims with limits up to Five Hundred Thousand ($500,000.00) arising out of the services provided to County hereunder.

3. Uninsured/Underinsured motorist coverage in an amount equal to the bodily injury limits set forth immediately above;

4. Workers compensation insurance in amounts established by Texas law, unless the Bidder is specifically exempted from the Texas Workers Compensation Act, Texas Labor Code Chapter 401, et. seq.

Certificates of insurance naming County as an additional insured shall be submitted to County for approval prior to any services being performed by Contractor. Each policy of insurance required hereunder shall extend for a period equivalent to, or longer than the term of the Contract, and any insurer hereunder shall be required to give at least thirty (30) days written notice to the County prior to the cancellation of any such coverage on the termination date, or otherwise. This Contract shall be automatically suspended upon the cancellation, or other termination, of any required policy of insurance hereunder, and such suspension shall continue until evidence adequate replacement coverage is provided to County. If replacement coverage is not provided within thirty (30) days following suspension of the Contract, this Contract shall automatically terminate.

# Insurance Requirement Acknowledgment

I, _____, authorized representative for _____,
Company/Vendor

hereby acknowledge receipt of the County's required insurance limits. Said requirements:

☐ will be acquired within 10 working days after notification from Purchasing Department of bid awarded by the Hidalgo County Commissioners' Court;

☐ will acquire additional amounts required to meet the County's requirements within 10 working days after notification from Purchasing Department of bid award by the Hidalgo County Commissioners' Court; currently carry the following:

Automobile Liability: $_____ General Liability: $

☐ have already been met, see attached copy of insurance certificate.

_____ _____.
Authorized Representative Date

**Notice to Bidder:**
A certificate of insurance for the required insurance limits shall be provided to the Purchasing Department's Contract Managers in order to qualify for award of bid and to execute a contract between your Company and the County

Failure to provide Certificates of Insurance to the Purchasing Department's Contract Managers will cause the bid award to be rescinded and re-awarded to next lowest bidder. Certificates of Insurance will be monitored and verified on a **quarterly basis** to ensure coverage policy is in place. It is the Company=s obligation to maintain the appropriate insurance coverage throughout the term of the contract.

**THIS FORM MUST ACCOMPANY BID PACKET**

# PROJECT REQUIREMENTS ACKNOWLEDGMENT

This is to certify that I, _____, possess all of the APPLICABLE:

1. Licenses: _____.
2. Bonds: _____.
3. Certificates: _____.
4. Permits: _____.
5. Other: _____.

necessary to carry out the required project. Furthermore, I am providing copies of the required documentation so that, if my company is awarded this bid, I may be eligible to enter into a contract with Hidalgo County and proceed to complete the project in a timely manner.

* Any licenses, bonds, certificates, permits, etc. which are required must be presented as part of the bid packet in order to expedite the bid evaluation process. Failure to provide said documentation will result in the disqualification of your bid.

_____ _____.

Authorized Signature Date

_____.

Company

_____.

Address

_____.

City, State, Zip

# ACORD

## CERTIFICATE OF INSURANCE

DATE (MM/DD/YY)

| PRODUCER | THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. |
|---|---|
| | **INSURERS AFFORDING COVERAGE** |
| INSURED | INSURER A: |
| | INSURER B: |
| | INSURER C: |
| | INSURER D: |
| | INSURER E: |

### COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THER TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | POLICY NUMBER | POLICY EFFECTIVE DATE (MM/DD/YY) | POLICY EXPIRATION DATE (MM/DD/YY) | LIMITS | |
|---|---|---|---|---|---|---|
| A | **GENERAL LIABILITY**<br>COMMERCIAL GENERAL LIABILITY<br>☐ CLAIMS MADE ☐ OCCUR<br>☐ OWNER'S & CONT. PROT<br>☐ OWNER'S PROTECTIVE LIABILITY<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>☐ POLICY ☐ PROJECT ☐ LOC | | | | EACH OCCURRENCE | $ |
| | | | | | FIRE DAMAGE (Any one fire) | $ |
| | | | | | MED (Any one person) | $ |
| | | | | | PERS & ADV INJURY | $ |
| | | | | | AL AGGREGATE | $ |
| | | | | | DUCTS – COMP/OP GG | $ |
| B | **AUTOMOBILE LIABILITY**<br>☐ ANY AUTO<br>☐ ALL OWNED AUTOS<br>☐ SCHEDULED AUTOS<br>☐ HIRED AUTOS<br>☐ NON-OWNED AUTOS | | | | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | | | | | BODILY INJURY (Per person) | $ |
| | | | | | BODILY INJURY (Per accident) | $ |
| | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | **GARAGE LIABILITY**<br>☐ ANY AUTO | | | | AUTO ONLY-EA ACCIDENT | $ |
| | | | | | OTHER THAN AUTO ONLY EA ACC | $ |
| | | | | | AGG | $ |
| C | **EXCESS LIABILITY**<br>☐ OCCUR ☐ CL<br>☐ DEDUCTIBLE<br>☐ RETENTION $ | | | | EACH OCCURENCE | $ |
| | | | | | AGGREGATE | $ |
| | | | | | | $ |
| | | | | | | $ |
| | | | | | | $ |
| D | **WORKERS COMPENSATION AND EMPLOYER'S LIABILITY** | | | | ☐ WC STATU-TORY LIMITS ☐ OTHER | |
| | | | | | E.L. EACH ACCIDENT | $ |
| | | | | | E.L. DISEASE-EA EMPLOYEE | $ |
| | | | | | E.L. DISEASE-POLICY LIMIT | $ |
| | **OTHER** | | | | | |

**DESCRIPTION OF OPERATIONS / LOCATION / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS**

**County of Hidalgo shall be named as additional insured on all Commercial General Liability policies.**

| CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER: _____ CANCELLATION |
|---|---|
| **Hidalgo County**<br>**Attn: Purchasing Department**<br>**2812 S Highway Bus. 281**<br>**Edinburg, Texas 78539** | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BY CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL ***30*** DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.<br>AUTHORIZED REPRESENTATIVE |

SAMPLE

# GENERAL CONDITIONS OF THE AGREEMENT

## 1. GENERAL

It is the intent of these instructions, plans and specifications to provide guidance for the construction of this project.

## 2. REGULATIONS AND DISCREPANCIES

All applicable laws, ordinances, policy, rules, regulations and other directives of all authorities having jurisdiction over the projects shall apply to the contract throughout and will be deemed to be included in the contract the same as those written out in full. Discrepancies between regulations or conflicting parts of the Specifications shall be brought to the attention of an clarified by the Engineer before proceeding with any work. Proceeding with affected work without instructions from the Engineer can result in the Contractor being responsible for taking the necessary steps to insure the work conforms to the governing regulation.

## 3. ENGINEER

Whenever the work "ENGINEER" is used in this contract with reference to the preparation of plans, specifications, and contract documents, it shall be understood as referring to County of Hidalgo, Raul E. Sesin, P.E.

## 4. INTERPRETATION OF PHRASES

Whenever the words "Directed", "Required", "Permitted", "Designated", "Considered Necessary", "Prescribed", or words of like importance are used, it shall be understood that the direction, requirements, permission, order, designation or prescription, of the ENGINEER is intended and similarly, the words "Approval", "Acceptable", "Satisfactory", or words of like importance shall mean approved by or acceptable of satisfactory to the ENGINEER. The preceeding to the contrary notwithstanding, Engineer's approval or acceptance of the work shall by advisory to OWNER, and shall not bind the OWNER to accept or approve the same.

Whenever, in the specifications or drawings accompanying this agreement, the terms or description of various qualities relative to finish, workmanship, or other qualities of similar kind which cannot,, from their nature, be specifically and clearly described and specified, but are necessarily described in general terms, then, in all such cases, any question of the fulfillment of said specifications shall be decided by the ENGINEER, and said work shall be done in accordance with his interpretations of the meaning of the words, terms, or clauses defining the character of the work.

# Title 29 - LABOR

## Subtitle A - Office of the Secretary of Labor

### PART 3 - CONTRACTORS AND SUBCONTRACTORS ON PUBLIC BUILDING OR PUBLIC WORK FINANCED IN WHOLE OR IN PART BY LOANS OR GRANTS FROM THE UNITED STATES

Sec.


3.1 Purpose and scope
3.2 Definitions
3.3 Weekly statement with respect to payment of wages
3.4 Submission of weekly statements and the preservation and inspection of weekly payroll records.
3.5 Payroll deductions permissible without application to or approval of the Secretary of Labor.
3.6 Payroll deductions permissible with the approval of the Secretary of Labor.
3.7 Applications for the approval of the Secretary of Labor
3.8 Action by the Secretary of Labor upon applications.
3.9 Prohibited payroll deductions.
3.10 Methods of payment of wages.
3.11 Regulations part of contract.


AUTHORITY: The provisions of this Part 3 issued under R.S. 16 1, sec. 2, 48 Stat. §48; Reorg. Plan No. 14 of 1950, 64 Stat. 1267, 5 U.S.C. Appendix; 5 U.S.C. 301; 40 U.S.C. 276c.

SOURCE: The provisions of this Part 3 appear at 29 F.R. 97, Jan. 4, 1964, unless otherwise noted.

**Section 3.1 Purpose and Scope.**

This part prescribes "anti-kickback" regulations under section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c), popularly known as the Copeland Act. This part applies to any contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. The part is intended to aid in the enforcement of the minimum wage provisions of the Davis-Bacon Act and the various statutes dealing with Federally assisted construction that contain similar minimum wage provisions, including those provisions which are not subject to Reorganization Plan No. 14 (e.g., the College Housing Act of 1950, the Federal Water Pollution Control Act, and the Housing Act of 1959), and in the enforcement of the overtime provisions of the Contract Work Hours Standards Act whenever they are applicable to construction work. The part details the obligation of contractors and subcontractors relative to the weekly submission of statements regarding the wages paid on work covered thereby; sets forth the circumstances and procedures governing the making of payroll deductions from the wages of those employed on such work; and delineates the methods of payment permissible on such work.

**Section 3.2 Definitions.**

As used in the regulations in this part:

(a) The terms "building" or "work" generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include, without limitation, buildings, structures, and improvements of all @s, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, powerlines, pumping stations, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals; dredging, shoring, scaffolding, drilling, blasting, excavating, clearing, and landscaping. Unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, the manufacture or furnishing of materials, articles, supplies, or equipment (whether or not a Federal or State agency acquires title to such materials,



articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a "building" or "work" within the meaning of the regulations in this part.

(b) The terms construction," 4; prosecution," @'completion," or repair" mean all types of work done on a particular building or work at the site thereof, including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work, by persons employed at the site by the contractor or subcontractor.

(c) The terms "public building" or "public work" include building or work for whose construction, prosecution, completion, or repair, as defined above, a Federal agency is a contracting party, regardless of whether title thereof is in a Federal agency.

(d) The term "building or work financed in whole or in part by loans or grants from the Unites States" includes building or work for whose construction, prosecution, completion, or repair, as defined above, payment or part payment is made directive or indirectly from funds provided by loans or grants by a Federal agency. The term includes building or work for which the Federal assistance granted is in the form of loan guarantees or insurance.

(e) Every person paid by a contractor or subcontractor in any manner for his labor in the construction, prosecution, completion, or repair of a public building or public work or building or work financed in whole or in part by loans or grants from the United States is "employed" and receiving 44 wages," regardless of any contractual relationship alleged to exist between him and the real employer.

(f) The term "any affiliated person" includes a spouse, child, parent, or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation closely connected with the contractor or subcontractor as parent, subsidiary or otherwise, and an officer or agent of such corporation.

(g) The term "Federal agency" means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentality's of the United States and of the District of Columbia, including corporations. all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or any of the foregoing departments, establishments, agencies, and instrumentality's.

**(29 FR 97, Jan. 4, 1964, as amended at 33 FR 32575, Nov. 27, 1973)**

**Section 3.3 Weekly statement with respect to payment of wages.**

(a) As used in this section, the term "employee" shall not apply to persons in classifications higher than that of laborer or mechanic and those who are the immediate supervisors of such employees.

(b) Each contractor or subcontractor engaged in the construction, prosecution, completion, or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the United States, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by 29 CFR Parts 3 and 5 during the preceding weekly payroll period. This statement shall be executed by the contractor or subcontractor or by an authorized officer of employee of the contractor or subcontractor who supervises the payment of wages, and shall be on form @ 348, "Statement of Compliance," or on an identical form on the back of @ 347, "Payroll (For Contractors Optional Use)" or on any form with identical wording. Sample copies of @ 347 and @ 348 may be obtained from the Government contracting or sponsoring agency, and copies of these forms may be purchased at the Government Printing Office.

(c) The requirements of this section shall not apply to any contract of $2,000 or less.

(d) Upon a written finding by the head of a Federal agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances, and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

(29 F.R. 95, Jan. 4, 19(A, as ==tied at 33 F.R. 10186, July 17,1968)

*Copeland Act Regulations*

**Section 3.4 Submission of weekly statements and the preservation and inspection of weekly payroll records.**

(a) Each weekly statement required under §3.3 shall be delivered by the contractor or subcontractor, within seven days after the regular payment date of the payroll period, to a representative of a Federal or State agency in charge at the site of the building or work, or if there is no representative of a Federal or State agency at the site of the building or work, the statement shall be mailed by the contractor or

subcontractor, within such time, to a Federal or State agency contracting for or financing the building or work. After such examination and check as may be made, such statement, or a copy thereof, shall be kept available, or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the United States Department of Labor.

(b) Each contractor or subcontractor shall preserve his weekly payroll records for a period of three years from date of completion of the contract. The payroll records shall set out accurately and completely the name and address of each taborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Such payroll records shall be made available at all times for inspection by the contracting officer or his authorized representative, and by authorized representatives of the Department of Labor.

**Section 3.5 Payroll deductions permissible without application to or approval of the Secretary of Labor.**

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Secretary of Labor:

(a) Any deduction made in compliance with the requirements of Federal, State, or local law, such as Federal or State withholding income taxes and Federal social security taxes.

(b) Any deduction of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A "bona fide prepayment of wages" is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.

(c) Any deduction of amounts required by court process to be paid to another, unless, the deduction is in favor of the contractor, subcontractor or any affiliated person, or when collusion or collaboration exists.

(d) Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both, for the purpose of providing either from principal or income, or both, medical or hospital care, pensions, or annuities on retirement, death benefits, compensation for injuries, illness, accidents, sickness,

(k) Any deduction for the cost of safety equipment of nominal value purchased by the

or disability, or for insurance to provide any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents: Provided, however, That the following standards are met: (1) The deduction is not otherwise prohibited by law; (2) it is either: (i) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or (ii) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; (3) no profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise; and (4) the deductions shall serve the convenience and interest of the employee. (e) Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.

(f) Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.

(g) Any deduction voluntarily authorized by the employee for the making of contributions to



governmental or quasi-governmental agencies, such as the American Red Cross.

(h) Any deduction voluntarily authorized by the employee for the making of contributions to Community Chests, United Givers Funds, and similar charitable organizations.

(i) Any deductions to pay regular union initiation fees and membership dues, not including fines or special assessments: Provided, however, That a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provides for such deductions and the deductions are not otherwise prohibited by law.

0) Any deduction not more than for the "reasonable cost" of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as amended, and Part 531 of this title. When such a deduction is made the additional records required under §516.27(a) of this title shall be kept.

employee as his own prope@ for his personal protection in his work, such as safety shoes, safety

glasses, safety gloves, and hard hats, if such equipment is not required by law to be furnish by the employer, if such deduction is not violative of the Fair Labor Standards Act or prohibited by other law, if the cost on which the deduction is based does not exceed the actual cost to the employer where the equipment is purchased from him and does not include any direct or indirect monetary return to the employer where the equipment is purchased from a third person, and if the deduction is either (1) voluntarily consented to be the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance; or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees.
(36 F.R. 9770, May 28,1971.)

**Section 3.6 Payroll deductions permissible with the approval of the Secretary of Labor.**

Any contractor or subcontractor may apply to the Secretary of Labor for permission to make any

deduction not permitted under §3.5. The Secretary may grant permission whenever he finds that:

(a) The contractor, subcontractor, or any affiliated person does not make a profit or benefit

directly or indirectly from the deduction either in the form of a commission, dividend, or otherwise;

(b) The deduction is not otherwise prohibited by law;

(c) The deduction is either (1) voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance, or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; and

(d) The deduction serves the convenience and interest of the employee.

**Section 3.7 Applications for the approval of the Secretary of Labor.**

Any application for the making of payroll deductions under §3.6 shall comply with the requirements prescribed in the following paragraphs of this section:

(a) The application shall be in writing and shall be addressed to the Secretary of Labor.

(b) The application need not identify the contract or contracts under which the work in question is to be performed. Permission will be given for deductions on all current and future contracts of the applicant for a period of I year. A renewal of permission to make such payroll deduction will be granted upon the submission of an application which makes reference to the original application, recites the date of the Secretary of Labor's approval of such deductions, states affirmatively that there is continued compliance with the standards set forth in the provisions of §3.6, and specifies any conditions which have changed in regard to the payroll deductions.
(36 F.IL 9770, May 29, 1971.)

(c) The application shall state affirmatively that there is compliance with the standards set forth in the provisions of §3.6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.

(d) The application shall include a description of the proposed deduction, the purpose to be served there by, and the classes of laborers or mechanics from whose wages the proposed deduction would be made.

(e) The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant. -

**Section 3.8 Action by the Secretary of Labor upon applications.**

The Secretary of Labor shall decide whether or not the requested deduction is permissible under provisions of §3.6; and shall notify the applicant in writing of his decision.

**Section 3.9 Prohibited payroll deductions.**

Deductions not elsewhere provided for by this part and which are not found to be permissible under §3.6 are prohibited.

**Section 3.10 Methods of payment of wages.**

The payment of wages shall be by cash, negotiable instruments pkvable on demand, or the additional forms of compensation for which deductions are permissible under this part. No other methods of payment shall be recognized on work subject to the Copeland Act.

**Section 3.11 Regulations part of contact.**

All contracts made with respect to the construction, prosecution, completion, or repair of any public building or public work or building or work financed in whole or in part by loans or grants from the United States covered by the regulations in this part shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable. In this regard, see §5.5(a) of this subtitle.

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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# GENERAL CONDITIONS

## ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 *Terminology*

A. *Intent of Certain Terms or Adjectives*

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. *Day*

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds*

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02* *Copies of Documents*

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times com-

mence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

*See Supplementary Conditions

2.05* *Before Starting Construction*

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of
items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

* C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

*See Supplementary Conditions

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01* *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or

*See Supplementary Conditions

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02* *Subsurface and Physical Conditions*

A.* *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, includ-

ing, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

*See Supplementary Conditions

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, perfomance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be

made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price of Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05* *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

*See Supplementary Conditions

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or

Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

*See Supplementary Conditions

ARTICLE 5 - BONDS AND INSURANCE

5.01* *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B.* All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04* *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which nay arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to

perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

*See Supplementary Conditions

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A.* In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06* *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property

insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

*See Supplementary Conditions

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B.* OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C.* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D.* OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E.* If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 *Waiver of Rights*

A.* OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other

individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused.

None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

*See Supplementary Conditions

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08* *Receipt and Application of Insurance Proceeds*

A.* Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B.* OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09* *Acceptance of Bonds and Insurance; Option to Replace*

A.* If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the

certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with

*See Supplementary Conditions

the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences,
and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the

Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly

run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify

that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement

for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for

the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10* *Taxes*

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11* *Use of Site and Other Areas*

A.* *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations,

*See Supplementary Conditions

and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 *Safety and Protection*

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17* *Shop Drawings and Samples*

A.* CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified perfomance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B.* CONTRACTOR shall also submit six (6) Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified perfomance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or

*See Supplementary Conditions

Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals

will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;

2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

4. use or occupancy of the Work or any part thereof by OWNER;

5. any acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by OWNER.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 *Related Work at Site*

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of

such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

*See Supplementary Conditions

8.06* *Insurance*

A.* OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the perfomance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03* *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee,

*See Supplementary Conditions

the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Docu-

ments. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

*See Supplementary Conditions

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such

authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the perfomance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants. See Article 18.

## ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

## ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work

shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of

Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01* *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B.* The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03 ); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee:* The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

*See Supplementary Conditions

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility

owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

## ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02* *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03* *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B.* OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in

question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

*See Supplementary Conditions

13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A.* *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to pro-gress payments will be as stipulated in the Agreement.

*See Supplementary Conditions

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Comple tion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties

that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not

fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER May Suspend Work

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION*

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS*

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to

exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

# SUPPLEMENTAL GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions, which are not so amended or supplemental, remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

**SC-6.10** Delete paragraph 6.10 in its entirely and insert the following in its place:

*The owner qualifies for the state and local tax exemption in the purchase of certain materials and equipment the Contractor shall utilize the form provided herewith in exhibit "D".*

**SC-11.01** Delete paragraph 11.01 in its entirety.

**SC-11.02** Delete paragraph 11.02 in its entirety.

**SC-12.01B.25 & B.3.** Delete paragraph 12.01B.2 & B.3 in its entirety.

**SC-12.01.C.2** Delete paragraph 12.01.C.2 in its entirety.

**SC-14.02.C.1** Replace "ten days" with "thirty days" to read as follows:

*Thirty days after presentation of the application for payment to OWNER with ENGINEERS recommendation, the amount recommended will (subject to provisions of paragraph 14.02.D) become due, and when due will be paid by the OWNER to CONTRACTOR.*

**SC Article 16** Add the following language at the end of the paragraph of Article 16:

*There are no dispute resolution methods and procedures set forth in the Supplemental Conditions:*

## GENERAL PREVAILING WAGE LEGAL REQUIREMENTS

The Contractor's attention is called to Texas Government Code Chapter 2258, which must be complied with attached herewith as Exhibit "C"

# General Notes

**GENERAL NOTES:**

1. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE HIDALGO COUNTY PRECINCT No. 2.

2. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT RICHARD GARCIA WITH NORTH ALAMO WATER SUPPLY CORP. 48 HOURS PRIOR TO COMMENCEMENT OF WORK @ (956) 383-1618 TO COORDINATE AND MEET ANY ADDITIONAL REQUIREMENTS AND/OR SPECIFICATIONS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL DIG TESS 48 HOURS PRIOR TO COMMENCEMENT OF WORK FOR UTILITY SPOTTING @ (1-800-DIG-TESS).

4. THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES FOR VERIFICATION OF LOCATION OF EXISTING FACILITIES PRIOR TO BEGINNING ANY EXCAVATION.

5. LOCATIONS OF UNDERGROUND FACILITIES ARE FROM BEST INFORMATION AVAILABLE. NEITHER THE OWNER OR ENGINEER, WARRANT THE ACCURACY OF THE INFORMATION PROVIDED. ANY DEVIATIONS SHALL BE CALLED TO THE ENGINEER'S ATTENTION IMMEDIATELY.

6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE CORRESPONDING UTILITY CORPORATION IN REGARDS TO THE RELOCATION OF ANY CONFLICTING UTILITIES.

7. THE CONTRACTOR SHALL REMOVE ALL FENCES LOCATED WITHIN THE EASEMENTS, INTERFERING WITH CONSTRUCTION OPERATION AND PROVIDE TEMPORARY FENCING DURING CONSTRUCTION. REMOVED FENCES SHALL BE REPLACED WITH A NEW FENCE OR UNDAMAGED ORIGINAL FENCING. REMOVAL AND REPLACEMENT OF EXISTING AND TEMPORARY FENCES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

8. ANY DAMAGES TO FENCES, WALKS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

9. THE CONTRACTOR SHALL AT ALL TIME PROVIDE ACCESS TO EXISTING RESIDENCES.

10. THE CONTRACTOR IS TO MAINTAIN ALL EQUIPMENT AND TRANSPORTATION OF SAID EQUIPMENT WITHIN THE EXISTING RIGHT-OF-WAYS OF THE CITY, COUNTY OR STATE.

11. NO OPEN EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. ALL EXCAVATIONS WHICH CANNOT BE BACKFILLED OVERNIGHT SHALL BE COVERED, AS A MINIMUM, WITH STEEL PLATING WHEN IN PAVED AND UNPAVED

AREAS SUBJECT TO VEHICULAR LOADING; ¾ PLYWOOD, WOOD PLANKING WITH O.S.H.A. ORANGE PLASTIC EXPANDED MESH BARRIER AROUND PERIMETER IN UNPAVED AREAS NOT SUBJECT TO VEHICULAR LOADING, OR AS APPROVED BY THE ENGINEER.

12. THE PREPARATION OF THESE PLANS REFLECTS INFORMATION, PROVIDED BY OTHERS, ON THE APPROXIMATE LOCATION AND EXISTENCE OF EXISTING UTILITY AND ADJACENT PHYSICAL FEATURES. HOWEVER, THEY DO NOT IMPLY OR AFFIRM THAT ALL UTILITIES OR PHYSICAL FEATURES ARE SHOWN. GENERALLY, UTILITY SERVICE CONNECTIONS ARE NOT INDICATED ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS OF THE OWNER IMMEDIATELY UPON ENCOUNTERING UNFORESEEN CONFLICTS.

13. THE APPROXIMATE LOCATIONS OF KNOWN EXISTING UTILITIES ARE SHOWN, CONTRACTOR SHALL DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD PRIOR TO COMMENCING WORK. CONTRACTOR TO BE FULLY RESPONSIBLE FOR DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE EXISTING UTILITIES.

14. PUBLIC AND PRIVATE UTILITY LINES AND CUSTOMER SERVICE LINES MAY EXIST THAT ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, MAINTAIN AND PROTECT THE INTEGRITY OF THESE LINES. HAND EXCAVATION MAY BE REQUIRED. THE CONTRACTOR SHALL RESTORE RELOCATED OR DIVERTED UTILITY TO ITS ORIGINAL CONDITION AND LOCATION WHEN APPLICABLE UPON COMPLETION OF CONSTRUCTION. SAID RESTORATION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

15. WHERE NEW WATER LINES AND SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 317 (DESIGN OF SEWAGE SYSTEMS) OR 30 TAC 290 (WATER HYGIENE).

16. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS TO ALL HOMES AND BUSINESSES IN WORKING ORDER AT ALL TIMES, EXCEPT FOR BRIEF INTERRUPTIONS IN SERVICE FOR CONNECTIONS TO BE REINSTALLED. IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT. CONTRACTOR IS RESPONSIBLE FOR DAMAGES TO SAID SERVICES.

17. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY SURFACE IRREGULARITIES, AS DIRECTED BY THE ENGINEER, CAUSED BY THE CONTRACTOR'S WORKING OPERATIONS.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF PROPOSED FACILITIES AT ALL TIMES DURING CONSTRUCTION.

19. THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD AS OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF ALL ITEMS TO BE CONSTRUCTED.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AREA BETWEEN THE BACK OF CURB/EDGE OF PAVEMENT, ROAD SIDE DITCH AND RIGHT-OF-WAY TO HAVE POSITIVE FLOW TO THE PROPOSED DRAINAGE SYSTEM.

21. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES DURING THE INSTALLATION OF THE STRUCTURES, DRAINAGE, UTILITY, IRRIGATION AND ROAD IMPROVEMENTS. DEWATERING OF THE TRENCH MAY BE REQUIRED DURING THE INSTALLATION OF THE DRAINAGE, UTILITY AND IRRIGATION FACILITIES/STRUCTURES. SAID DEWATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

22. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION AND SUBMITTAL OF THE TRENCH EXCAVATION PROTECTION PLAN. CONTRACTOR SHALL SUBMIT CONSTRUCTION DETAILS AND DESIGN CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS BEFORE CONSTRUCTING THE SHORING AND/OR UTILIZING A TRENCH PROTECTION SYSTEM (BOX). THE ENGINEER RESERVES THE RIGHT TO REJECT DESIGNS NOT MEETING THE REQUIREMENTS OF SECTION ITEM 402 AND 403.

23. THE CONTRACTOR SHALL PROVIDE STORM WATER POLLUTION PREVENTION PLAN (SWP3) PRIOR TO COMMENCEMENT OF CONSTRUCTION AS REQUIRED BY HIDALGO COUNTY AND OR TCEQ.

24. ALL DEBRIS, VEGETATION AND SURPLUS MATERIAL, EXCEPT ROADWAY SECTION, RESULTING FROM DEMOLITION AND/OR CLEARING OF THE RIGHT-OF-WAY AND PROJECT LOCATION, IN PREPARATION OF PROPOSED IMPROVEMENTS, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO HIDALGO COUNTY PRECINCT No 2. THE CONTRACTOR SHALL PROVIDE A LETTER STATING SO. THIS SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM UNLESS STATED SO. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNER AND THE HIDALGO COUNTY PRECINCT No 2. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN THE AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND CONTRACTOR SHALL REMOVE THE MATERIAL AT OWN COST.

25. ALL ROAD SHALL BE REPLACED WITH 8" COMPACTED CALICHE AND 2" HMAC.

26. COUNTY WILL PROVIDE CALICHE MATERIAL AND CONTROL POINTS (BENCHMARK AND PROPERTY CORNERS) FOR THE WORK TO BE PERFORMED BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKING, INCLUDING BUT NOT LIMITED TO HORIZONTAL & VERTICAL GRADE CUTS FOR CURB & GUTTER AND ROADWAY. BASE AND SUB GRADE SHALL HAVE A MINIMUM CROSS SLOPE OF 3.0%.

27. EXISTING ROAD SECTION TO BE EXCAVATED AND STOCKPILED. THE PRODUCT OF THE CRUSHED ASPHALT PAVEMENT (MAX 2" PIECES IN SIZE) AND SALVAGE CALICHE SHALL BE TREATED WITH TWO (2) PERCENT LIME BY DRY WEIGHT OF SALVAGE MATERIAL. TREATED SALVAGE MATERIAL SHALL BE USED IN THE BOTTOM HALF OF THE PROPOSED ROAD. 8 IN. BASE SHALL HAVE A MINIMUM OF 4 IN. NEW CLAICHE AT THE TOP; THE REMAINING BOTTOM HALF SHALL BE ENTIRELY TREATED SALVAGE MATERIAL OR A COMBINATION OF TREATED SALVAGE MATERIAL AND NEW CALICHE. THE BASE SECTION SHALL BE COMPACTED TO 98% STANDARD PROCTOR DENSITY. IF APPLICABLE, THE EXCESS SALVAGE MATERIAL CAN BE TREATED AND USED AS SUB-GRADE TO ATTAIN THE PROPOSED CROSS SECTION OF THE ROAD. SUB-GRADE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THE LIME TREATMENT OF THE EXISTING ROAD SECTION AND ADDITIONAL SUB-GRADE FILL, THE ADDITIONAL SUB-GRADE FILL MATERIAL (TO ATTAIN PROPOSED SUB-GRADE WIDTH) AND THE GRADING OF THE CROSS-SLOPE OF THE ROAD SECTION STARTING WITH THE SUB-GRADE SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM AND SHALL BE REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

28. NEW CALICHE MATERIAL SHALL BE TREATED WITH 0.5% LIME BY DRY WEIGHT OF MATERIAL IF THE PLASTICITY INDEX OF SAID MATERIAL IS GREATER THAN 12. THE GRADATION SHALL BE ARGILLACEOUS LIMESTONE, CALCAREOUS OR CALCAREOUS CLAY PARTICLES, WITH OR WITHOUT STONE CONGLOMERATE GRAVEL, SAND OR GRANULAR MATERIAL:

TYPE D GRADE 6

| SIEVE No. | PERCENT RETAINED |
|---|---|
| 2 | 0 |
| ½ | 20-60 |
| 4 | 40-75 |
| 40 | 75-85 |

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT/RELOCATION OF ALL REGULATORY SIGNS REMOVED DUE TO

CONSTRUCTION OPERATIONS WITH THE SAME SIGN ON FIXED SUPPORT(S) IMMEDIATELY UPON ITS REMOVAL. APPROVAL BY THE ENGINEER IS NECESSARY BEFORE REMOVING ANY REGULATORY ROADWAY SIGN(S). FLAGGERS ARE REQUIRED TO BE AVAILABLE TO DIRECT TRAFFIC DURING SIGN INTERMEDIATE DOWN TIME. RELOCATION OF ANY DIRECTIONAL SIGN ASSEMBLIES REMOVED DURING CONSTRUCTION OPERATIONS, IMMEDIATELY UPON THEIR REMOVAL, IS REQUIRED. ALL SIGNING, BARRICADING AND TRAFFIC CONTROL SHALL CONFORM TO THE LATEST VERSION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". IN NO CASE WILL A SIGN BE REMOVED WITHOUT A REPLACEMENT SIGN AND SUPPORT(S) BEING READILY AVAILABLE AND A LOCATION ESTABLISHED. REMOVAL AND RELOCATION OF THESE SIGNS WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED ON THE PROPOSED.

30. AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE TXMUTCD LATEST EDITION, AND AS PROVIDED BY THE ENGINEER.

31. THE CONTRACTOR SHALL RELOCATE OR RECONSTRUCT ALL MAIL BOXES TO BE 1' BEHIND BACK OF CURB. MAIL BOXES SHALL BE REPLACED TO THE SAME EXISTING CONDITIONS OR BETTER. SAID RELOCATION OF MAIL BOXES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING WATER VALVES AND MANHOLES TO MATCH PROPOSED FINISH GRADE OF ROADWAY. CONCRETE COLLARS SHALL BE INSTALLED TO MATCH TOPS WITH PAVEMENT GRADE. THIS WORK SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM UNLESS STATED OTHERWISE.

33. DURING EXCAVATION OPERATIONS FOR DRAINAGE AND/OR UTILITIES, THE CONTRACTOR SHALL NOT PILE EXCAVATED MATERIAL OR EXCAVATE WITHIN THE DRIP LINE OF TREES THAT ARE TO BE PRESERVED.

34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPROVING ALL EXISTING DRIVEWAYS AS PER PROPOSED CONDITIONS STATED IN DRIVEWAY TABLE WORKSHEET.

35. IF ALTERNATE BID #2 IS AWARDED, HAULING AND LIME TREATMENT (IF NECESSARY) OF SAID MATERIAL SHALL BE CONSIDERED SUBSIDIARY TO THIS PAY ITEM.

# Technical Specifications

# TECHNICAL SPECIFICATIONS


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TEMPORARY EROSION, SEDIMENTATION AND ENVIRONMENTAL CONTROLS..... SECTION ITEM 506

**SECTION 00101**

**ABBREVIATIONS AND DEFINITIONS**

## PART 1 - ABBREVIATIONS

**1.01** Wherever the following abbreviations or symbols are used, they are to be construed the same as the respective expressions represented:

AASHTO American Association of State Highway and Transportation Officials

AB ..... Aggregate Base
AC ..... Asphalt Concrete
ACB ..... Asphalt Concrete Institute
ACI ..... American Concrete Institute
ACP ..... Asbestos Cement Pipe
ACPA ..... American Concrete Pipe Association
AD ..... Assessment District
AGC ..... Associated General Contractors of America, Inc.
AIEE ..... American Institute of Electrical Engineers
AISC ..... American Institute of Steel Construction
ANSI ..... American National Standards Institute
APWA ..... American Public Work Association
AREA ..... American Railway Engineers Association
ASMI ..... American Society of Mechanical Engineers
ASCE ..... American Society of Civil Engineers
Asph ..... Asphalt
ASTM ..... American Society for Testing and Materials
AWG ..... American Wire Gage (Nonferrous Wire)
AWPA ..... American Wood Preservers Association
AWPI ..... American Wood Preservers Institute
AWS ..... American Welding Society
AWWA ..... American Water Works Association
BC ..... Beginning of Curb or Back of Curb
BCR ..... Beginning of Curve Return or Back of Curb Radius
BM ..... Bench Mark
BWG ..... Birmingham Wire Gage (Iron and Steel Wire)
CB ..... Catch Basin
C.C. or C/C ..... Center to Center
Cem. ..... Cement
CF ..... Curb Face
CI ..... Cast Iron
CIP ..... Cast-Iron Pipe
CIPP ..... Cast-in- Place Pipe
C.L. or CL. ..... Center Line
CMP ..... Corrugated Metal Pipe
CMPA ..... Corrugated Metal Pipe Arch
CO ..... Clean Out
Col ..... Column

Conc ..... Concrete
Const. ..... Construct
DF ..... Douglas Fir
DG ..... Decomposed Granite
DMH ..... Drop Manhole
D/W ..... Driveway
EC ..... End of Curve
EL. or Elev. ..... Elevation
Ex. or Exist. ..... Existing
F & C ..... Frame and Cover
FH ..... Fire Hydrant
FL ..... Flow Line
Fl. El. ..... Floor Elevation
FS ..... Federal Specification of Finished Surface
FHWA ..... Federal Highway Administration, Department of Transportation
Galv. ..... Galvanized
GL ..... Ground Line
Gr. ..... Grade
H ..... Height or High
HC ..... House Connection Sewer
Hor ..... Horizontal
ID ..... Inside Diameter
Inv. ..... Invert
IP ..... Iron Pipe
ITE ..... Institute of Transportation Engineers
Lin. ..... Liner
LL ..... Liquid Limit
Long ..... Longitudinal
Max. ..... Maximum
MH ..... Manhole
M ..... Thousand
m ..... meter or middle
Min. ..... Minutes or Minimum
Mon. ..... Monolithic or Monument
MTD ..... Multiple Tile Duct
NEC ..... National Electrical Code
NEMA ..... National Electrical Manufacturers Association
NFPA ..... National Fire Protection Association
NGS ..... National Geodetic Survey
OC ..... On Center
OD ..... Outside Diameter
PC ..... Point of Curvature
PCC ..... Point of Compound Curve or Portland Cement Concrete
PI ..... Point of Intersection or Plasticity Index
PL ..... Property Line or Plastic Limit
PP ..... Power Pole
ppm ..... Parts per Million
PRC ..... Point of Reverse Curve
Prop ..... Proposed or Property
psf ..... Point of Tangency

psi ..... Pavement
PT ..... Polyvinylchloride Pipe
Q ..... Rate of Flow
R ..... Radius
RC ..... Reinforced Concrete
RCP ..... Reinforced Concrete Pipe
Rdwy ..... Roadway
Ret.Wall ..... Retaining Wall
RGRCP ..... Rubber Gasket-Reinforced Concrete Pipe
s ..... Slope
SAE ..... Society of Automotive Engineer
San. ..... Sanitary
SCCP ..... Steel Cylinder Concrete Pipe
SD ..... Storm Drain
Sdl ..... Saddle
Sect. ..... Section
Spec. ..... Specification
San. S ..... Sanitary Sewer
St. ..... Street
Sta. ..... Station
Std. ..... Standard
T ..... Tangent Distance
TH ..... Test Hole
THM ..... Trap Manhole
UL ..... Underwriters' Laboratories, Inc.
USA ..... United States of America Standards Institute, Inc.
V ..... Velocity
VC ..... Vertical Curve
VCP ..... Vitrified Clay Pipe
VCPI ..... Vertical Curve Point of Intersection
Vert. ..... Vertical
W.I. ..... Wrought Iron

**1.02** All abbreviations and symbols used on plans for structural steel construction shall conform to those given in the Steel Construction Manual of the American Institute of Steel Construction.

## PART 2 - DEFINITIONS

**2.01** Agreement-- The written agreement which constitutes a contract between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement.

**2.02** Application for Payment-- The form furnished by ENGINEER which is to be used by CONTRACTOR in requesting progress payments and which is to include the schedule of values required by paragraph 14.1 and an affidavit of CONTRACTOR that progress payments theretofore received on account of the Work have been applied by CONTRACTOR to discharge in full all of CONTRACTOR'S obligations reflected in prior Applications for Payment.

**2.03** Bid-- The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

**2.04** Bidder-- Any person, firm, or corporation submitting a Bid for the Work.

**2.05** Bonds-- bid, performance, and payment bonds and other instruments of security, furnished by CONTRACTOR and his surety in accordance with the Contract Documents.

**2.06** Change Order-- A written order to CONTRACTOR signed by COUNTY authorizing an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

**2.07** CITY -- A public body or authority or the contracting agency for whom the work is to be performed.

**2.08** Contract Documents-- The Agreement, Addenda (whether issued prior to the opening of Bids of the execution of the Agreement), Instructions to Bidders, CONTRACTOR's Bid, the Bonds, the Certificate of Insurance, the Notice of Award, Notice to Proceed, these COUNTY of McAllen Standard Specifications, Plans and Drawings, and all Modifications.

**2.09** Contract Price-- The total monies payable to CONTRACTOR under the Contract Documents.

**2.10** Contract Time-- The number of days stated in the Agreement for the completion of the Work, computed of the Work, computed as provided in paragraph 17.2.

**2.11** Contracting Agency-- (See COUNTY)

**2.12** CONTRACTOR-- The person, firm, or corporation with whom OWNER has executed the Agreement.

**2.13** Day-- A calendar day of twenty-four hours measured from midnight to the next midnight.

**2.14** Drawings or Plans-- The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

**2.15** ENGINEER-- The OWNER'S employee or agent responsible for the engineering design and construction inspection and supervision, acting directly or through duly authorized representatives.

**2.16** Field Order-- A written order issued by ENGINEER which clarifies or interprets the Contract Documents in accordance with paragraph 9.3 or order minor changes in the Work in accordance with paragraph 10.2.

**2.17** General Conditions -- Conditions which apply to all projects and which can be modified by Special conditions.

**2.18** General Provisions-- A term having the same meaning as the term General Conditions.

**2.19** Modification-- (a) A written amendment to the Contract Documents signed by both parties, (b) a Change Order, (c) a written clarification or interpretation issued by ENGINEER in accordance with paragraph 9.3, or (d) a written order for a minor change or alteration in the Work issued by ENGINEER pursuant to paragraph 10.2. A Modification may only be issued after execution of the Agreement.

**2.20** Notice of Award-- The written notice by OWNER to the apparent successful Bidder stating that, upon compliance with the conditions precedent to be fulfilled by him within the time specified, OWNER will execute and deliver the Agreement to him.

**2.21** Notice to Proceed-- A written notice given by COUNTY to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligations under the Contract Documents.

**2.22** Project-- The entire construction to be performed as provided in the Contract Documents.

**2.23** Reference Specifications, Test Methods, and Applicable Codes-- All standard specifications and test methods of any society, association, or organization herein referred to are hereby made a part of these Contract Documents the same as if written in full. (Any reference to a paragraph or subparagraph within a section shall include all general provisions of the section to which reference is made.) Reference to such standards refer to the latest publiqhed issues as of the date of publication issues as of the date of Invitation to Bid. Reference to local or state codes and laws shall mean the latest adopted and published codes as of the date of the Invitation to Bid.

**2.24** Resident Project Representative-- The authorized representative of ENGINEER who is assigned to the Project site or any part thereof.

**2.25** Service Connections-- Service Connections shall be construed to mean all or any portion of the pipe, conduit, cable, or duct which connects a utility main or distribution line to a building, home, residence, or property.

**2.26** Shop Drawings-- All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by CONTRACTOR, a Subcontractor, manufacturer, supplier, or distributor and which illustrate the equipment, material, or some portion of the Work.

**2.27** Special Conditions-- Conditions which are written for a specific project and which modify any section or paragraph of the General Conditions.

**2.28** Specifications, also Technical Specifications-- Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the Work. When Section Items 400, 402, 403, 420, 421, 440, 462, 464 make reference to the following Item numbers 132, 360, 404, 420, 424, 426, 427, 431, 437, 438, 441, 446, 448, 50, 522, 524, 526, 575, the CONTRACTOR shall use Texas Department of Transportation (TxDOT) Standard Specifications for Construction of Highways, Streets and Bridges Latest Edition for Specifications of the aforementioned Item Numbers.

**2.29** Subcontractor-- An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

**2.30** Substantial Completion-- The date as certified by ENGINEER when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it was intended; or if there be no such certification, the date when final payment is due in accordance with paragraph 14.13.

**2.31** Supplementary Specifications-- which are written to modify any section or paragraph of the Technical Specifications of this document.

**2.32** Utility--Overhead or underground wires, pipe lines, conduits, ducts, or structures, operated and maintained in or across a public right-of-way or easement or private easement.

A. Public Utility--Owned and operated by a municipality or another political subdivision of the State.

B. Private Utility--Owned and operated by a private company or corporation.

**2.33** Work-- Any and all obligations, duties, and responsibilities necessary to the successful completion of the Project assigned to or undertaken by CONTRACTOR under the Contract Documents, including all labor, materials, equipment, and other incidentals, and the furnishing thereof.

*** * * END OF SECTION * * ***

**SECTION 00102**

# PRELIMINARY MATTERS

## PART 1 - EXECUTION OF AGREEMENT:

**1.01** At least four (4) counterparts of the Agreement and such other Contract Documents as practicable will be executed and delivered by CONTRACTOR to COUNTY within fifteen days of the Notice of Award; and COUNTY will execute and deliver one counterpart to CONTRACTOR within ten days of receipt of the executed Agreement from CONTRACTOR. COUNTY will identify those portions of the Contract Documents not so signed and such identification will be bidding on all parties. COUNTY, CONTRACTOR, and Project ENGINEER shall receive and executed counterpart of the Contract Documents and additional conformed copies as required.

## PART 2 - DELIVERY OF BONDS

**2.01** When he delivers the executed Agreements to COUNTY, CONTRACTOR shall also deliver to OWNER such Bonds as he may be required to furnish in accordance with the contract documents.

## PART 3 - CONTRACT DOCUMENTS

**3.01** COUNTY shall furnish to CONTRACTOR up to three (3) copies, unless otherwise provided in the Special Conditions, of the Contract Documents as are reasonably necessary for the execution of the work. Additional copies will be furnished upon request at the cost of reproduction.

## PART 4 - CONTRACTOR'S ACKNOWLEDGMENT

**4.01** CONTRACTOR represents that he has familiarized himself with and assumes full responsibility for having familiarized himself with the nature and extent of the CONTRACT DOCUMENTS, Work, locality, and will all local conditions and federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect performance of the Work and represents that he has correlated his study and observations with the requirement of the Contract Documents.

**4.02** CONTRACTOR also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the Specifications and made such additional surveys and investigations as he deems necessary for the performance of the Work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

## PART 5 - COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED

**5.01** The Contract Time will commence to run on the thirteenth day after the day on which the executed Agreement is delivered by COUNTY to CONTRACTOR or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed; but in no event shall the Contract Time commence to run later that the nineteenth day after the day on which COUNTY delivers the executed Agreement to CONTRACTOR. A Notice to Proceed may be given at any time within thirty days after the day on which COUNTY delivers the executed Agreement to CONTRACTOR.

## PART 6 - PRE-COMMENCEMENT ACTIVITIES

**6.01** Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract documents and check and verify pertinent figures shows thereon and all applicable field measurements. He shall at once report in writing to ENGINEER any conflict, error or discrepancy which he may discover; however, he shall not be liable to ENGINEER for his failure to discover any conflict, error, or discrepancy in the Drawings of Specifications.

**6.02** Within ten days after delivery of the executed Agreement by COUNTY to CONTRACTOR, CONTRACTOR shall submit to ENGINEER for approval an estimated progress schedule indicating the starting and completion dates of the various stages of the Work and a preliminary schedule of Shop Drawing submissions.

**6.03** Before starting the work at the site, CONTRACTOR shall furnish ENGINEER certificates of insurance as required in the Contract Documents. Within twenty days after delivery of the executed Agreement by COUNTY to CONTRACTOR, but before starting the Work at the site, a conference will be held to review the above schedules, to establish procedures for handling Shop Drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the Project. Present at the conference will be ENGINEER, Project Engineer, Project Inspector, CONTRACTOR and his Superintendent.

## PART 7 - COMMENCEMENT

**7.01** CONTRACTOR shall tart to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No Work shall be done at the site prior to the date on which the Contract time commences to run.

*** * * END OF SECTION * * ***

**SECTION 00104**

# TESTING LABORATORY SERVICES

## PART 1 - GENERAL

**1.01** The Contractor shall be responsible for providing materials which meet the requirements indicated. For manufactured materials such as reinforcing steel, expansion joint materials, concrete pipe, cement, miscellaneous steel, cast iron materials, etc., the CONTRACTOR will be required to furnish a manufacturer's certificate that the material meets the requirements specified for this project.

**1.02** The COUNTY shall monitor all materials incorporated into the project and their placement by testing at the COUNTY's expense. The COUNTY does not guarantee the accuracy or validity of the data nor does the COUNTY assume any responsibility for the CONTRACTOR'S interpretation of the data. Materials or work which do not meet the specifications shall be removed or modified.

**1.03** All retesting for work rejected on the basis of the initial test results will be at the expense of the CONTRACTOR and the extent of the retesting shall be determined by the ENGINEER. The ENGINEER may require additional testing for failing tests and may require two passing retests acceptance will be made by the COUNTY.

**1.04** The testing laboratory will be designated by the ENGINEER and shall perform all work in a professional manner and conform to the requirement of ASTM E 329.

**1.05** Inspection, sampling and testing requirements, where applicable, are set forth in, but not necessarily limited to, the following Sections:

Section XXX Earthwork - Excavating, Backfilling and Compacting:

| | |
|---|---|
| | Compaction Control and Testing. |
| Section | Sub-grade and Base Construction. |
| Section | Street Surface Courses. |
| Section | Concrete and Structures. |
| Section | Underground Piped Utilities. |
| Section | Incidental Construction. |
| Section | Soil Treatment, Termite Control. |
| Section | Pile Driving, Load Tests. |
| Section | Metal Fastening: Welding and Bolting. |
| Section | Structural Metal Framing. |

## PART 2 - LABORATORY DUTIES AND LIMITS OF AUTHORITY

**2.01** Cooperate with ENGINEER and CONTRACTOR: provide qualified personnel as required promptly on notice.

**2.02** Acquaint ENGINEER'S personnel with testing procedures and with all special conditions encountered at the site.

**2.03** Perform specified inspections sampling and testing of materials and construction methods:

A. Comply with specified standards, ASTM and other recognized authorities.
B. Ascertain compliance with contract requirements.

**2.04** Promptly notify the ENGINEER of irregularities or deficiencies of work which are observed during performance of services.

**2.05** Promptly submit 3 copies of reports of observations and tests to the ENGINEER including but not limited to:

**2.06** Perform additional services ordered by the ENGINEER.

**2.07** Laboratory is not authorized to:
A. Release, revoke, alter or enlarge on contract requirements.
B. Approve or accept any portion of work.
C. Perform any duties of the CONTRACTOR.

## PART 3 - CONTRACTOR'S RESPONSIBILITIES

**3.01** Furnish product mix design together with the applicable design work sheets and data to meet or exceed contract requirements.

**3.02** Cooperate with COUNTY's laboratory personnel, provide access to the work or to the manufacturer's operations.

**3.03** Provide to laboratory preliminary representative samples of materials to be tested in specified quantities.

**3.04** Furnish copies of mill test reports.

**3.05** Furnish verification of compliance with contract requirements for materials and equipment.

**3.06** Furnish casual labor and facilities:
A. To provide access to work to be tested.
B. To obtain and handle samples at site.
C. To facilitate inspections and tests.
D. For laboratory's exclusive use for storage and curing of test samples.

**3.07** Notify ENGINEER 24 hours in advance of operations to allow for the assignment of personnel.

**3.08** Notify laboratory 24 hours in advance of operations to allow for the assignment of personnel.

**3.09** Correct work which is defective or which fails to conform to the Contract Documents. Corrective work shall not delay the project or the work of other CONTRACTORS.

**3.10** Pay all costs of retesting when test results indicate non-compliance with contract requirements.

**3.11** Patch all surfaces and areas disturbed by testing operation.

*** * * END OF SECTION * * ***

**SECTION 00105**

# AVAILABILITY OF LAND, PHYSICAL CONDITIONS AND REFERENCE POINTS

## PART 1 - AVAILABILITY OF LANDS

**1.01** COUNTY shall furnish, as indicated in the Contract Documents and not later than the date when needed by CONTRACTOR, the lands upon which the Work is done, rights-of-way for access thereto, and such other lands which are designated for the use of CONTRACTOR.

**1.02** Easement for permanent structures or permanent changes in existing facilities will be obtained and paid for by COUNTY, unless otherwise specified in the Contract Documents. If CONTRACTOR believes that any delay in COUNTY's furnishing these lands or easements entitles him to an extension of the Contract Time, he may make a claim therefore in the Contract Documents.

**1.03** CONTRACTOR shall provide for all additional lands and access thereto may be required for temporary construction facilities or storage of materials and equipment.

## PART 2 - PHYSICAL CONDITIONS; SURVEYS AND REPORTS

**2.01** The COUNTY will, upon request, furnish to the CONTRACTOR copies of all boundary surveys, subsurface tests, and other pertinent reports and material which are available in ENGINEER'S office.

**2.02** CONTRACTOR shall promptly notify ENGINEER in writing of any subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents.

**2.03** ENGINEER will promptly investigate those conditions and perform further surveys or subsurface tests deemed necessary. Promptly thereafter OWNER shall obtain the necessary additional surveys and tests and furnish copies to ENGINEER and CONTRACTOR.

**2.04** If ENGINEER finds that the results of such surveys or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents and which could not reasonably have been anticipated by CONTRACTOR, a Change Order shall be issued incorporating the necessary revisions.

## PART 3 - REFERENCE POINTS

**3.01** ENGINEER shall provide engineering surveys for construction to establish reference points which, in his judgment, are necessary to enable CONTRACTOR to proceed with the Work.

**3.02** CONTRACTOR shall be responsible for surveying and laying out the Work (unless otherwise provided in the Special Conditions) and shall protect and preserve the established reference point and shall make no changes or relocations without the prior written approval of ENGINEER. He shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.

**3.03** CONTRACTOR shall replace and accurately relocate all reference points so lost, destroyed or moved.

*** * * END OF SECTION * * ***

**SECTION 00106**

**SUSPENSION OF WORK AND TERMINATION**

## PART 1 - COUNTY SUSPENSION OF WORK

**1.01** ENGINEER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR which shall fix the date on which work shall be resumed.

**1.02** CONTRACTOR shall resume the work on the date so fixed.

**1.03** CONTRACTOR will be allowed an extension of the contract time directly attributable to any suspension if he makes a claim therefore as provided in Section 107 and the contract documents.

## PART 2 - COUNTY TERMINATION OF WORK

**2.01** If CONTRACTOR is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to Subcontractors or for labor, materials, or equipment, or if he disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction, or if he disregards the authority of ENGINEER, or if he otherwise violates any provision of the contract Documents, then ENGINEER may, without prejudice to any other right or remedy and after giving CONTRACTOR and his Surety seven day's written notice, terminate the services of CONTRACTOR and take possession of the project and of all materials, equipment, tools, construction equipment and machinery thereon owned by CONTRACTOR and finish the work by whatever method he may deem expedient.

**2.02** In such case CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional service, such excess shall be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to COUNTY.

**2.03** Such costs incurred by COUNTY shall be determined by ENGINEER and in corporate in a Change Order.

**2.04** Where CONTRACTOR's services have been so terminated by ENGINEER, said terminations shall not affect any rights of COUNTY against CONTRACTOR then existing or which may thereafter accrue.

**2.05** Any retention or payment of monies by COUNTY due CONTRACTOR will not release CONTRACTOR for liability.

**2.06** Upon seven days written notice to CONTRACTOR, COUNTY may, without cause and without prejudice to any other right or remedy, elect to abandon the project and terminate the agreement. In such case, CONTRACTOR shall be paid for all work executed and any expense sustained plus a reasonable profit.

## PART 3 - CONTRACTOR SUSPENSION OR TERMINATION OF WORK:

**3.01** If, through no act or fault of CONTRACTOR, the work is suspended for a period of more than ninety days by COUNTY or under an order of court or other public authority, or ENGINEER fails to act on any application for payment within thirty days after it is submitted, or COUNTY fails to pay CONTRACTOR any sum approved by ENGINEER or awarded by arbitrators within thirty days written notice to ENGINEER, terminate the agreement and recover from COUNTY payment for all work executed and any expense sustained plus a reasonable profit.

**3.02** In addition and in lieu of terminating the agreement, if ENGINEER has failed to act on an application for payment or COUNTY has failed to make any payment as a foresaid, CONTRACTOR may, upon seven days' notice to ENGINEER, stop the work until he has paid all amounts then due.

*** * * END OF SECTION * * ***

**SECTION 00107**

**WORK BY OTHERS**

## PART 1 - GENERAL

**1.01** COUNTY may perform additional work related to the Project by itself, or it may let other direct contracts therefore which shall contain General Conditions similar to these. CONTRACTOR shall afford the other contractors who are parties to such direct contracts (or COUNTY, if it is performing the additional work itself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work and shall properly connect and coordinate his work with theirs.

**1.02** If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor (or COUNTY,) CONTRACTOR shall inspect and promptly report to ENGINEER in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results. His failure so to report shall constitute an acceptance of the work as fit and proper for the relationship of his Work except as to defects and deficiencies which may appear in the other work after the execution of his Work.

**1.03** CONTRACTOR shall do all cutting, fitting, and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work with the written consent of ENGINEER and of the other contractors whose work will be affected.

**1.04** If the performance of additional work by other contractors of COUNTY is not noted in the Contract Documents prior to the execution of the contract, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work by COUNTY or others involves him an additional expense or entitles him to an extension of the Contract Time, he may make a claim therefore.

**1.05** Work by the CONTRACTOR and work by others should be coordinated and expedited by the COUNTY of his representative to prevent time delays and additional cost to the CONTRACTORS. Any extension of time and/or additional costs caused by other contractors or utility service companies may be claimed.

*** * * END OF SECTION * * ***

**SECTION 00108**

**CONTRACTOR'S RESPONSIBILITIES**

## PART 1 - SUPERVISION AND SUPERINTENDENCE

**1.01** CONTRACTOR shall supervise and direct the work efficiently and with is best skill and attention. He shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction; but he shall not be solely responsible for the negligence of others in the design or selection of a specific means, method,technique,sequence, or procedure of construction which is indicated in and required by the contract documents. CONTRACTOR shall be responsible to see that the finished work complies accurately with the contract documents.

**1.02** CONTRACTOR shall keep on the work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to the ENGINEER (Written Notice Only, Not Consent) except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

## PART 2 - LABOR, MATERIALS AND EQUIPMENT

**2.01** CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the contract documents. He shall at all times maintain good discipline and order at the site.

**2.02** CONTRACTOR shall furnish all material, equipment, labor, transportation,construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities, and all other facilities and incidentals necessary for the execution, testing, initial operation, and completion of the Work.

**2.03** All materials and equipment shall be new, except as otherwise provided in the contract documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**2.04** All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, or processors, except asotherwise provided in the contract documents.

## PART 3 - SUBCONTRACTORS

**3.01** If the specifications, laws, ordinances, or applicable rules or regulations permit CONTRACTOR to furnish or use a substitute that is equal to any material or equipment specified, and if CONTRACTOR wishes to furnish or use a proposed substitute, he shall make written application to ENGINEER for approval of such a substitute certifying in writing that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to the specified, and be suited to the same use and capable of performing the same function as that specified; stating whether or not its incorporation in or use in connection with the project is subject to the payment of any license fee or royalty; and

identifying all variations of the proposed substitute from that specified and indicating available maintenance service. No substitute shall be ordered or installed without the written approval of ENGINEER, who will be the judge of equality and may require CONTRACTOR to furnish such other data about the proposed substitute as he considers pertinent. No substitute shall be ordered or installed without such performance guarantee and bonds as ENGINEER may require which shall be furnished at CONTRACTOR's expense.

## PART 4 - SUBCONTRACTORS

**4.01** CONTRACTOR shall not employ and subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom COUNTY or ENGINEER may have reasonable objection. A subcontractor or other person or organization identified in writing to COUNTY and ENGINEER by CONTRACTOR prior to the notice of award and not objected to in writing by COUNTY or ENGINEER prior to the Notice of Award will be deemed acceptable to COUNTY and ENGINEER. Acceptance of any subcontractor, other person, or organization by COUNTY or ENGINEER shall not constitute a waiver of any right of COUNTY or ENGINEER to reject defective work or work not in conformance with the contract documents.

**4.02** If COUNTY or ENGINEER, after due investigation, have reasonable objection to any subcontractor,other person, or organization proposed by CONTRACTOR after the notice of award, CONTRACTOR shall submit an acceptable substitute and the contract price shall be increased or decreased by the difference in cost occasioned by such substitution and on appropriate change order shall be issued. CONTRACTOR shall not be required to employ any subcontractor, other person, or organization against whom he has reasonable objection. CONTRACTOR shall not, without the consent of COUNTY and ENGINEER, make any substitution for any subcontractor, other person, organization who has been accepted by COUNTY and ENGINEER unless ENGINEER determines that there is good cause for doing so.

**4.03** CONTRACTOR shall be fully responsible for all acts and omissions of his subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the contract documents shall create any contractual relationship between COUNTY or ENGINEER and any subcontractor or other person or organization having a direct contract with CONTRACTOR, nor shall it create any obligation on the part of COUNTY or ENGINEER to pay or to see to the payment of any monies due any subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific work done in accordance with the schedule of values.

**4.04** The sections of the specifications and the identifications of any drawings shall not control CONTRACTOR in dividing the work among subcontractors or delineating the work to be performed by any specific trade.

**4.05** CONTRACTOR agrees to bind specifically every subcontractor to the applicable terms and conditions of the contract documents for the benefit of COUNTY.

## PART 5 - PATENT FEES AND ROYALTIES

**5.01** CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the work of any invention, design, process, product, or device

which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the contract documents for use in the performance of two work and if, to the actual knowledge of COUNTY or ENGINEER, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by COUNTY in the contract documents.

**5.02** CONTRACTOR shall indemnify and hold harmless COUNTY and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses, including attorneys' fees, arising out of any infringement of patent rights or copyrights incident to the use in the performance of the work or resulting from the incorporation in the work of any invention, design, process, product, or device not specified in the contract documents and shall defend all such claims in connection with any alleged infringement of such rights.

## PART 6 - PERMITS

**6.01** CONTRACTOR shall obtain and pay for all construction permits and licenses and shall pay all governmental charges and inspection fees necessary for the prosecution of the work, which are applicable at the time of his bid. COUNTY shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACT, when necessary, in obtaining such permits and licenses. CONTRACTOR shall also pay all public utility charges.

## PART 7 - LAWS, REGULATIONS AND ORDINANCE

**7.01** Contractor shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the work. If CONTRACTOR observes that the specifications or drawings are at variance-therewith, he shall give ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate modification. If CONTRACTOR performs any work knowing it to be contrary to such law, ordinances, rules, and regulations and without such notice to ENGINEER, he shall bear all costs arising there from; however, it shall not be is primary responsibility to make certain that the specifications and drawings are in accordance with such laws, ordinances, rules and regulations.

## PART 8 - TAXES

**8.01** CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by him in accordance with the laws and ordinances.

## PART 9 - USE OF PREMISES

**9.01** CONTRACTOR shall confine his equipment, the storage of materials and equipment, and the operations of his workmen to areas permitted by law, ordinances, permits, or the requirements of the contract documents and shall not unreasonably encumber the premises with materials or equipment.

**9.02** CONTRACTOR shall not load nor permit any part of any structure to be loaded with weights that will endanger the structure, nor shall he subject any part of the work to stresses or pressures that will endanger it.

## PART 10 - RECORD DRAWINGS

**10.01** CONTRACTOR shall keep one record copy of all specifications, drawings, addenda, modifications, and shop drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to ENGINEER and shall be delivered to him for COUNTY upon completion of the project.

## PART 11 - SAFETY AND PROTECTION

**11.01** CONTRACTOR shall be responsible for initiating maintaining, and supervising all safety precautions and programs in connection with work. He shall take all necessary precautions for the safety of and provide the necessary protection to prevent damage, injury, or loss to:

A. All employees on the work and other persons who may be affected thereby:

B. All the work and materials or equipment to be incorporated there-in whether in storage on or off the site; and

C. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

**11.02** The CONTRACTOR shall conduct his operations in a manner which will minimize interference with the normal use of property adjacent to the construction work and shall give owners of such property at least 24 hours notice of the commencement of work in the area abutting their property. CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for its safety and protection. He shall notify owners of adjacent utilities at least 48 hours in advance when prospection of the work may effect them. All damage, injury, or loss to any property referred to above caused, directly or indirectly, in whole or in part, by CONTRACTOR, any subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR, except damage or loss attributable to the fault of drawings or specifications or to the acts or omissions of ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault of negligence of CONTRACTOR.

**11.03** CONTRACTOR's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed and ENGINEER has issued a notice to CONTRACTOR that work is acceptable.

**11.04** CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent, unless otherwise designated in writing by CONTRACTOR to OWNER.

## PART 12 - EMERGENCIES

**12.01** In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER,

is obligated to act, at his discretion, to prevent threatened damage, injury, or loss. He shall give ENGINEER prompt written notice of any significant changes in the work or deviations from the contract documents caused thereby; and a change order shall thereupon be issued covering the changes and deviations involved.

**12.02** If CONTRACTOR believes that additional work done by him in any emergency which arose from causes beyond his control entitles him to an increase in the contract price or an extension of the contract time, he may make a claim there for.

## PART 13 - SHOP DRAWINGS AND SAMPLES

**13.01** After checking and verifying all field measurements, CONTRACTOR shall submit to ENGINEER for approval, in accordance with the accepted schedule of shop drawing submissions, five copies (or, to ENGINEER's option, one reproducible copy) of all shop drawings which shall have been checked by and stamped with the approval of CONTRACTOR and identified as ENGINEER may require. The date shown on the shop drawing will be complete with respect to dimensions, design criteria, materials of construction, and the like to enable ENGINEER to review the information as required.

**13.02** CONTRACTOR shall also submit to ENGINEER for approval, with such promptness as to cause no delay in work, all samples required by the contract documents. All samples will have been checked by and stamped with the approval of CONTRACTOR, identified clearly as to material, manufacturer, and pertinent catalog numbers and the use for which intended.

**13.03** At the time of each submission, CONTRACTOR shall in writing call ENGINEER's attention to any deviations that the shop drawings or sample may have from the requirements of the contract documents.

**13.04** ENGINEER will review and approve with reasonable promptness shop drawings and samples, but his review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the contract documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make any corrections required by ENGINEER and shall return the required number of corrected copies of shop drawings and resubmit new samples until approved. CONTRACTOR shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections called by the ENGINEER on previous submissions. CONTRACTOR's stamp of approval on any shop drawing or sample shall constitute a representation to ENGINEER that CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or he assumes full responsibility for doing so and that he has reviewed or coordinated each shop drawing or sample with the requirements of the work and the contract documents.

**13.05** Where a shop drawing or sample submission is required by the specifications, no related work shall be commenced until the submission has been approved by ENGINEER. A copy of each approved shop drawing and each approved sample shall be kept in a good order by CONTRACTOR at the site and shall be available to ENGINEER.

**13.06** ENGINEER approval of shop drawings or samples shall not relieve CONTRACTOR from his responsibility for any deviations from the requirements of the contract documents unless

CONTRACTOR has in writing called ENGINEER's attention to such deviation at the time of submission and ENGINEER has given written approval to the specific deviation, nor shall any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the shop drawings.

## PART 14- CLEANING

**14.01** CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish, and debris from and about the premises, as well as all tools, construction equipment and machinery, and surplus materials and shall leave the site clean and ready for occupancy by COUNTY. CONTRACTOR shall restore to their original condition those portions of the site not designated for alterations by the contract documents, unless the completion of the work is directly affected by the item in dispute.

## PART 15 - INDEMNIFICATION

**15.01** CONTRACTOR shall indemnify and hold harmless COUNTY and ENGINEER and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the work by the CONTRACTOR, provided that any such claim, damage, loss, or expense (a) is attributable to bodily injury, sickness, disease, or death or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there-from and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

**15.02** In any and all claims against COUNTY or ENGINEER or any of their agents or employees by copy any employees of CONTRACTOR, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 15.01 shall not be limited in any way by any limitation on the amount of type of damages, compensation, or benefits payable by or for CONTRACTOR or any subcontractor under workmen's compensation acts, disability benefit acts, or other employee benefit acts.

**15.03** The obligations of CONTRACTOR under paragraph 15.01 shall not extend to the liability of ENGINEER, his agents, or employees arising out of (a) the preparation or approval of maps, drawings, opinions, reports, surveys change orders, designs, or specifications or (b) the giving of or giving or failure to give is the primary cause of injury or damage.

*** * * END OF SECTION * * ***

# SECTION 00113

## SOILS AND SUBSURFACE INVESTIGATION

### PART 1 - GENERAL

**1.01** Depending on the project requirements, the ENGINEER may have obtained geotechnical information, which may include subsurface date, logs of soil borings and recommendations from geotechnical consultants.

**1.02** Any information obtained is solely for use by the ENGINEER in the design of the project and are not part of the contract. If soil borings have been prepared they will be included in the section or on the plans.

**1.03** Any geotechnical information included is for information only. The COUNTY and the ENGINEER do not guarantee the accuracy or validity of the data, nor do they assume any responsibility for the CONTRACTOR'S interpretation or conclusions drawn from the data.

**1.04** The CONTRACTOR may, at his option, perform additional subsurface investigations at his own expense.

*****END OF SECTION*****

**SECTION 02101**

**PREPARATION OF RIGHT-OF-WAY**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. Removal and disposal of all obstructions from the right-of-way and from designated easements, as noted in the plans.

B. Obstructions shall include:

1. Remains of houses not completely removed by others.
2. Concrete, foundations, floorslabs curb and gutter, driveways, and sidewalk.
3. Building materials such as brick, lumber and plaster.
4. Water wells, septic tanks, manholes, inlets , utility pipes and conduits.
5. Underground service station tanks, equipment or other foundations.
6. Fencing and retaining walls.
7. Paved parking areas.
8. Abandoned railroad tracks, ties, and scrap iron.
9. Ancillary structures such as shacks and outhouses.
10. Trees, stumps, bushes, shrubs, roots, limbs and logs.
11. All rubbish and debris whether above or below ground.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. Provide materials required to perform work as specified.

## PART 3 - EXECUTION

### 3.01 GENERAL

A. Clear entire project right-of-way and such other areas, including public or corporate lands, specified in the plans of all structures and obstructions.

B. Trim carefully all trees and shrubs designated for preservation and protect from scarring or other injuries during construction operation.

C. Removal of all foundations and underground obstructions, unless otherwise specified, shall be removed to the following depths:

1. In embankment areas, two (2) feet below natural ground.
2. In excavation areas, two (2) feet below the lower elevation of excavation.
3. In all other areas, one (1) foot below natural grade.

D. Backfill all holes, as directed by the ENGINEER, resulting from all removals.

E. Complete the preparation of right-of-way such that prepared right-of-way is free of holes, ditches and other abrupt changes in elevations and irregularities to contours.

F. Plug the remaining ends of all abandoned storm sewers, culverts, sanitary sewers, conduits and utility pipes with concrete, as specified by the ENGINEER, to form a tight closure.

G. On existing concrete where only a portion is to be removed, care shall be exercised to avoid damage to remaining concrete. Where concrete reinforcement is encountered in removed portions, a minimum of one (1) foot of such reinforcement shall be cleaned of old concrete and left in place to tie into new construction. Concrete to be preserved, but subsequently destroyed by the CONTRACTOR'S operations, shall be replaced by the CONTRACTOR'S operations, shall be replaced by the CONTRACTOR at his expense in accordance with County Specifications, or as directed by the ENGINEER.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 PREPARATION OF RIGHT-OF-WAY

A. Preparation of right-of-way shall be measured on a lump-sum basis with measurement for payment made only on areas indicated and classified on the plans as preparation of right-of-way.

B. When not listed as a separate contract pay item, preparation of right-of-way shall be considered as incidental work, and the cost thereof shall be included in such contract pay item(s) as are provided in the proposal contract.

C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*****END OF SECTION*****

**SECTION 02102**

**CLEARING AND GRUBBING**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. Clearing and grubbing on project site of trees, stumps, brush, roots, vegetation, logs, rubbish and other objectionable matter within limits described in specifications or as shown on plans.

B. Clearing and grubbing shall be in advance of grading operation except that in cuts over 3 feet in depth, grubbing may be done simultaneously with excavation, provided objectionable matter is removed as specified.

C. Disposal of all debris resulting from clearing and grubbing work.

### 1.02 PROTECTION OF ADJACENT WORK:

A. Protect all areas outside indicated construction areas.

B. Protect existing improvements, adjacent property, utilities and other facilities, and trees and plants not to be removed from injury or damage.

## PART 2 - PRODUCTS

### 2.01 MATERIALS:

A. Provide materials required to perform work as specified.

## PART 3 - EXECUTION

### 3.01 CLEARING:

A. Clear all areas covered by dikes, roads, structures and embankments within project limits unless otherwise shown in plans.

B. Remove all saplings, brush, down-timber and debris unless shown or directed otherwise.

C. Use tree wound paint to treat scars, gashes or limb stubs on trees not removed.

## 3.02 GRUBBING:

A. Trees, stumps, root systems, rocks and other obstructions shall be removed to the depths shown when they fall within the construction templates for the following items:

| | | |
|---|---|---|
| 1. | Footings | 18" below bottom of footing |
| 2. | Sidewalks (or other types of walks) | 12" below bottom of walk |
| 3. | Roadways or Streets | 18" below bottom of sub-grade |
| 4. | Parking Areas | 18" below bottom of sub-grade |
| 5. | Grassed Areas | 18" below top soil |
| 6. | Fills | 24" below bottom of fill |

B. Blasting not permitted.

## 3.03 REMOVAL OF DEBRIS AND CLEANUP:

A. Burn as permitted by regulating agencies or the ENGINEER as work progresses.

B. Unguarded fires will not be permitted.

C. Permits will be obtained, where required, for necessary burning or disposal sites.

D. Dispose of all waste materials not burned by removal from site.

E. Materials cleared and grubbed shall be the property of the CONTRACTOR and shall be his responsibility for disposal.

# PART 4 - MEASUREMENT AND PAYMENT

## 4.01 CLEARING AND GRUBBING:

A. Clearing and Grubbing shall be measured for payment either in acres or by lump sum only for areas indicated on the plans, or as provided in the proposal and contract.

B. When not listed as a separate contract pay item, Clearing and Grubbing shall be considered as incidental work, and the cost thereof shall be included in such contract pay items as are provided in the proposal contract.

C. Compensation, whether by contract pay items or incidental work will be furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*** * *END OF SECTION * * ***

**SECTION 02210**

# SUBGRADE PREPARATION

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. This work shall consist of scarifying, blading and rolling the sub-grade to obtain a uniform texture and provide as nearly as practical a uniform density for the 6-inches of the sub-grade.

## PART 2 - PRODUCTS

## PART 3 - EXECUTION

### 3.01 CONSTRUCTION METHODS:

A. All preparing of the right-of-way and/or clearing and grubbing shall be complete before starting the sub-grade preparation.

B. The sub-grade shall be scarified and shaped in conformity with the typical sections and the lines and grades indicated or as established by the ENGINEER by the removal of existing material or addition of approved material.

C. All unsuitable material shall be removed and replaced with approved material.

D. All foundations, walls or other objectionable material shall be removed to a minimum depth of 18-inches under all structures and 12-inches under areas to be vegetated. All holes, ruts and depressions shall be filled with approved material.

E. The surface of the sub-grade shall be finished to the lines and grades as established and be in conformity with the typical sections indicated.

F. Any deviation in excess of 1/2 inch cross section and in a length of 10 feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and compacting by sprinkling and rolling.

G. Sufficient sub-grade shall be prepared in advance to insure satisfactory prosecution of the work.

H. The CONTRACTOR will be required to set blue tops for the sub-grade on centerline, at quarter points and curb lines or edge of pavement at intervals not exceeding 50 feet.

I. All suitable material removed may be utilized in the sub-grade with the approval of the ENGINEER. All other material required for completion of the sub-grade shall also be subject to approval by the ENGINEER.

J. Sub-grade materials on which structures shall be placed shall be compacted by approved mechanical tamping equipment to a dry density of the total material of not less than 95 percent nor more than 100 percent of the maximum dry density s determined in accordance with SDHPT test method tex-114-E.

K. Sub-grade materials on which planting or turf will be established shall be compacted to a minimum of 85 percent of the maximum dry density as determined in accordance with SDHPT test method tex-114-E.

L. Tests for density will be made as soon as possible after compacting operations are completed. If the material fails to meet the density specified, it shall be reworked as necessary to obtain the density required.

M. Just prior to placing any base materials, density and moisture content of the top 6-inches of compacted sub-grade shall be checked and if tests show the density to be more than 2 percent below the specified minimum or the moisture content to be more than 3 percent above or below the optimum, the sub-grade shall be reworked as necessary to obtain the specified compaction and moisture content.

N. When lime stabilization of the sub-grade is specified, the lime is to be added in accordance with Section 02240, Lime Stabilization.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT:

A. All acceptable sub-grade preparation will be measured by the square yard.

B. The measured area includes the entire width of the roadway for the entire length as indicated.

### 4.02 PAYMENT

A. The accepted quantities of sub-grade preparation will be paid for at contract unit bid price per square yard.

B. When not listed as a separate contract pay item, sub-grade preparation shall be considered as incidental work, and the cost thereof shall be included in such contract pay item (s) as are provided in the proposal contract.

C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*** * * END OF SECTION * * ***

**SECTION 02225**

**UNCLASSIFIED STREET EXCAVATION**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. Perform all required excavation within the limits of right-of-way and adjacent thereto (except excavations specifically described and provided for elsewhere in the specifications).

B. Remove, properly use, or dispose of all excavated materials.

C. Shape and finish all earthwork in conformance with lines and grades as shown on the plans or as specified by the ENGINEER.

D. Schedule work to avoid property owner inconvenience as practical during construction.

E. Exercise care in operating applicable equipment beneath or adjacent to trees, sidewalks, poles, and other existing features to prevent damage.

F. Restore obstructions removed to accommodate construction equipment or to facilitate excavation.

### 1.02 CLASSIFICATION:

A. All street excavation shall be unclassified, regardless of material encountered.

B. Any reference to rock or any other material on the plans, or in these specifications, is not to be constructed as classification of the excavation.

## PART 2 - PRODUCTS

### 2.01 SUBGRADE:

A. Use on-site material moved from cut areas to fill areas as approved by ENGINEER.

B. Use borrow materials from areas designated as needed.

### 2.02 DRAINAGE PROVISIONS:

A. Interruptions of natural surface drainage, or flow of artificial drains shall be mitigated by the CONTRACTOR by use of temporary drainage facilities, as approved by the ENGINEER, to prevent damage to public or private interest.

B. Restore original drainage as soon as the work shall permit.

C. The CONTRACTOR shall be held liable for all damages which may result from neglect to provide for either natural or artificial drainage which his work may have interrupted.

## PART 3 - EXECUTION

### 3.01 UNCLASSIFIED STREET EXCAVATION:

A. Perform all excavation, embankment and grading required for pavement and/or curb and/or gutter as shown on plans.

B. Move suitable excavated material to areas requiring fill and place in accordance with these specifications. Determination of suitable material will be made by ENGINEER. Haul unsuitable material to waste sites.

C. Slope cut or fill sections uniformly from curb line to sidewalk or other controlling feature, as designated by ENGINEER. Smooth bank to provide a neat finished appearance.

D. Remove and replace unstable soils encountered during grading operations with suitable material. Notify ENGINEER of suspected unsuitable material before commencing removal. Authorized replacement with select material will be paid for by change order.

E. Replace gravel or rock driveway surfaces disturbed by grading with like material at no additional cost to OWNER.

F. Strip, salvage and stockpile topsoil in sufficient quantity to allow a uniform 6-inch lift over all disturbed areas not otherwise surfaced. Topsoil is included in unclassified excavation.

G. Removed existing culvert pipe where shown as part of incidental to unclassified excavation.

### 3.02 UNSTABLE OR UNSUITABLE SUBGRADE:

A. Excavate unstable subgrade at least 2 feet below grade where directed by ENGINEER.

B. Replace with suitable stable material approved by ENGINEER.

C. Compact to uniform density in 6-inch lifts.

D. Density of compacted subgrade to be equal to or greater than adjacent undisturbed grade.

E. Payment will be as specified for unclassified excavation.

F. Conduct operations in such a manner such that measurements may be taken before any backfill, as required above, is placed.

### 3.03 EXCESS OR UNSUITABLE EXCAVATION:

A. Dispose of excavation in excess of that needed or unsuitable for construction. As directed by the ENGINEER, excess or unsuitable excavation may be used for widening of embankments, or flattening of slopes, or as otherwise specified.

B. Obtain approval of the ENGINEER as to disposition and method for disposal of excess or unsuitable excavation.

### 3.04 GENERAL:

A. Provide all labor, equipment and associated materials to excavate areas specified.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 UNCLASSIFIED STREET EXCAVATION:

A. Unclassified street excavation, as authorized, shall be measured in its original position and the volume determined by the average end area method. All work performed shall be paid for at the contract bid price per cubic yard for unclassified street excavation.

B. When not listed as a separate contract pay item, unclassified street excavation shall be considered as incidental work, and the cost thereof shall be included in such contract pay item s as are provided in the proposal contract.

C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required by the work, all in accordance with the plans and these specifications.

*** * * END OF SECTION * * ***

**SECTION 02230**

# EXCAVATION

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK

A. This work shall consist of excavating and properly utilizing or otherwise satisfactorily disposing of all excavated materials, of whatever character, within the limits of work.

B. Excavation shall also consist of constructing, compacting, shaping and finishing of all earthwork in designated areas on the plans, as specified herein, and in conformity with the required lines grades and typical cross sections or as directed by the ENGINEER.

C. When not otherwise included, this item shall include the work described in Section 02101 - Preparation of Right-of Way, Section 02102 - Clearing and Grubbing, Section 02236 - Embankment, Section 02238 - Removal of Concrete, and Section 02210 – Sub-grade Preparation.

Introduction

The Occupational Safety and Health Administration (OSHA) issued its first Excavation and Trenching Standard Standard in 1971 to protect workers from excavation hazards. Since then, OSHA has amended the standard several times to increase worker protection and to reduce the frequency and severity of excavation accidents and injuries. Despite these efforts, excavation-related accidents resulting in injuries and fatalities continue to occur.

To better assist excavation firms and contractors, OSHA has completed updated the existing standard to simplify many of the existing provisions, add and clarify definitions, eliminate duplicate provisions and ambiguous language, and give employers added flexibility in providing protection for employees. The standard is effective as of March 5, 1990.

In addition, the standard provides several new appendices. One appendix provides a consistent method of soil classification. Others provide sloping and benching requirements pictorial examples of shoring and shielding devises, timber tables, hydraulic shoring tables, and selection charts that provide a graphic summary of the requirements contained in the standard.

This booklet highlights the requirements in the updated standard excavation and trenching operations, provides methods for protecting employees against cave-ins, and described safe work practices for employees.

Scope and Application

OSHA's revised rule applies to all open excavations in the earth's surface, which includes

trenches.

According to the OSHA construction safety and health standards, a trench is referred to as a narrow excavation made below the surface of the ground in which the depth is greater than the width-the width not exceeding 15 feet. An excavation is any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. This can include excavations for anything from cellars to highways.

General Requirements

Planning for Safety

Many on-the-job accidents are a direct result of inadequate initial planning. Correcting mistakes in shoring and/or sloping after work has begun slows down the operation, adds to the cost, and increases the possibility of an excavation failure. The contractor should build safety into the pre-bid planning in the same way all other pre-bid factors are considered.

It is a good idea for contractors to develop safety checklists before preparing a bid, to make certain there is adequate information about the job site and all needed items are on hand.

These checklists should incorporate elements of the relevant OSHA standards as well as other information necessary for safe operations.

Before preparing a bid, these specific site conditions should be taken into account:
- Traffic,
- Nearness of structures and their conditions,
- Soil,
- Surface and ground water,
- The water table,
- Overhead and underground utilities and
- Weather.

These and other conditions can be determined by job site studies, observations, test borings for soil type or conditions, and consultations with local officials and utility companies.

Before any excavation actually begins, the standard requires the employer to determine the estimated location of utility installations-sewer, telephone, fuel, electric, water lines, or any other underground installations-that may be encountered during digging. Also, before starting the excavation, the contractor must contact the utility companies or owners include and inform them, within established or customary local response times, of the proposed work. The contractor must also ask the utility companies or owners to find the exact location of the underground installations. If they cannot respond within 24 hours (unless the period required by the state or local law is longer), or if they cannot find the exact location of the utility installations, the contractor may proceed with caution. To find the exact location of underground installations, workers must use safe and acceptable means. If underground installations are exposed, OSHA regulations also require that they be removed, protected or properly supported.

When all necessary specific information about the job site is assembled, the contractor is ready

to determine the amount, kind, and cost of safety equipment needed. A careful inventory of the safety items on hand should be made before deciding what additional safety material must be acquired. No matter how may trenching, shoring and backfilling jobs have been done in the past, each job should be approached with the utmost care and preparation.

**Before Beginning the Job**

It is important, before beginning the job, for the contractor to establish and maintain a safety and health program for the work site that provides adequate systematic policies, procedures, and practices to protect employees from, and allow them to recognize, job-related safety and health hazards.

An effective program includes provisions for the systematic identification, evaluation, and prevention or control of general workplace hazards, specific job hazards, and potential hazards that may arise from foreseeable conditions. The program may be written or verbal but it should reflect the unique characteristics of the job site.

To help contractors develop an effective safety and health program, in 1989 OSHA issued recommended guidelines for the effective management and protection of worker safety and health. The complete original text of the non-mandatory guidelines is found in the Federal Register (54 FR(18):3904-3916, January 26, 1989).

A copy of the guidelines can be obtained from the OSHA Publications Office, U.S. Department of Labor, 20 Constitution Avenue, N.W., Room N-3101, Washington, D.C. 20210, or from the nearest OSHA Regional Office listed in this booklet.

To be sure safety policies are implemented effectively, there must be cooperation among supervisors, employee groups, including union, and individual employees. Each supervisor must understand the degree of responsibility and authority he or she holds in a particular area. For effective labor support, affected unions should be notified of construction plans and asked to cooperate.

It is also important, before beginning work, for employers to provide employees who are exposed to public vehicular traffic with warning vests or other suitable garments marked with or made of reflectorized or high-visibility material and ensure that they wear them. Workers must also be instructed to remove or neutralize surface encumbrances that may create a hazard.

In addition, no employee should operate a piece of equipment, without first being properly trained to handle it and fully alerted to its potential hazards.

In the training and in the site safety and health program, it also is important to incorporate procedures for fast notification and investigation of accidents.

**On-the-Job Evaluation**

The Standard requires that a competent person inspect, on a daily basis, excavations and the adjacent areas for possible cave-ins, failures of protective systems and equipment, hazardous

atmospheres, or other hazardous conditions. If these conditions are encountered, exposed employees must be removed from the hazardous area until the necessary safety precautions have been taken. Inspections are also required after natural (e.g. heavy rains) or man-made events such as blasting that may increase the potential for hazards.

Larger and more complex operations should have a full-time safety official who makes recommendations to improve the implementation of the safety plan. In a smaller operation, the safety official may be part-time and usually will be a supervisor.

Supervisors are the contractor's representatives on the job. Supervisors should conduct inspections, investigate accidents, and anticipate hazards. They should ensure that employees receive on-the-job safety and health training. They should also review and strengthen overall safety and health precautions to guard against potential hazards, get the necessary worker cooperation in safety manners, and make frequent reports to the contractor.

It is important that managers and supervisors set the example for safety at the job site. It is essential that when visiting the job site, all managers, regardless of status, wear the prescribed protective equipment such as safety shoes, safety glasses, hard hats, and other necessary gear (see CFR 1926.100 and 102).

Employees must also take an active role in job safety. The contractor and supervisor should make certain that workers have been properly trained in the use and fit of the prescribed protective gear and equipment, that they are wearing and using the equipment correctly, and that they are using safe work practices.

Cave-Ins and Protective Support Systems

**Support Systems**

Excavation workers are exposed to many hazards, but the chief hazard is danger of cave-ins. OSHA requires that in all excavation employees exposed to potential cave-ins must be protected by sloping, or benching the sides of the excavation; supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

Designing a protective system can be complex because of the number of factors involved-soil classification, depth of cut, water content of soil, changes due to weather and climate, or other operation in the vicinity. The standard, however, provides several different methods and approaches (four for sloping and four for shoring, including the use of shields)* for designing protective systems that can be used to provide the required level of protection against cave-ins.

One method of ensuring the safety and health of workers in an excavation is to slope the side to an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal). These slopes must be excavated to form configurations that are in accordance with those for Type C soil found in Appendix B of the standard. A slope of this graduation or less is considered safe for any type soil (see Figure 1).

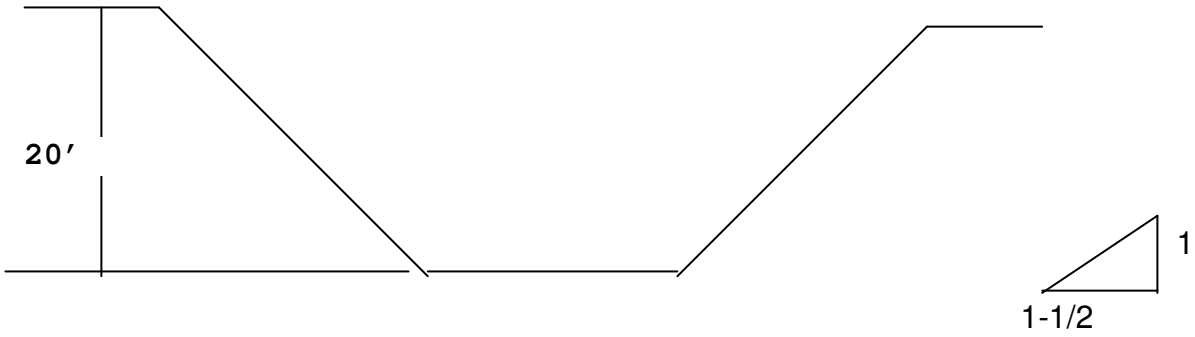


Figure 1. Excavations Made in Type C Soil

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1 1/2:1.

*See Appendix F to the standard for a complete overview of all options.

A second design method, which can be applied for both sloping and shoring, involves using tabulated data, such as tables and charts, approved by a registered professional engineer. These data must be in writing and must include sufficient explanatory information to enable the user to make a selection, including the criteria for determining the selection and the limits on the use of the data.

At least one copy of the information, including the identity of the registered professional engineer who approved the data, must be kept at the worksite during construction of the protective system. Upon completion of the system, the data must be stored away from the job site, but a copy must be made available, upon request, to the Assistant Secretary of Labor for OSHA.

Contractors also may use a trench box or shield that is either designed or approved by a registered professional engineer or is based on tabulated data prepared or approved by a registered professional engineer. Timber, aluminum, or other suitable materials may also be used. OSHA standards permit the use of a trench shield (also known as a welder's hut) as long as the protection it provides is equal to or greater than the protection that would be provided by the appropriate shoring system (see Figure 2).

The employer is free to choose the most practical design approach for any particular circumstance. Once an approach has been selected, however, the required performance criteria must be met by that system.

The standard does not require the installation and use of a protective system when an excavation (1) is made entirely in stable rock, or (2) is less than 5 feet deep and a competent person has examined the ground and found no indication of a potential cave-in.

**Safety Precautions**

The standard requires the employer to provide support systems such as shoring, bracing, or

underpinning to ensure the stability of adjacent structures such as buildings, walls, sidewalks or pavements.

Figure 2. Trench Shields

The standard prohibits excavation below the level of the base or footing of any foundation or retaining wall unless (1) a support system such as underpinning is provided, (2) the excavation is in stable rock, or (3) a registered professional engineer determines that the structure is sufficiently removed from the excavation and that excavation will not pose a hazard to employees.

Excavations under sidewalks and pavements are also prohibited unless an appropriately designed support system is provided or another effective method is used.

**Installation and Removal of Protective Systems**

The standard requires the following procedures for the protection of employees when installing support systems:

- Securely connect members of support system,
- Safely install support systems,
- Never overload members of support systems, and
- Install other structural members to carry loads imposed on the support system when temporary removal of a individual members is necessary.

In addition, the standard permits excavation of 2 feet or less below the bottom of the members of a support or shield system of a trench if (1) the system is designed to resist the loads calculated for the full depth of the trench, and (2) there are no indications, while the trench is open, of a possible cave-in below the bottom of the support system. Also, the installation of support systems must be closely coordinated with the excavation of trenches.

As soon as work is completed, the excavation should be back-filled as the protective system is designated. After the excavation has been cleared, workers should slowly remove the protective system from the bottom up, taking care to release members slowly.

**Materials and Equipment**

The employer is responsible for the safe condition of materials and equipment used for protective systems. Defective and damaged materials and equipment can result in the failure of a protective system and cause excavation hazards.

To avoid possible failure of a protective system, the employer must ensure that (1) materials and equipment are free from damage or defects, (2) manufactured materials and equipment are used and maintained in a manner consistent with the recommendations of the manufacture and in a way that will prevent employee exposure to hazards, and (3) while in operation, damaged materials and equipment are examined by a competent person to determine if they are suitable

for continued use. If the materials and equipment are not safe for use, they must be removed from service. These materials cannot be returned to service without the evaluation and approval of a registered professional engineer.

## Other Hazards

## Falls and Equipment

In addition to cave-in hazards and secondary hazards related to cave-ins, there are other hazards from which workers must be protected during excavation-related work. These hazards include exposure to falls, falling loads, and mobile equipment. To protect employees from these hazards, OSHA requires the employer to take the following precautions:

- Keep materials or equipment that might fall or roll into an excavation at least 2 feet from the edge of excavations, or have retaining devices, or both.
- Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs, to alter operations of the edge of an excavation. If possible, keep the grade away from the excavation.
- Provide scaling to remove loose rock or soil or install protective barricades and other equivalent protection to protect employees from the hazard of falling, rolling, or sliding material or equipment.
- Prohibit employees from working on faces of sloped or benched excavations at levels above other employees unless employees at lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.
- Prohibit employees under loads that are handled by lifting or digging equipment. To avoid being struck by any spillage or falling materials, require employees to stand away from vehicles being loaded or unloaded. If cabs of vehicles provide adequate protection from falling loads during loading and unloading operations, the operators may remain in them.

### Water Accumulation

The standard prohibits employees from working in excavations where water has accumulated or is accumulating unless adequate protection has been taken. If water removal equipment is used to control or prevent water from accumulating, the equipment and operations of the equipment must be monitored by a competent person to ensure proper use.

OSHA standards also require that diversion ditches, dikes, or other suitable means be used to prevent surface water from entering an excavation and to provide adequate drainage of the area adjacent to the excavation. Also, a competent person must inspect excavations subject to runoffs from heavy rains.

### Hazardous Atmospheres

Under this provision, a competent person must test excavations greater than 4 feet in depth as well as ones where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist, before an employee enters the excavation. If hazardous conditions exist, controls such as proper respiratory protection or ventilation must be provided. Also, controls

used to reduce atmospheric contaminants to acceptable levels must be tested regularly.

Where adverse atmospheric conditions may exist or develop in an excavation, the employer also must provide and ensure that emergency rescue equipment, (e.g., breathing apparatus, a safety harness and line, basket stretcher, etc.) is readily available. This equipment must be attended when used.

When an employee enters bell-bottom pier holes and similar deep and confined footing excavations, the employee must wear a harness with a lifeline. The lifeline must be securely attached to the harness and must be separate from any line used to handle materials. Also, while the employee wearing a lifeline is in the excavation, an observer must be present to ensure that the lifeline is working properly and to maintain communication with the employee.

**Access and Egress**

Under the standard, the employer must provide safe access and egress to all excavations. According to OSHA regulations, when employees are required to be in trench excavations 4-feet deep or more, adequate means of exit, such as ladders, steps, ramps or other safe means of egress, must be provided and be within 25 feet of lateral travel. If structure ramps are used as a means of access or egress, they must be designed by a competent person if used for employee access or egress, or a competent person qualified in structural design if used by vehicles. Also, structural members used for ramps or runways must be uniform in thickness and joined in a manner to prevent tripping or displacement.

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## Related Issues

### Hazard Communication

The Hazard Communication Standard (29 CFR 1910.1200) requires employers to inform employees of the identities, properties, characteristics, and hazards of chemicals they use and the protective measures they can take to prevent adverse effects. The standard covers both physical hazards (e.g., flammability) and health hazards (e.g., lung damage, cancer). Knowledge acquired under the Hazard Communication Standard will help employers provide safer workplaces for their employees, establish proper work practices, and help prevent chemical-related illnesses and injuries.

### Access to Medical and Exposure Records

Under the provision of the Access to Medical and Exposure Records standard (29 CFR 1910.20), employees, their designated representatives, and OSHA are permitted direct access to employer-maintained exposure and medical records. This access is designed to yield both direct and indirect improvements in the detention, treatment, and prevention of occupational disease. Also, access to these records will assist employees in the management of their own safety and health.

**Recordkeeping**

Each employer must preserve and maintain accurate medical and exposure records for each employee. The standard requires that exposure records be kept for 30 years and medical records be kept for at least the duration of employment plus 30 years. Background data for exposure records such as laboratory reports and work sheets need to be kept only for 1 year. Records of employees who have worked for less than 1 year need not be retained after employment, but the employer must provide these records to the employee upon termination of employment. First-aid records of one-time treatment need not be retained for any specified period.

The employer must inform each employee of the existence, location, and availability of these records. When an employer plans to stop doing business and there is no successor employer to receive and maintain these records, the employer must notify employees of the right to access of the records at least 3 months before the employer ceases to do business. At the same time, the employer also must inform the National Institute for Occupational Safety and Health.

**State Plan States**

States administering their own occupational safety and health program (see listing on page ), through plans approved under section 18(b) of the Occupational Safety and Health Act of 1970, must adopt standards and enforce requirements at least as effective as Federal requirements. There are currently 25 State plan States; 23 covering private and public (State and local government) sectors and two covering public sector only.

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Summary

Trenching and excavation work presents serious risks to all workers involved. The greatest risk, and one of primary concern, is that of cave-ins. Furthermore, when cave-in accidents occur, they are much more likely to result in worker fatalities than other excavation-related accidents. Strict compliance, however, with all sections of the standard will prevent or greatly reduce the risk of cave-ins as well as other excavation-related accidents.

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Occupational Safety and Health Administration
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(307)777-7786 or 777-7787

DIRECTOR
Washington Department of Labor and Industries
General Administration Building
Room 334 - AX-31
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**Related Publications**

A single free copy of the following publications can be obtained from the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, N.W., Room N-301, Washington, D.C., 20210.

Please send a self-addressed label with your request.

All about OSHA - OSHA 2056

Chemical Hazard Communication - OSHA 3084

Construction Industry Digest - OSHA 2207

Consultation Services for the Employer - OSHA 3047

Ground-Fault Protection on Construction Sites - OSHA 3007

OSHA Inspections - OSHA 2098

OSHA: Safety and Health is our Middle Name - OSHA 3076

Personal Protective Equipment - OSHA 3077

Respiratory Protection - OSHA 3079

Safety and Health Program Management Guidelines
(Federal Register (54 FR (18):3904-3916, January 1989))

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A Hazard Communication Compliance Kit may be ordered from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 for $18.00 ($22.00 for foreign addresses). OSHA Publication 3104, GPO order No. 929-022-00000-9. The kit can be ordered from GPO by phone using Visa or Mastercard; call (202)783-3238.

* U.S. Government Printing Office: 1991 282-150/45367

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Seattle, WA 98174
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- These states and territories operate their own OSHA-approved job safety and health programs (Connecticut and New York plans cover public employees only). States with

approved programs must have a standard that is identical to or at least as effective as, the federal standard.

## PART 2 - PRODUCTS

### 2.01 CLASSIFICATION

A. All excavations shall be unclassified as shall include all materials encountered regardless of their nature or the manner in which they are removed.

## PART 3 - EXECUTION

### 3.01 CONSTRUCTION METHODS

A. Prior to commencing this work, all erosion control and tree protection measures required shall be in place and all utilities located and protected.

B. Construction equipment shall not be operated within the drip line of trees, unless otherwise indicated.

C. Construction materials shall not be stockpiles under the canopies of trees. No excavation or embankment shall be placed within the drip line of trees until tree wells are constructed.

D. All excavation shall be performed as specified herein and shall conform to the established alignment, grades and cross sections.

E. Suitable excavated materials shall be utilized, in so far as practical, in constructing required embankments.

F. The construction of all embankments shall conform to Section 02236 - Embankment. No material shall be stockpiled within the banks of a waterway.

G. Unsuitable excavated materials or excavation in excess of that needed for construction shall be known as "Waste" and shall become the property of the CONTRACTOR and it shall become his sole responsibility to dispose of this material off the limits of the right-of-way in an environmentally sound manner at a permitted disposal site.

H. Adequate dewatering and drainage of excavation shall be maintained throughout the time required to complete the work.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

A. Measurement of the volume of excavation in cubic yards by the average end areas. Cross sectional areas shall be computed from the existing ground section to the established line of the sub-grade, as shown on typical sections for the limits

of the right-of-way or other work limits, including parkway slopes and sidewalk areas.

B. Measurement of the area in square yards of surface area excavated as shown on the typical sections included in the plans.

C. Measurement of the volume of excavation is in cubic yards, based upon the average end areas taken from pre-construction cross sections and planned grades. The planned quantities for excavation will be used as the measurement for payment for this item.

## 4.02 PAYMENT

A. This item will be paid for at the contract unit price bid for "Excavation", as provided under the measurement method as included in the bid, which price shall be full compensation for all work herein specified including: dewatering, drainage, sub-grade preparation, unless otherwise indicated and the furnishing of all materials, equipment, tools, labor and incidentals
necessary to complete the work.

B. When not listed as a separate contract pay item, excavation shall be considered as incidental work, and the cost thereof shall be included in such contract pay item(s) as are provided in the proposal contract.

C. Compensation, whether by contract pay item or incidental work will be furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*** * * END OF SECTION * * ***

**SECTION 02238**

# REMOVAL OF CONCRETE

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. This work shall consist of breaking up, removing and satisfactorily disposing of existing concrete, as classified, at locations indicated or as directed by the Engineer.

B. Existing concrete, when under this section, will be classified as follows:

1. Concrete Curb will include curb, curb and gutter combinations thereof.
2. Concrete Slabs will include, but not be limited to, patio slabs, porch slabs, concrete riprap and concrete pavement.
3. Sidewalks and Driveways will include concrete sidewalks and driveways.
4. Concrete Walls will include all walls regardless of height and wall footings.
5. Concrete Steps will include all steps and combinations of walls and steps.
6. Abandoned Foundations will include abandoned Electric Department foundations.
7. Miscellaneous Concrete shall include but not be limited to manholes, inlets, junction boxes and headwalls.

## PART 2 PRODUCTS

### 2.01 MORTAR:

A. Mortar, for repair of existing concrete structures, shall conform to the requirements thereof in Section 03300 - Cast-In-Place Concrete.

## PART 3 - EXECUTION

### 3.01 CONSTRUCTION METHODS:

A. Prior to commencing this work, all erosion control and tree protection measures required shall be in place and all utilities located and protected. The existing concrete shall be broken up, removed to conform to Section 02101 - "Preparing Right-of-Way" and disposed of by the Contractor and deposited at a permitted at a permitted disposal site.

B. Where only a portion of the existing concrete is to be removed and that remaining will continue to serve in its purpose, care shall be exercised to avoid damage to that portion to remain in place.

C. The existing concrete shall be cut to the neat lines when indicated or as established by the Engineer, by sawing with an appropriate type circular concrete

saw to a minimum depth of 1/2 inch.

D. Any reinforcing steel encountered shall be cut off 1 inch inside of concrete sawed line. Any existing concrete which is damaged or destroyed beyond the neat lines so established shall be replaced at the Contractor's expense.

E. Remaining concrete shall be mortared to protect the reinforcing steel and provide a neat clean appearance.

F. Where reinforcement is encountered in the removed portions of structures to be modified, a minimum of 1 foot of steel length shall be cleaned of all old concrete and left in place to tie into the new construction where applicable.

G. All unsuitable material shall be removed and replaced with approved material.

H. All foundation, walls or other objectionable material shall be removed to a minimum depth of 18 inches below all structures and 12 inches below areas to be vegetated.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT:

A. Concrete curb and concrete wall removed as prescribed above will be measured by the linear foot in its original position regardless of the dimensions or size.

B. Concrete slabs and concrete sidewalks and driveways removed as prescribed above will be measured by the square foot in original position, regardless of the thickness and reinforcing.

C. Concrete steps removed will be measured per linear foot of each individual step tread including the bottom step.

D. Concrete foundation removed will be measured per each.

E. Miscellaneous concrete removed will be measured per each.

### 4.02 PAYMENT:

A. This item will be paid for at the contract unit price bid for "Removed Concrete Curb", "Removed Concrete Slab", "Remove Concrete Sidewalks and Driveways", "Removed Concrete Foundations" and "Remove Miscellaneous Concrete" which price shall be full compensation for all work herein specified, including the disposal of all material not required in the work, the furnishing of all materials, equipment, tools, labor and incidentals necessary to complete the work.

B. When not listed as a separate contract pay item, removal of concrete shall be considered as incidental work, and the cost thereof shall be included in such contract pay item(s) as are provided in the proposal contract.

C. Compensation, whether by contract pay item or incidental work will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*** * * END OF SECTION * * ***

**SECTION 02240**

**LIME STABILIZATION**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. Treating of subgrade, sub-base, and base courses by the pulverization, addition of lime, mixing and compacting the mixed material to the required density.

B. Application to natural ground, embankment, existing pavement, base or sub-bases under this contract, or as directed by the ENGINEER, which shall be constructed as specified herein and in conformity with the typical section, lines, grades as shown on the plans.

### 1.02 QUALITY ASSURANCE:

A. Comply with the latest published edition (or addended portions thereof) of the following standards and codes:

1. ASTM c-207 or Type N - Requirements for Hydrated Lime
2. ASTM Designation C5 - Quick Lime for Structural Purposes
3. Texas SDHPT Test Method Tex-600-J - Hydrated Lime
4. ASTM D-1557 - Density of Compacted Materials
5. ASTM D-2049 - Density of Compacted Materials
6. Texas SDHPT Test Method Tex 113-E - Density of Compacted Materials
7. AASHTO T-99, Method C - Density of Compacted Materials
8. AASHTO M-216 - Hydrated Lime

## PART 2 - PRODUCTS

### 2.01 HYDRATED (DRY) LIME:

A. Use, for stabilization of soils, a dry powder consisting primarily of calcium hydroxide (Ca(OH)2).

B. Provide Material in accordance with Texas SDHPT Test Method TEX-600-J and conforming to the following chemical composition:

| | |
|---|---|
| Hydrate Alkalinity, Percent by Weight Ca(OH)2 | 90% Min. |
| Un-hydrate Lime Content, Percent by Weight CaO | 5% Max. |
| "Free Water" Content, Percent by Weight H2O | 4% Max. |

And with the following residue retainage:

| | |
|---|---|
| Residue Retained on No 6 Sieve | None |
| Residue Retained on No. 10 Sieve | 1% Max. |
| Residue Retained on No. 30 Sieve | 2.5% Max. |

C. Store and handle hydrated lime in closed, weather proof containers, storage bins, or bags until immediately before application to the road.

D. Furnish hydrated lime in trucks, as applicable, with weight of lime measured on certified scales and clearly marked on the truck or stamped on a haul ticket.

E. Furnish hydrated lime in bags, as applicable, bearing the manufacturer's certified weight. Bags varying more than five percent may be rejected.

**2.02 HYDRATED LIME SLURRY:**

A. Provide a pumpable suspension of solids, principally composed of hydrated lime, in water.

B. Provide material with a "Solids Content" having a hydrated alkalinity Ca (OH) 2 of not less than 90 percent by weight and a residue retainage equal to the retainage specified in Part 2.01 above.

C. Supply Type B, commercial lime slurry, with a "dry solids content" of at least 31% by weight of the slurry (Grade 1).

D. Procure mixing water only from County of Hidalgo water mains. The Contractor shall make arrangements with the Water Department to obtain a meter and subsequent payment for water used.

**2.03 QUICKLIME (MASON'S LIME):**

A. Provide quicklime, as a dry powder in a tank, to form a lime slurry.

**PART 3 - EXECUTION**

**3.01 GENERAL:**

A. Provide a completed course of treated materials containing a uniform lime mixture, free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth, and with a smooth surface and suitable for placement of subsequent courses.

B. Regulate sequence work, use proper amounts of lime, maintain the work and rework the courses as necessary to meet the requirements of this specification.

C. Construct and shape roadbed to conform with typical sections, lines and grades as shown on the plans, or as directed by the ENGINEER.

D. Excavate materials to be treated to the proposed bottom of lime treatment grade, or secondary grade and remove or window to expose.

E. Correct any wet or unstable material below the secondary grade by scarifying, adding lime and compacting until uniform stability is achieved.

F. Use a cutting or pulverizing machine, as applicable, to remove subgrade material accurately to secondary grade and to pulverize the material at the same time. When cutting or pulverizing machine is used, the requirement for exposing and windowing the material is waived.

G. Roll subgrade before use of pulverizing machinery and correct any soft areas that rolling operations shall reveal.

H. Materials for new bases and sub-bases shall be delivered, placed and spread in the required amount per station. The material shall be thoroughly mixed prior in the same working day.

I. Lime shall be spread only on that area where first mixing operation can be completed in the same working day.

**3.02 SLURRY PLACING:**

A. Mix lime, in amounts as shown on plans or as specified by the Materials Engineering Laboratory, with water in trucks or approved distributors and apply as a thin water suspension or slurry.

B. The distribution of lime at the rates shown on the plans, as directed herein, and/or as directed by the ENGINEER. Shall be attained by successive passes over a measured surface of roadway until the proper moisture and lime content is achieved.

C. Lime slurry distributors shall be equipped with an agitator for maintaining lime and water in a uniform mixture.

**3.03 DRY PLACING:**

A. Spread lime by an approved screw type spreader box or by bag distribution at the rate shown in the plans.

B. Distribute lime at a uniform rate and in such a manner as to reduce scattering of lime to a minimum. Lime shall not be applied when wind conditions, in the opinion of the ENGINEER, will cause objectionable blowing of lime to traffic or adjacent properties.

C. Motor graders shall not be used to spread lime.

D. Sprinkle material until proper moisture and lime content has been secured.

**3.04 MIXING**

A. Mixing procedures shall be the same for "Dry Placing" or "Slurry Placing" or lime.

B. Treatment for Materials in Place:

1. Thoroughly mix material and lime using approved road mixers or other approved equipment, until a homogeneous, friable mixture of material is obtained, free from all clods and lumps.
2. Mix as thoroughly as possible at the time of lime application of materials containing plastic clay or other materials not readily mixed with lime, bring to proper moisture content, seal with a pneumatic roller, and leave to cure one to four days, as directed by the ENGINEER.
3. During curing period, material shall be kept moist by method(s) approved by the ENGINEER.
4. Uniformly mix, after required curing time, using approved methods.
5. Clods in soil binder - Lime mixture shall be reduced in size by raking, blading, dicing, harrowing, scarifying or by other approved pulverization methods such that non-slaking aggregates obtained on the No. 4 sieve are removed. The remainder of the material shall meet the following requirements when test dry by laboratory sieves:

   Minimum Passing 1 3/4 inch 100%
   Minimum Passing No. 4 Sieve 60%

C. Treatment of New Material

1. Thoroughly mix and blend, using approved road mixers or other approved equipment, the base or sub-base material, lime and required water until a homogeneous, friable mixture is obtained.
2. When lime is placed as a slurry and mixed by use of blades, the material shall be bladed as the lime water mixture is applied.

D. During the time between application and mixing, hydrated lime that has been exposed to the open air for a period of six hours or more, or to excessive loss due to washing or blowing, shall not be accepted for payment.

## 3.05 COMPACTION:

A. Compaction of the mixture shall begin immediately after final mixing and in no case later than three calendar days after final mixing.

B. Aerate or sprinkle material as required to provide optimum moisture.

C. Compaction shall begin at the bottom and shall continue until entire depth of mixture is uniformly compacted to 95% of maximum density as determined by AASHTO T-99, Method C.

D. If any portion fails to meet the density specified, it shall be reworked as required to obtain specified density.

### 3.06 FINISHING, CURING, AND PREPARATION FOR SURFACING:

A. Shape surface after compaction to the required lines, grades, and cross sections, followed by thorough rolling sufficiently light to prevent hair-line cracking.

B. Complete section shall be moist cured for a minimum of seven days before further coursed are added or any traffic permitted, other than sprinkling equipment.

C. The surface or compacted layer shall be kept moist until covered by other base or paving material, or until an application of CSS-1 or SS-1 emulsified asphalt as a curing seal. Curing seal shall be applied as soon as possible after final rolling at a rate of 0.10 to 0.20 gallons per square yard. The exact rate will be as directed by the ENGINEER.

No equipment or traffic will be permitted on lime treated materials for 72 hours after application of curing seal.

### 3.07 MAINTENANCE:

A. Maintain the completed lime treated material within the limits of contract, in condition satisfactory to the ENGINEER as to grade, crown and cross section until surface course is constructed.

B. Immediately repair all irregularities and defects that may occur at no cost to the County and as directed by the ENGINEER.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT AND PAYMENT:

A. Lime treatment shall be measured for payment in square yards for the thickness of material shown on the plans for the surface area of completed and accepted work. Lime treatment shall be paid for at the contract unit price per square yard.

B. Lime will be measured by the ton 2000 pounds dry weight. Lime will be paid for at the contract unit cost per ton of 2000 pounds dry weight.

C. The contract unit price for lime treatment shall be the total compensation for preparing roadbed; for loosening, pulverizing, application of lime, water content of slurry mixture and the mixing water; mixing, shaping, sprinkling, compacting, finishing, curing and maintaining; for manipulations required, for all labor, equipment, fuels, tools and incidentals necessary to complete the work.

D. The contract unit price for lime shall be full compensation for furnishing the material; for all freight involved; for all unloading, storing and hauling; and for all labor, equipment, fuels, tools, and incidentals necessary to complete the work.

*** * * END OF SECTION * * ***

# SECTION 02601

# FLEXIBLE BASE

## PART I - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. This work shall consist of furnishing and placing a foundation course for surface courses or for other base courses.

B. Flexible base shall be composed of either caliche (argillaceous limestone, calcareous or calcareous clay particles, with or without stone, conglomerate, gravel, sand or other granular materials), crushed stone, gravel, iron ore topsoil, shell, or crushed slag.

C. Flexible base shall be constructed as specified herein in one or more courses in conformance with details, lines and grades shown on the plans, and as established by the ENGINEER.

## PART 2 -PRODUCTS

### 2.01 MATERIALS:

A. Materials for flexible base shall be crushed or un-crushed as necessary to comply with the requirements hereinafter specified.

B. Materials shall consist of durable course aggregate particles mixed with approved binding materials.

### 2.02 LIME STABILIZATION:

A. Where shown on the plans, or directed by the ENGINEER, material for flexible base shall be lime stabilized in accordance with the provisions of Section 02240.

### 2.03 TYPES:

A. Type A - Crushed or broken aggregate (excluding gravel aggregate).

B. Type B - Gravel Aggregate

C. Type C - Iron Ore Topsoil

D. Type D - Shell Aggregate with Sand Admixture

E. Type E - Shell Aggregate with Sand and Caliche Admixture

F. Type F - Caliche

G. Type G - Crushed Slag

H. Unless otherwise noted on the plans, the CONTRACTOR may use any one type of these types provided the material used meet the requirements set forth in the specification test limits herein.

**2.04 GRADES:**

A. Unless otherwise shown on the plans or directed by the ENGINEER, the final course of base material shall consist of Grades 1,2,3, or 4, as specified in Table 02601-1.

B. Base courses or sub-base materials, unless otherwise noted on the plans or directed by the ENGINEER, may consist of Grades 1, 2, 3, or 4, as specified in Table 02601-1.

C. All grades shall, when tested in accordance with standard laboratory test procedures, meet the physical requirements set forth in Table 02601-1.

D. Testing of flexible base materials shall be in accordance with the following test procedures:

| **TEST** | **TESTING PROCEDURE** |
|---|---|
| Preparation for soil constants and sieve analysis | TEX-101-E |
| Liquid Limit | TEX-104-E |
| Plastic Limit | TEX-105-E |
| Plasticity Limit | TEX-106-E |
| Sieve Analysis | TEX-110-E |
| Wet Ball Mill | TEX-116-E |
| Triaxial Tests | TEX-117-E ( Part I or II) |

E. Unless otherwise specified on the plans, samples for testing the material for Soil constants, Gradation and Wet Ball Mill shall be taken prior to the compaction operations.

F. Unless otherwise specified on the plans, samples for triaxial tests shall be taken from the stockpile or from production, as directed by the ENGINEER, where stockpiling is required and from production where stockpiling is not required.

**TABLE 02601-1**

**PHYSICAL REQUIREMENTS FOR FLEXIBLE BASE MATERIALS**

| | GRADES | | | |
|---|---|---|---|---|
| **TYPES** | **GRADE 1:** | **GRADE 2:** | **GRADE 3:** | **GRADE 4:** |
| | (Triaxial Class 1 Min compressive strength, psi: 45 at 0 psi lateral pressure and 175 at 15 psi lateral pressure. | (Traxial class 1 to 2.3) Min. compressive strength, psi: 35 at 0 psi lateral pressure and 175 at 15 psi lateral pressure. | (Unspecified Triaxial Class) | |
| **TYPE A** | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | |
| Crushed or Broken Aggregate (excluding gravel aggregate) | 1-3/4 .....0<br>7/8" .....10-35<br>3/8" .....30-50<br>No. 4.....45-65<br>No. 40.....70-85<br>Max LL.....35<br>Max PI .....10<br>**Wet Ball Mill**<br>Max Amt. .....40<br>Max Increase in Passing<br>No. 40.....20 | !-3/4" ..... 0-10<br>No. 4 ..... 45-75<br>No. 40 ..... 60-85<br>Max LL..... 40<br>Max PI ..... 12<br>**Wet Ball Mill**<br>Max. Amt. ..... 50<br>Max Increase in Passing<br>No. 40 ..... 20 | 1-3/4" .....0-10<br>No. 40.....60-85<br>Max LL..... 45<br>Max PI ..... 15<br>**Wet Ball Mill**<br>Max. Amt. ..... 55<br>Max. Increase in Passing<br>No. 40..... 20 | As Shown On Plans |
| **TYPE B** | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | |
| Gravel Aggregate | | 1-3/4" ..... 0-10<br>No. 4 ..... 30-75<br>No. 40 ..... 70-85<br>Max LL..... 35<br>Max PI ..... 12 | 1-3/4" 0-5<br>No. 4 30-75<br>No. 40.....65-85<br>Max. LL..... 35<br>Max. PI ..... 12 | As Shown On Plans |
| **TYPE C** | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | |
| Iron Ore Topsoil | | 2-1/2" ..... 0<br>No. 40 ..... 50-85<br>Max. LL..... 35<br>Max. PI ..... 12 | 2-3/4" ..... 0<br>No. 40.....45-85<br>Max. LL..... 35<br>Max. PI ..... 12 | As Shown On Plans |

**TABLE 02601-1 CONT'D**

| **TYPE D** | | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | |
|---|---|---|---|---|
| Sand-Shell | | 1-3/4" ..... 0-10<br>No. 4 ..... 45-65<br>No. 40 ..... 50-70<br>Max. LL..... 35<br>Max. PI ..... 12 | 1-3/4" .....0-10<br>No. 40.....45-65<br>Max. LL.....35<br>Max PI ..... 12 | As Shown On Plans |
| **TYPE E** | | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | |
| Shell with Sand and Caliche | | 1-3/4" ..... 0<br>No. 40 ..... 45-65<br>Max. LL..... 35<br>Max. PI ..... 10 | 1-3/4" .....0<br>No. 40... ....45-65<br>Max. LL.....35<br>Max. PI .....12 | As Shown On Plans |
| **TYPE F** | | **Retained on Sq. Sieve %** | **Retained on Sq. Sieve %** | |
| Caliche | | 1-3/4" ..... 0<br>No. 4 ..... 45-75<br>No. 40 ..... 50-85<br>Max. LL..... 40<br>Max. PI ..... 12 | 1-3/4" .....0<br>No. 40.....50-85<br>Max. LL.....40<br>Max. PI .....12 | As Shown On Plans |
| **TYPE G** | | | | |
| Crushed Blast Furnace Slag | | | | As Shown On Plans |

G. The limits establishing reasonable close conformity with the specified gradation and plasticity index are defined by the following:

1. The ENGINEER may accept the material, providing not more than 2 of 10 consecutive gradation tests performed are outside the specified limits on any individual or combination of sieves by no more than 5% and where no two consecutive tests are outside the specified limits.
2. The ENGINEER may accept the material providing not more than 2 of 10 consecutive plasticity index samples tested are outside the specified limit by no more than two points and where no two consecutive tests are outside the specified limit.

**2.05 STOCKPILING:**

A. When specified on the plans, the material shall be stockpiled prior to delivery on the road. The stockpile shall be not less than the height indicated and shall be made up of layers of material not to exceed the depth shown on the plans.

B. After a sufficient stockpile has been constructed as specified on the plans, the CONTRACTOR may proceed with loading from the stock- pile for delivery to the road.

C. In loading from the stockpile for delivery to the road, the material shall be loaded by making successive vertical cuts through the entire depth of the stockpile.

D. If the CONTRACTOR elects to produce the Type a material from more than one material or more than one source, each material shall be crushed separately and placed in separate stockpiles so that at least 75 percent of the material in the course aggregate stockpiles will be retained on the No. 4 sieve and at least 70 percent of the material in the fine aggregate stockpile will pass the No. 4 sieve.

E. The materials shall be combined in a central mixing plant in the proportions determined by the ENGINEER to produce a uniform mixture which meets all of the requirements of the specification. In the event that combinations of the materials produced fail to meet all of the specification requirements, the CONTRACTOR will be required to secure other materials which will meet specifications requirements.

F. The central mixing plant shall be either the batch or continuous flow type, and shall be equipped with feeding and metering devices which will add the materials into the mixer in the specified quantities.

G. Mixing shall continue until a uniform mixture is obtained.

## PART 3 - EXECUTION

**3.01 PREPARATION OF SUBGRADE:**

A. Type roadbed shall be excavated and shaped in conformity with the typical sections shown on the plans and to the lines and grades as established by the ENGINEER.

B. All unstable or otherwise objectionable material shall be removed from the sub-grade and replaced with approved material.

C. All holes, ruts and depressions shall be filled with approved material and, if required, the sub-grade shall be thoroughly wetted with water and reshaped and rolled to the extent directed in order to place the sub-grade in an acceptable condition to receive the base material.

D. The surface of the sub-grade shall be finished to line and grade as established and in conformity with the typical section shown on plans, and any deviation in

excess of 1/2 inch in cross section and in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.

E. Sufficient sub-grade shall be prepared in advance to insure satisfactory prosecution of the work.

F. Material excavated in the preparation of the sub-grade shall be utilized in the construction of adjacent shoulders and slopes or other- wise disposed on as directed, and any additional material required for the completion of the shoulders and slopes shall be secured from sources indicated on plans or as directed by the Engineer.

**3.02 PLACEMENT OF FIRST COURSE - TYPE A, TYPE B, TYPE C, TYPE F, AND TYPE G MATERIAL:**

A. Immediately before placing the base material, the sub-grade shall be checked as to conformity with grade and section.

B. The material shall be delivered in approved vehicles of a uniform capacity, and it shall be the charge of the CONTRACTOR that the required amount of specified material shall be delivered in each 100- foot station.

C. Material deposited upon the sub-grade shall be spread and shaped the same day.

D. In the event inclement weather or other unforeseen circumstances render impractical the spreading of the material during the first 24-hour period, the materials shall be scarified and spread as directed by the Engineer.

E. The material shall be sprinkled, if directed, and shall then be bladed, dragged and shaped to conform to typical sections as shown on plans.

F. All areas and "nests" of segregated coarse or fine material shall be corrected to removed and replaced with well graded material, as directed by the ENGINEER.

G. If additional binder is considered desirable or necessary after the material is spread and shaped, it shall be furnished and supplies in the amount directed by the ENGINEER. Such binder material shall be carefully and evenly incorporated with the material in place by scarifying, harrowing, brooming or by other approved methods.

H. The course shall be compacted by method of compaction hereinafter specified as the "Ordinary Compaction" method or the "Density Control" method of compaction as indicated on the plans, or as directed by the ENGINEER.

1. When the "Ordinary Compaction" method is to be used, the following provisions shall apply:

a) The course shall be sprinkled as required and rolled ad directed until a uniform compaction is secured. Throughout this entire operation,

the shape of the course shall be maintained by blading and the surface upon completion shall be smooth and in conformity with the typical sections shown on plans and to the established lines and grades.

b) In that area on which pavement is to be placed, any deviation in excess of 1/4 inch in cross section in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.

c) All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and re-compacting by sprinkling and rolling.

2. When the "Density Control" method of compaction is to be used, the following provisions shall apply:

a) The course shall be sprinkled as required and compacted to the extent necessary to provide not less than the percent density as hereinafter specified under "Density".

b) In addition to the requirement specified for density, the full depth of the flexible base shown on the plans shall be compacted to the extent necessary to remain firm and stable under construction equipment.

c) After each section of flexible base is completed, tests as necessary will be made by the ENGINEER. If the material fails to meet the density requirements, it shall be reworked as necessary to meet these requirements.

d) Throughout this entire operation, the shape of the course shall be maintained by blading, and the surface upon completion shall be smooth and in conformity with the typical sections shown on the plans and to established lined and grades.

e) In that area on which pavement is to be placed, any deviation in excess of 1/4 inch in cross section in a length of 16 feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.

f) All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and re-compacting by sprinkling and rolling.

I. Should the base course, due to any reason or cause, lose the required stability, density or finish before the surfacing is complete, it shall be re-compacted and refinished at the sole expense of the CONTRACTOR.

J. Where Type C material is used, the material shall be scarified, thoroughly wetted, mixed, manipulated, and bladed so as to secure a uniformly wetted material, and pulled in over the sub-grade in courses and set under the action of blading and rolling. The work of mixing, blading, rolling, shaping, and subsequent maintenance shall be performed by the continuous use of sufficient number of satisfactory rollers and power maintainers with adequate scarifier attachments.

**3.03 PLACEMENT OF FIRST COURSE - TYPE D MATERIAL:**

A. Immediately before placing the base material, the sub-grade shall be checked as to conformity with grade and section, and corrections made if necessary.

B. All materials shall be delivered in approved vehicles of a uniform capacity.

C. The required amount of shell shall be uniformly spread across the section and allowed to dry sufficiently to insure proper slaking and mixing of the binder material. Immediately upon completion of the drying period, as determined by the ENGINEER, the specified amount of sand admixture as required to produce a combined material meeting the requirements hereinbefore specified, shall be spread uniformly across the shell.

D. The material shall then be sprinkled as required and thoroughly mixed by blading and harrowing, or other approved methods.

E. Failure to proceed with the placing of sand admixture or mixing and placing operations will be grounds for the suspension of placing of shell.

F. Under no conditions will the CONTRACTOR be allowed to place an excessive amount of shell without proceeding with the mixing and placing operations.

G. The course shall be compacted by the method of compaction hereinafter specified as the "Ordinary Compaction" method or the "Density Control" method of compaction as indicated on the plans, or as directed by the ENGINEER.

1. When the plans indicate that the "Ordinary Compaction" method is to be used, the following provisions shall apply:

a) After mixing, all material shall be windrowed, and then spread over the section in layers.

b) The layer shall not exceed 2 inches in loose depth.

c) If necessary to prevent segregation, the material shall be wetted in the window prior to spreading.

d) After each lift is spread, it shall be sprinkled and rolled to secure maximum compaction as directed by the ENGINEER. Succeeding layers shall then be placed similarly until the course is completed.

e) All areas and "nest of segregated coarse or fine material shall be corrected or removed and replaced with well graded material, as directed by the ENGINEER.

f) The course shall then be sprinkled as required and rolled as directed until a uniform compaction is secured.

g) Throughout this entire operation, the shape of the course shall be maintained by blading; and the surface, upon completion, shall be smooth and in conformity with the typical sections shown on plans, and to the established lines and grades.

h) In that area on which pavement is to be place, any deviation in excess of 1/4 inch in cross section in a length of 16-feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and re-compacting by sprinkling and rolling.

i) All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and re-compacting by sprinkling and rolling.

2. When the plans indicate that the "Density Control" method of compaction is to be used, the compaction method shall be the same as prescribed for Type A, Type B, Type C, Type F and Type G material.

H. When indicated on the plans or permitted by the ENGINEER, Type D material may be mixed in a central mixing plant and delivered to the road as a combined mixture. When this method is used, the combined mixture shall meet the requirements for type D material as hereinbefore specified and the placing and compaction requirement shall be the same as prescribed for Type A, Type B, Type C, Type F and Type G material.

**3.04 PLACEMENT OF FIRST COURSE - TYPE E MATERIAL:**

A. The construction methods for placing the first course of Type E material shall be the same as prescribed for Type D material except that after the shell and sand have been placed, the prescribed amount of caliche shall then be spread across the sand and shell.

B. The composite mixture shall then be sprinkled as required and thoroughly mixed by blading and harrowing or other approved methods.

C. Compaction of the first course of Type E material shall be the same as prescribed above for Type D material.

D. Failure to proceed with placing the sand and caliche admixture or mixing and placing operations will be grounds for the suspension of placing of shell.

E. Under no conditions will the CONTRACTOR be allowed to place an excessive amount of shell without proceeding with the mixing and placing operations.

**3.05 PLACEMENT OF SUCCEEDING COURSES - ALL MATERIAL TYPES:**

A. Construction methods shall be the same as prescribed for the first course.

B. Prior to placing the surfacing on the completed base, the base shall be "dry cured" to the extent directed by the ENGINEER.

**3.06 DENSITY CONTROL:**

A. When the "Density Control" method of compaction is indicated on the plans, each course of flexible base shall be compacted to the percent density shown on the plans.

B. The testing will be as outlined in Test Method Tex-114-E.

C. It is the intent of this specification to provide in that part of the base included in the top 8 inches immediately below the finished surface of the roadway not less than 100 percent of the density as determined by the compaction ratio method.

D. Field density determination shall be made in accordance with Test Method Tex-115-E.

**3.07 TOLERANCES:**

A. When tolerances are permitted by the plans, the limits establishing reasonable close conformity with percent density specified are defined by the following:

1. The ENGINEER may accept the work providing not more than 25 percent of the density tests performed each day are outside the specified density by no more than three pounds per cubic foot and where no two consecutive tests on continuous work are outside the specified limits.

## PART 4 - MEASUREMENT AND PAYMENT

**4.01 MEASUREMENT:**

A. Flexible base will be measure by the square yard of surface area of completed and accepted work based on the width of flexible base as shown on the plans.

1. The flexible base shall be measured for depth by the units of 2000 square yards, with one measurement taken at a location selected by the ENGINEER.
2. In that unit where flexible base is deficient by more than 1/2 inch in thickness, the deficiency shall be corrected by scarifying, adding material as required, reshaping and re-compacting by sprinkling and rolling.

3. No additional payment over the contract unit price will be made for any flexible base of a thickness exceeding that required by plans.

B. The CONTRACTOR shall schedule his operations in such a manner as to facilitate the measurement of the pay item.

C. The ENGINEER may accept the work provided no more than 2 out of 10 depth tests performed are deficient by not more 1/2 inch and where no two consecutive tests on continuous work are outside the specified depth.

**4.02 PAYMENT**:

A. The accepted quantities of flexible base of the type, grade, and compaction method specified will be paid at the contract unit bid price per square yard, complete in place.

B. Where "Ordinary Compaction" is used, all sprinkling, rolling, and manipulation required will not be paid for directly, but will be incidental to other bid items.

C. The unit prices bid shall each be full compensation for shaping and fine grading the roadbed; for securing and furnishing all materials, including all royalty and freight involved; for furnishing scales and labor involved in weighing the material when required; for loosening, blasting, excavating, screening, crushing and temporary stockpiling when required; for loading all materials for all hauling and delivering. on the road; for spreading, mixing, blading, dragging, shaping and finishing and for all manipulation, labor, tools and incidentals necessary to complete the work.

*** * * END OF SECTION * * ***

**SECTION 02610**

**PRIME COAT**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION:

A. Prime coat shall consist of application of asphaltic materials on completed base course and/or other approved area, which shall be applied in accordance with these specifications, as shown on the plans, and as directed by the ENGINEER.

### 1.02 QUALITY ASSURANCE:

A. Test and Certification of Bituminous Materials.

1. Bituminous material is to be tested in accordance with the requirements of AASHTO M-82 and sampled in conformance with AASHTO T-40.
2. Supply, at the time of delivery of each shipment of asphalt, two certified copies of test reports, from supplying vendor, to the ENGINEER.
3. Test reports shall indicate name of vendor, type and grade of asphalt delivered, date and point of delivery, quantity delivered, delivery ticket number, purchase order number, and result of specified tests.

   The test report, signed by an authorized representative of the vendor, shall certify that the product delivered conforms to the specifications for type and grade indicated.

   Certified test reports and the testing required in the preparation of such report shall be at no cost to the COUNTY.

4. Final acceptance of bituminous materials shall be dependent on the determination by the ENGINEER that the material meets prescribed standards.

## PART 2- PRODUCTS

### 2.01 MEDIUM CURING CUTBACK ASPHALT:

A. Medium-curing liquid asphalt, designated by the letters MC, shall consist of an uncracked petroleum base stock, produced by the processing of asphaltic or semi-asphaltic base crude petroleum, blended with a kerosene-type solvent. The base stock for all MC materials shall be straight run asphalt produced within the penetration range of 100 to 300, and the end point of the kerosene type solvent shall not exceed 525 degrees F. Medium curing liquid cutback asphalt shall be free from water and show no separation.

B. Medium curing cutback asphalt shall consist of materials specified above and

conforming to the requirements set forth in Table 2610-1.

C. Unless otherwise noted on the plans or directed by the ENGINEER, cutback asphalt Grade MC-30 shall be used.

## 2.02 BLOTTER MATERIAL:

A. Supply blotter material consisting of native sand and/or sweepings from base course.

B. Native sand shall be local material obtained from approved sources as approved by the ENGINEER.

# PART 3 - EXECUTION

## 3.01 CONSTRUCTION METHODS:

A. Unless otherwise specified on the plans or, required by the ENGINEER, only asphaltic material shall be used. Where required, a combination of asphaltic and blotter material shall be used.

B. Application of Asphaltic Materials Only.

1. Apply prime coat to prepared surface when ambient air temperature is above 40 degrees F. and is rising and shall not be applied when the ambient air temperature is below 50 degrees F. and falling.
2. Apply prime coat to surfaces that have been cleaned by sweeping or other approved methods and where base is thoroughly dry and satisfactory for receiving prime coat.
3. Apply prime coat to cleaned base, at a rate of 0.2 to 0.5 gallons per square yard of surface area, using an approved type of self-propelled pressure distributor so constructed and operated to distribute the material evenly and smoothly.
4. Provide necessary facilities for the determination of temperature of asphaltic material in all heating equipment and distributors; and for determination of rate at which it is applied; and for securing uniformity at the junction of two distributor loads.
5. Keep in clean and good working condition all storage tanks, piping, reports, booster tanks and distributors used in the storage and handling of asphaltic materials.
6. Operate all associated equipment in a manner such that there is no contamination of asphaltic material with foreign material.
7. Calibrate distributor and furnish ENGINEER with an accurate and satisfactory record of such calibrations.

**TABLE 2610-1**

| Specification Designation | Test | AASHTO Test Method | ASTM MC Method | Grade MC 30 | MC 70 | MC 250 | MC 800 | MC 3000 |
|---|---|---|---|---|---|---|---|---|
| Flash Point (Open Cleve) oF, Min. | | T 48 | D 92 | 100 | 100 | 150 | 150 | 150 |
| Viscosity 140oF, Kinematic, CS | | T 201 | D 2170 60 | 30 to 140 | 70 to 500 | 250 to 1600 | 800 to 6000 | 3000 to |
| Furol Viscosity at 77 F. (Secs.) | | T 72 | D 88 | 75-150 | | | | |
| at 122 F. (Secs.) | | | | 60-120 | 300 | | | |
| at 140 F. (Secs.) | | | | 125-250 | to | | | |
| at 180 F. (Secs.) | | | | 100-200 | 600 | | | |
| Distillation Distillate (% of Total Distillate to 680 F) | | T 78 | D 402 | | | | | |
| to 437 F) | | | | 0-25 | 0-20 | 0-10 | -0- | -0- |
| to 500 F | | | | 40-70 | 25-60 | 20-55 | 10-35 | 0-15 |
| to 600 F | | | | 75-93 | 75-90 | 70-85 | 65-80 | 50-75 |
| Residue from Distillation to 680 F Volume % by Difference Min. | | | | 50 | 55 | 67 | 75 | 80 |
| Tests on Residue From Distillation Penetration at 77 F | | T 49 | D 5 | 120 to 250 | 120 to 250 | 120 to 250 | 120 to 250 | 120 to 250 |
| *Ductility 77 F cm., Min. | | T 51 | D 113 | 100 | 100 | 100 | 100 | 100 |
| Solubility in CC1 4, % Min. | | T44 | NONE | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Water, % Min. | T 55 | D 95 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Reaction to Spot Test | T 102** | -0- | | -0- | -0- | -0- | -0- |

* If penetration of residue is more than 200 and its ductility at 77 F is less than 100, the material will be acceptable if the ductility at 60 F is greater than 100.

** Using 85% Standard Naphtha and 15% Xylene.

NOTE: Viscosity tests may be made by either Kinematic or Furol test methods.

8. Recalibrates distributor, in a manner satisfactory to the ENGINEER, after the beginning of work, should the yield on the asphaltic material applied appear to be in error.
9. No traffic, hauling or placing of subsequent courses shall be permitted over freshly applied prime coat until authorized by the ENGINEER.
10. Apply asphaltic material at a temperature within 15 F of temperature of application selected by the ENGINEER based on temperature viscosity relationship noted in Table 2610-1.
11. Maintain surface until work is Blotter Material.

C. Application of Asphaltic and Blotter Material

1. Haul blotter material in vehicles of uniform capacity and placed on shoulders at spacings designated by the ENGINEER.
2. After application of asphaltic material as specified above, cover surface with blotter material as directed by the ENGINEER.
3. After application of blotter material, drag surface with approved drag broom, evenly and smoothly distributing the blotter material.
   Brooming or dragging operation shall continue, as directed by the ENGINEER, until the course has properly cured under traffic.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 PRIME COAT:

A. Asphaltic material for prime coat will be measured for payment at point of delivery on the project in gallons at applied temperature. Payment will be paid at the unit bid price for "Prime Coat".

B. When not listed as a separate contract pay item, prime coat shall be considered as incidental work, and the cost thereof shall be included in such contract pay item(s) as are provided in the proposal contract.

C. Compensation, whether by contract pay item or incidental work will be for furnishing all material, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

## 4.02 BLOTTER MATERIALS:

A. Blotter mater will be considered incidental to asphaltic material for prime coat with no direct payment or payment therefor.

*** * * * END OF SECTION * * * ***

# SECTION 02612

## HOT MIX ASPHALT CONCRETE PAVEMENT

## PART 1 - GENERAL

### 1.01 DESCRIPTION:

A. Hot mix asphalt concrete (HMAC) pavement shall consist of a binder course, a leveling up course, a surface course or a combination of the courses as shown on the plans, or as directed by the ENGINEER.

B. HMAC pavement shall be composed of a compacted mixture of mineral aggregate and asphaltic material, constructed on previously completed and approved sub-grade, sub-base course, base course, or existing pavement.

C. HMAC pavement shall be in accordance with the specifications herein and in conformity with the lines, grades, quantities and typical sections in the contract and/or as directed by the ENGINEER.

### 1.02 QUALITY CONTROL:

A. HMAC pavement and its constituent part shall conform to the ASTM, AASHTO and/or Texas SDHPT test methods noted below.

## PART 2 PRODUCTS

### 2.01 ASPHALTIC MATERIALS

A. Asphalt cement binders shall be un-cracked petroleum asphalt and shall be carefully refined, by steam, vacuum, or solvent, from asphaltic or semi-asphaltic base crude petroleum at a temperature not to exceed 700 degrees F. Asphalt cements shall be free from thermal decomposition products and shall not be blended with any materials which have been subjected to cracking or produced from a crude petroleum source other than that of the original material. The asphalt cement shall not contain residues from non-asphaltic sources. Asphalt cement shall be homogeneous, free from water, and shall not foam when heated to 347 degrees F.

B. Paving asphalt shall be classified by penetration or viscosity and shall conform to the requirements set forth in one of the following tables as designated by the ENGINEER. The CONTRACTOR may supply asphalt meeting the requirements of one of the following tables provided that he obtains prior approval of the ENGINEER and with the provision that once approval has been obtained, that the CONTRACTOR will remain with that grade throughout the project.

**TABLE 02612-1**

| Specification Designation | AASHTO Test Method | ASTM Test Method | 40 to 50 | 60 to 70 | 85 to 100 | 120 to 150 | 150 to 200 | 200 to 250 |
|---|---|---|---|---|---|---|---|---|
| Flash Point (Open Cup Min.) | T48 | D92 | | 450 | 450 | 450 | 425 | 350 |
| Penetration of Original Sample at 77 F | T49 | D5 | 40 to 50 | 60 to 70 | 85 to 100 | 120 to 150 | 150 to 200 | 200 to 250 |
| Thin-Film Oven Loss Hours at 325 F, % Max | T179 | D1754 | 0.75 | 0.75 | 0.75 | 0.75 | 1.00 | 1.00 |
| Test of Residue from Thin-Film Oven Test % or Orig. Pen., Min. | T49 | D5 | 52 | 50 | 50 | 50 | 50 | 50 |
| Ductility at 77 F, cm. after Loss at 325 F, Min. | T51 | D113 | 50 | 50 | 100 | 100 | 100 | 100 |
| Solubility in CC1 4 Min. | T44* | None | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 |
| Reaction to Spot Test | T102** | None | -0- | -0- | -0- | -0- | -0- | -0- |

* Procedure No. 1 with CC1 4 substituted for CS2.

** Using 85% Standard Naphtha Solvent and 15% xylene,

**TABLE 02612-2**

| | OA-30 | | OA-175*8 | | OA-400 | |
|---|---|---|---|---|---|---|
| **TYPE-GRADE** | **MIN.** | **MAX.** | **MIN.** | **MAX.** | **MIN.** | **MAX.** |
| Penetration at 32 F, 200g., 60 sec. | 15 | -- | -- | -- | -- | -- |
| **Penetration at 77 F, 100g., 5 sec.** | 25 | 35 | 150 | 200 | -- | -- |
| Penetration at 115 F, 50g., 5 sec. | -- | 65 | -- | -- | -- | -- |
| Ductility at 77 F, 5 Original OA | 2 | -- | 70 | -- | -- | -- |
| Flash Point C.O.C., F | 450 | -- | 425 | -- | 425 | -- |
| Softening Point, R. & B., F | 185 | -- | 95 | 130 | -- | -- |
| Thin Film Oven Test, 1/8 in. Film 50g., 5 hrs., 325 F, % Loss by Wt. | -- | 0.4 | -- | 1.4 | -- | 2.0 |
| Penetration of Residue, at 77 F, 100g., 5 sec. % of Original Pen | -- | -- | 40 | -- | -- | -- |
| Ductility of Residue at 77 F, 5 cm/min., cms | -- | -- | -- | 100 | -- | -- |
| Solubility in Trichloroethylene, % | 99.0 | --- | 99.0 | --- | 99.0 | --- |
| Spot Test on Original OA | **Neg.** | | **Neg.** | | **Neg.** | |
| Float Test at 122 F, sec. | -- | -- | -- | -- | 120 | 150 |
| Test on 85 to 115 Pen. Residue* Residue by Wt., % | -- | -- | -- | -- | -- | 75 |
| Ductility, 77 F, 5 cm/min.: Original Res., cms. | -- | -- | -- | -- | 100 | --- |
| Subjected to Thin Film Test, cms | -- | -- | -- | -- | 100 | -- |

* Determined by Vacuum Distillation (by evaporation if unable to reduce by vacuum).

* * For use with Latex Additive only

**TABLE 02612-3**

| PROPERTIES | AC-1.5 | | AC-3 | | AC-5 | | AC-10 | | AC-20 | | AC-20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| Viscosity, 140 F stokes... | 150 | 50 | 300 | 100 | 500 | 100 | 1000 | 200 | 2000 | 400 | 4000 | 800 |
| Viscosity, 275 F stokes..... | 0.7 | -- | 1.1 | -- | 1.4 | -- | 1.9 | -- | 2.5 | -- | 3.5 | -- |
| Penetration, 77 F 100 g, 5 sec | 250 | -- | 210 | -- | 135 | -- | 85 | -- | 55 | -- | 35 | -- |
| Flash Point, C.O.C., F... | 425 | -- | 425 | -- | 425 | -- | 450 | -- | 450 | -- | 450 | -- |
| Solubility in trichloroethylene percent..... | 99.0 | -- | 99.0 | -- | 99.0 | -- | 99.0 | -- | 99.0 | -- | 99.0 | -- |
| **Test on residues from thin film oven test:** | | | | | | | | | | | | |
| Viscosity, 140 F stokes..... | -- | 450 | -- | 900 | 1500 | -- | 3000 | -- | 6000 | -- | -- | 12000 |
| Ductility, 77 F, 5 cms per min, cms | 100 | -- | 100 | -- | 100 | -- | 70 | -- | 50 | -- | 30 | -- |
| Spot Test.. . . . | Negative for all grades | | | | | | | | | | | |

C. A minimum of two percent, by weight, latex additive (solid basis) shall be added to the OA-175 Asphalt or to AC-5 Asphalt when specified in the contract. The latex additive shall be governed by the following specifications:

The latex is to be an anionic emulsion of butadiene-styrene low-temperature copolymer in water, stabilized with fatty-acid soap so as to have good storage stability, and possessing the following properties:

Monomer ration, B/S ..... 70/30
Minimum solids content ..... 67%

Solids content per gal. @ 67% ..... 5.3 lbs.
Coagulum on 80-mesh screen ..... 0.01% max.
Type Anti-oxidant ..... staining
Mooney viscosity of Polymer(M/L 4@212F) 100 min.

PH of Latex ..... 9.4 - 10.5
Surface tension ..... 28 - 42 dynes/cm2

The finished latex-asphalt blend shall met the following requirements:

Viscosity at 140 F, stokes..... 1500 max.
Ductility at 39.2 F. 1 cm. per., cm..... 100 min.

D. Asphalt content shall be within the limits noted below:

| HMAC Type | Percent of Mixture by Weight | Percent of Mixture by Volume |
|---|---|---|
| "A" | 3.5 - 7.0 | 8.0 - 16.0 |
| "B" | 3.5 - 7.0 | 8.0 - 16.0 |
| "C" | 3.5 - 7.0 | 8.0 - 16.0 |
| "D" | 4.0 - 8.0 | 9.0 - 19.0 |
| "F" | 3.5 - 6.5 | 8.0 - 16.0 |

E. At the time of delivery of each shipment of asphalt, the vendor supplying the material shall deliver to the purchaser certified copies of the test report which shall indicate the name of the vendor, type and grade of asphalt delivered, date and point of delivery, quantity delivered, delivery ticket number, and results of the above-specified tests. The test report shall be certified and signed by an authorized representative of the vendor that the product delivered conforms to the specifications for the type and grade indicated.

F. Until the certified test reports and samples of the material have been checked by the ENGINEER to determine their conformity with the prescribed requirements, the material to which such report relates an any work in which it may have been incorporated as an integral component will be only tentatively accepted by the COUNTY. Final acceptance will be dependent upon the determination of the ENGINEER that the material involved fulfills the requirements prescribed therefor. The certified test reports and the testing required in connection with the reports will be at the expense to the COUNTY.

G. Unless otherwise specified in these specifications or in the Supplementary Specifications, the various grades of paving asphalt shall be applied at a temperature range of from 210 F, the exact temperature to be determined by the ENGINEER.

H. Paving asphalt shall be heated in such a manner that steam or hot oils will not be introduced directly into the paving asphalt during heating. The CONTRACTOR shall furnish and keep on the site, at all times, an accurate thermometer suitable for determining the temperature of the paving asphalt.

I. HMAC asphalt shall be the grade having the highest penetration, within specified

limits, to produce a mix having a maximum stability of the compacted mixtures.

J. Only one (1) grade of asphalt shall be required unless otherwise shown on the plans or as required by the ENGINEER.

**2.02 AGGREGATES:**

A. HMAC aggregate will be tested in accordance with the following test:

| | |
|---|---|
| AASHTO T-30 | Mechanic Testing |
| AASHTO T-27 | Passing No. 200 Sieve |
| AASHTO T-89 | Liquid Limit |
| AASHTO T-96 | Los Angeles Abrasion |
| AASHTO T-104 | Soundness ( Magnesium Sulfate) |
| ASTM C - 131 | Resistance to Degradation |
| ASTM C - 136 | Sieve Analysis |
| ASTM C -2419 | Sand Equivalence Value |
| SDHPT Tex - 416 - E | Method of Calculating Plasticity Index of Solids |
| SDHPT Tex - 217 - F | (I & II) Determination of Deleterious Materials and Decantation Test |
| SDHPT Tex - 203 - F | Quality Test for Mineral Aggregates |

B. Aggregates shall have an abrasion of not more than 40 for all course except the non-skid surface course, which shall have an abrasion of not more than 35.

C. When property proportioned, HMAC aggregate shall produce a gradation which will conform to the limitations for classification for HMAC type shown below, or as directed by the ENGINEER.

D. Course aggregate to be crushed limestone rock or crushed gravel with hydrated lime or limestone filler. (Crushed gravel shall be per Highway Department Specifications.)

E. Binder aggregate to be composed of 15% crushed limestone screening or as directed by the ENGINEER.

**1. Type "A" - Course Graded Base Course**

Percent Aggregate by

Weight or Volume

| | |
|---|---|
| Passing 2" sieve | 100 |
| Passing 1-3/4" sieve | 95 to 100 |
| Passing 1-3/4" sieve, retained on 7/8" sieve | 16 to 42 |
| Passing 7/8" sieve, retained on 3/8" sieve | 16 to 42 |
| Passing 3/8" sieve, retained on No. 4 sieve | 10 to 26 |
| Passing No. 40 sieve, retained on No. 10 sieve | 5 to 21 |
| Total retained on No. 10 sieve | 68 to 84 |
| Passing No. 10 sieve, retained on No. 40 sieve | 5 to 21 |
| Passing No. 40 sieve, retained on No. 80 sieve | 3 to 16 |
| Passing No. 80 sieve, retained on No. 200 sieve | 2 to 16 |
| Passing No. 200 sieve | 1 to 8 |

**2. Type "B" - Fine Graded or Leveling-Up Course**

Percent Aggregate by
Weight or Volume

| | |
|---|---|
| Passing 1" sieve | 100 |
| Passing 7/8" sieve | 95 to 100 |
| Passing 7/8" sieve | 21 to 53 |
| Passing 3/8" sieve, retained on 3/8" sieve | 11 to 42 |
| Passing No. 4 sieve, retained on NO. 10 sieve | 5 to 26 |
| Total retained on No. 10 sieve | 58 to 74 |
| Passing No. 10 sieve, retained on No. 40 sieve | 6 to 32 |
| Passing No. 40 sieve, retained on NO. 80 sieve | 4 to 21 |
| Passing No. 80 sieve, retained on No. 200 sieve | 3 to 21 |
| Passing No. 200 sieve | 1 to 8 |

**3. Type "C" - Course Graded Surface Course**

Percent Aggregate by
Weight or Volume

| | |
|---|---|
| Passing 7/8" sieve | 100 |
| Passing 5/8" sieve, retained on 3/8" sieve | 95 to 100 |
| Passing 3/8" sieve, retained on No. 4 sieve | 11 to 37 |
| Passing No. 4 sieve, retained on No. 10 sieve | 11 to 32 |
| Total retained on No.10 sieve | 54 to 74 |
| Passing No. 10 sieve, retained on No. 40 sieve | 6 to 32 |
| Passing No. 40 sieve, retained on No. 80 sieve | 4 to 27 |
| Passing No. 80 sieve, retained on No. 200 sieve | 3 to 27 |
| Passing No. 200 sieve | 1 to 8 |

**4. Type "D" - Fine Graded Surface Course**

| | Percent Aggregate by Weight or Volume |
|---|---|
| Passing 1/2" sieve | to 100 |
| Passing 3/8" sieve | 85 to 100 |
| Passing 3/8" sieve, retained on No. 4 sieve | 21 to 53 |
| Passing No. 4 sieve, retained on No. 10 sieve | 11 to 32 |
| Total retained on No. 10 sieve | 54 to 74 |
| Passing No. 10 sieve, retained on No. 40 sieve | 6 to 32 |
| Passing No. 40 sieve, retained on No. 80 sieve | 4 to 27 |
| Passing No. 80 sieve, retained on No. 200 sieve | 3 to 27 |
| Passing No. 200 sieve | 1 to 8 |

**5. Type "F" - Fine Graded Surface Course**

| | Percent Aggregate by Weight or Volume |
|---|---|
| Passing 3/8" sieve | 100 |
| Passing No. 4 sieve | 95 to 100 |
| Passing No. 4 sieve, retained on No.10 sieve | 58 to 73 |
| Passing No. 10 sieve, retained on No. 40 sieve | 6 to 26 |
| Passing No. 40 sieve, retained on No. 80 sieve | 3 to 13 |
| Passing No. 80 sieve, retained on No. 200 sieve | 2 to 11 |
| Passing No. 200 sieve | 1 to 8 |

**2.03 PRIME COAT:**

A. Prime coat, when specified on the plans, or as directed by the ENGINEER, shall be in accordance with Section 02610 - Prime Coat, and as specified herein.

B. Prime coat shall be applied to surfaces of bases at least 12 hours prior to placing the HMAC unless otherwise directed by the ENGINEER.

C. Asphalt prime shall be applied uniformly at the rate of 0.10 to 0.30 gallon per square yard or as directed by the ENGINEER. It shall be applied only when permitted by the ENGINEER and when the air temperature is not less than 40 F.

D. In order to prevent lapping at the junction of two applications, the distributor shall be promptly shut off. A hand spray shall be used to touch up all spots unavoidably missed by the distributor.

E. Immediately prior to application of the asphalt prime, an inspection will be made by the ENGINEER to verify that the base course has been constructed as specified. Also, all loose and foreign material shall be removed by light sweeping. Material so removed shall not be mixed with cover aggregate.

F. The surface to be primed shall be in a smooth an well-compacted condition, true to grade and cross section, and free from ruts and inequalities.

G. The pressure distributor used for applying prime coat material shall be equipped with pneumatic tires and shall be so designed and operated as to distribute the prime material in a uniform spray without atomization, in the amount an between the limits of temperature specified. It shall be equipped with a speed tachometer registering feet per minute and so located as to be visible to the truck driver to enable him to maintain the constant speed required for application at the specified rate.

H. The pressure distributor shall be equipped with a tachometer registering the pump speed, pressure gauge, and a volume gauge. The rates of application shall not vary from the rates specified by the ENGINEER by more than 10%. Suitable means for accuracy indicating at all times the temperature of the prime material shall be provided. The thermometer well shall be so placed as not to be in contact with a heating tube.

I. The distributor shall be so designed that the normal width of application shall not be less than 6 feet, with provisions for the application of lesser width when necessary. If provided with heating attachments, the distributor shall be so equipped and operated that the prime material shall be circulated or agitated through the entire heating process.

J. The asphalt prime coat should preferably be entirely absorbed by the base course and, therefore, require no sand cover. If, however, it has not been completely absorbed prior to the start of placing the asphalt concrete mixture and in the meantime it is necessary to permit traffic thereon, just sufficient sand shall be spread over the surface to blot up the excess liquid asphalt and prevent picking it up under traffic. Also, sand shall be used in areas where traffic may pass over the prime coat. Prior to placing the asphalt concrete, loose or excess sand shall be swept from the base. If a sand cover is specified in the Supplementary Specifications or noted on the plans to cover asphalt prime, it shall be applied within 4 hours after the application of said prime coat, unless otherwise ordered by the ENGINEER.

K. Liquid asphalt shall be prevented from spraying upon adjacent pavements, structures, guard rails, guide posts, culvert markers, trees, and shrubbery that are not to be removed; adjacent property and improvements; and other facilities or that portion of the traveled way being used by traffic.

L. The CONTRACTOR shall protect the prime coat against all damage and markings, both from and other traffic. Barricades shall be places where necessary to protect the prime coat. If, after prime coat has been applied satisfaction of the ENGINEER and has been accepted by him, it is distributed by negligence on the part of the CONTRACTOR, it shall be restored at his expense to its condition at the time of acceptance. No material shall be placed until the prime coat is in a condition satisfactory to the ENGINEER.

## 2.04 TACK COAT:

A. If the asphalt concrete pavement is being constructed directly upon an existing hard-surfaces pavement, a tack coat shall be evenly and uniformly applied to such existing pavement preceding the placing of the asphalt concrete. The surface shall be free of water, all foreign material, or dust when the tack coat is applied. No greater area shall be treated in any one day than will be covered by the asphalt concrete during the same day. Traffic will not be permitted over tack coating.

B. Tack coat for HMAC shall consist of either rapid curing cut-back asphalt RC-2 diluted by addition of (not to exceed 15 percent by volume) an approved grade of gasoline and/or kerosene; emulsified asphalt, EA-11M diluted with 50 percent water, or a cut-back asphalt made by combining 50 to 70 percent of the asphaltic materials specified for the paving mixture with 30 to 50 percent gasoline and/or kerosene by volume.

C. Tack coat shall conform to the requirements of Section 02620 - Tack Coat, or as specified herein.

D. Application rate shall be 0.10 it 0.15 gallons per square yard as directed by the ENGINEER.

E. A similar tack coat shall be applied to the surface of any course if, in the opinion of the ENGINEER, the surface is such that a satisfactory bond cannot be obtained between it and the succeeding course.

F. When required, the contact surfaces of all cold pavement joints, curbs, gutters, manholes, and the like shall be painted with a tack coat immediately before the adjoining asphalt concrete is placed. Asphalt tack coat shall be applied in controlled amounts as shown on the plans or determined by the ENGINEER. Surfaces where a tack coat is required shall be cleaned to the satisfaction of the ENGINEER before the tack coat is applied.

## 2.05 MINERAL FILLER:

A. Mineral filler, other than hydrated lime, shall consist of a thoroughly dry stone dust, portland cement or other mineral dust approved by the ENGINEER.

B. The mineral filler shall be free from foreign or other deleterious matter.

C. When tested by the method outlines in SDHPT Test Method Tex-200-F (Part 1 or 3), mineral filler shall meet the following gradations by weight:

| | |
|---|---|
| Passing No. 30 Sieve | 95 to 100% |
| Passing No. 80 Sieve | 75% |
| Passing No. 200 Sieve | 55% |

## 2.06 Anti-Stripping compound, as required in the job mix formula, shall be furnished in the amounts calculated therein.

## 2.07 JOB MIX FORMULA:

A. A job mix formula based on representative samples, including filler if required, shall be determines by the ENGINEER, or submitted by the CONTRACTOR for approval of the ENGINEER.

B. The resultant job mix formula shall be within the master range for the specified type of HMAC.

C. The job mix formula for each mixture shall established a single percentage of aggregate passing each required sieve size, and a single percentage of bituminous material to be added to the aggregate and shall provide for 3 to 5% air voids in the resultant design mix. During the mix design process the ENGINEER will consider other factors, in addition to air voids and Marshall stability, such as durability, water resistance and asphalt film thickness when developing the mix design.

D. After the job mix formula is established, mixtures for the project shall conform thereto within the following tolerances which may fall outside of the specified master range:

Passing 1-3/4" sieve, retained on 7/8" sieve ..... Plus or minus 5
Passing 7/8" sieve, retained on 3/8" sieve ..... Plus or minus 5
Passing 5/8" sieve, retained on 3/8" sieve ..... Plus or minus 5
Passing 3/8" sieve, retained on No. 4 sieve ..... Plus or minus 5
Passing No. 4 sieve, retained on No. 10 sieve ..... Plus or minus 5
Total retained on No. 10 sieve ..... Plus or minus 5
Passing No. 10 sieve, retained on No. 40 sieve ..... Plus or minus 3
Passing No. 40 sieve, retained on No. 80 sieve ..... Plus or minus 3
Passing No. 80 sieve, retained on No. 200 sieve ..... Plus or minus 3
Passing No. 200 sieve ..... Plus or minus 3

Asphaltic Material ..... Plus or minus 0.05 by weight or 1.2 by volume

Mixing Temperature ..... Plus or minus 20 F

E. Asphaltic mixture shall be tested in accordance with SDHPT Test Method Tex-200-4 (Part I or Part III) and shall have the following laboratory values:

| | **Surface Course** | **Base Course** |
|---|---|---|
| Density - Minimum | 95% | 95% |
| Maximum | 99% | 99% |
| Optimum | 97% | 97% |

| | | |
|---|---|---|
| Stability - (Hveenm) | | |
| Minimum | 30% | 30% |
| Maximum | 45% | 45% |
| Stability (Marshall - 75 Blow Briquette) | 1500 lbs. | 1500 - lbs. |
| Voids | 3 - 7% | 4 - 7% |
| Voids Filled With Asphalt | 75 - 85% | 65 - 80% |
| Sand Equivalent | 40 | 40 |

**2.08 EQUIPMENT:**

A. All equipment for the handling of all material, mixing, and placing of HMAC shall be in accordance with the provisions of Texas SDHPT Item 340.

**2.09 STOCKPILING, STORAGE, PROPORTIONING AND MIXING:**

A. Stockpiling, storage proportioning and mixing operations shall be in accordance with the Provisions of Texas SDHPT Item 340.

## PART 3 - EXECUTION

**3.01 WEATHER AND TEMPERATURE LIMITATIONS:**

A. Asphaltic mixture, when placed with a spreading and finishing machine, or the tack coat shall not be placed when the air temperature is 50 F and falling, but may be placed when the air temperature is 40 F and rising.

B. Asphaltic mixture, when placed with a motor grader, shall not be placed when the air temperature is 60 F and falling, but may be placed when the air temperature is 50 F and rising.

C. Mat thicknesses of 1> inches or less shall not be placed when the temperature on which the mat is to be laid is below 50 F.

D. No tack coat or asphaltic mixture shall be placed when the humidity, general weather conditions and temperature and moisture condition of the base, in the opinion of the ENGINEER, are unsuitable.

E. If, after being discharged from the mixer and prior to placing, the temperature of the asphaltic mixture is 50 F or more below the temperature established by the ENGINEER, all or any part of the load may be rejected and payment will not be made for the rejected material.

## 3.02 EQUIPMENT

A. Hauling Equipment:

1. Trucks used for hauling asphaltic mixtures shall have tight, clean, smooth metal beds which have been thinly coated with a minimal amount of paraffin oil, lime slurry, time solution or other approved material to prevent mixture adhesion to the bed.
2. The dispatching of hauling equipment shall be arranged so that all material delivered may be placed and all rolling completed during daylight hours, unless otherwise directed by the ENGINEER.
3. All trucks shall be equipped with a cover of canvas, or other suitable material to protect the mixture from weather or on hauls where the temperature of the mixture will fall below specified level. Use of covers will be as directed by the ENGINEER.

B. Rollers:

1. Pneumatic Tile Roller. This roller shall consist of not less than seven pneumatic tire wheels, running on axles in such manner that the rear group of tires shall cover the entire gap between adjacent tires of the forward group; mounted in a rigid frame; and provided with a loading platform or body suitable for ballast loading. The front axle shall be attached to the frame in such manner that the roller may be turned within a minimum circle. The tire shall afford surface contact pressures up to 90 pounds per square inch or more. The roller shall be so constructed as to operate in both a forward and a reverse direction with suitable provisions for moistening the surface of the tires while suitable provisions for moistening the surface of the tires while operating; and shall be approved by the ENGINEER.
2. Two Axle Tandem Roller. This roller shall be acceptable power-driver, steel-wheel, tandem roller weighing not less than eight tons. It must operate in forward and reverse directions; contain provision for moistening the surface of the wheels while in motion; and shall be approved by the ENGINEER.
3. Three Wheel Roller. This roller shall be an acceptable power-driven, all steel three wheel roller weighing not less than 10 tons. It must operate in forward and reverse directions; contain provisions for moistening the surface of the wheel while in motion; and shall be approved by the ENGINEER.
4. Vibratory Steel Wheel Roller. If approved for use by the OWNER, this roller shall have a minimum weight of six tons. The compactor shall be equipped with amplitude and frequency controls and shall be specifically designed to compact the material on which it is used. It shall be operated in accordance with the manufacturer's recommendations.

C. Straight Edges:

1. The CONTRACTOR shall provide an acceptable 16-foot straight-edges for surface testing. Satisfactory templates shall be provided as required by the ENGINEER.

D. Spreading and Finishing Machine:

1. Bituminous pavers shall be self-contained, power-propelled units, provided with an activated screed or a strike-off assembly, heated if necessary, and capable of spreading and finishing courses of bituminous plant mix material in lane widths applicable to the specified typical section and thickness shown on the plans.
2. The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in from of the screed. Design will be such that no part of the truck weight will be supported by the paver.
3. The screed or strike-off assembly shall effectively produce a finished surface of the required evenness and texture without tearing, shoving or gouging the mixture. When laying mixtures, the paver shall be capable of being operated at forward speeds consistent with satisfactory laying of the mixture. The screed shall be adjustable for both height and crown and shall be equipped with a controlled heating device.
4. The bituminous paver shall be equipped with an automatic leveling device controlled from an external guide. The initial pass for each course shall be made using a paver equipped with a 40-foot minimum external reference, except that this requirements will not apply when asphalt concrete is placed adjacent to portland cement concrete pavement. Subsequent passes may utilize the matching device of one foot minimum length riding on the adjacent lay.

## 3.03 CONSTRUCTION METHODS:

A. Spreading and Finishing:

1. The asphalt concrete mixture shall be laid on the approved surface, spread and struck off to the grade and elevation established. It shall be spread and compacted in layers as shown on the plans or as directed by the ENGINEER. Bituminous pavers shall be used to distribute the mixture either over the entire width or over such partial width as may be practicable.
2. The ENGINEER will determine a minimum placement temperature, which is measured immediately behind the laydown machine, shall not vary more than 20 F.
3. A conventional paver or suitable equipment approved by the ENGINEER may be used to place asphalt concrete material on shoulders depressed from the traveled lanes in order to established a uniform typical section. Approval of the equipment used will be based upon the results obtained.

4. The asphalt concrete may be dumped from the hauling vehicles directly into the paving machine or it may be dumped upon the surface being paved and subsequently loaded into the paving surface being paved and subsequently loaded into the paving machine; however, no asphaltic concrete shall be dumped from the hauling vehicles at a distance greater than 250 feet in

front of the paving machine. When asphaltic concrete is dumped first upon the surface being paved, the loading equipment shall be self-supporting and shall not exert any vertical load on the paving machine. Substantially all of the asphaltic concrete dumped shall be picked up and loaded into the paving machine.

5. To achieve, as far as practicable, a continuous operation, the speed of the paving machine shall be coordinated with the production of the plant. Sufficient hauling equipment shall be available to insure continuous operation.
6. The control system shall control the elevation of the screed at each end by controlling the elevation of one end directly and the other indirectly either through controlling the transverse slope or alternately when directed, by controlling the elevation of each end independently, including any screed attachment used for widening, etc. Failure of the control system to function properly shall be cause for the suspension of the asphaltic concrete operations.
7. When dumping directly into the paving machine from trucks, care shall be taken to avoid jarring the machine or moving it out of alignment.
8. All courses of asphaltic concrete shall be placed and finished by means of self-propelled paving machines except under certain conditions or at certain locations where the ENGINEER deems the use of self-propelled paving machines impracticable.
9. Self-propelled paving machines shall spread the asphaltic concrete without segregation or tearing within the specified tolerances, true to the line, grade, and crown indicated on the plans. Pavers shall be equipped with hoppers and augers which will place the asphaltic concrete evenly in front of adjustable screeds without segregation. Screeds shall include any strike-off device operated by tamping or vibrating action which is effective without tearing, shoving or gouging the asphaltic concrete and which produces a finished surface of an even and uniform texture for the full width being paved. Screeds shall be adjustable as to height and crown and shall be equipped with a controlled heating device for use when required.
10. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impracticable, the mixture shall be spread, raked, fluted and compacted with hand tools. For such areas the mixture shall be dumped, spread and screed to give the required compacted thickness.

B. Compaction:

1. Rolling with the 3-wheel and tandem roller shall start longtitudally at the sides and proceed toward the center of the surface course, overlapping on successive trips by at least half the width of the rear wheels.

2. Alternate trips of the roller shall be slightly different in length.
3. Rolling with a pneumatic tired roller shall be as directed by the ENGINEER.
4. Rolling shall continue with no further compression can be obtained and all roller marks are eliminated
5. The motion of the roller shall be slow enough at all times to avoid displacement of asphaltic materials. If displacement occurs, it shall be

corrected immediately by use of rakes and fresh asphaltic mixtures, where required.

6. The roller shall not be allowed to stand on the surface course when it has not been fully compacted and allowed to cool.
7. To prevent adhesion of the surface course to the roller, the wheels shall be kept thoroughly moistened with water; however, excess water shall not be allowed.
8. All precautions shall be taken to prevent dripping of gasoline, oil, grease, or other foreign substances on the surface or base courses during rolling operations or while rollers are standing.
9. With the approval of the ENGINEER, a vibratory steel wheeled roller may be substituted for the 3-wheel roller and tandem roller.
10. Along forms, curbs, headers, walls and other places not accessible to the rollers, the mixture shall be thoroughly compacted with hot hand tampers, smoothing irons, or with mechanical tampers. On depressed areas, a trench roller may be used or cleated compression strips may be used under the roller to transmit compression to the depressed area.
11. Any mixture that becomes loose, broken, mixed with dirt, segregated, or is in any way defective shall be removed and replaced with fresh hot bituminous mixture, which shall be compacted to conform with the surrounding area. Any area showing excess or deficiency of bituminous material shall be corrected immediately as directed by the ENGINEER.

C. In-Place Density:

1. In-place density shall be required for all mixtures except thin irregular depth leveling courses.
2. Each course, after final compaction, shall have a density of not less than 95 percent of the density developed in the laboratory test method outlines in Texas SDHPT Bulletin C-14.
3. Density shall be determined with a portable nuclear test device in conformity with ASTM D-2950.76.
4. Calibration of the portable nuclear device will be established by the ENGINEER from cut pavement samples tested in accordance with AASHTO T-166 (weight, volume method). The density readings of the cut pavement samples determined in accordance with AASHTO T-166 (weight, volume method), and the density readings of the pavement samples determined by the portable nuclear test device in conformity with ASTM D 2950 will be correlated by the ENGINEER.
5. Other methods of determining in-place density may be used as deemed necessary by the ENGINEER.
6. It is intended that acceptance density testing will be done while the bituminous mixture is hot enough to permit further compaction if necessary. If the density of an acceptance section does not meet the specified requirements, the CONTRACTOR shall continue the compaction effort until the optimum density is obtained, but rolling for any compactive effort will not be allowed when the temperature of the mix is below 175 F unless authorized in writing by the ENGINEER. Rerolling the paved surface after it has initially cooled will not be allowed.

7. If in-place density tests of the mixture produce a value lower than specified and in the opinion of the ENGINEER is not due to a change in the quality of the material, production may proceed with subsequent changes in the mix and/or construction procedures until in-place density equals or exceeds the specified density.
8. In-place density tests will be provided by the ENGINEER unless otherwise specified.

D. Joints:

1. Placing of the asphalt concrete shall be as continuous as possible. Rollers shall not pass over the unprotected end of a freshly laid mixture unless authorized by the ENGINEER.
2. When plant mix bituminous pavement is places over plant mix bituminous treated base or when plant mixed seal coat is places over plant mix bituminous pavement, longitudinal joints shall be staggered at least 6 inches with relation to the longitudinal joints of the underlying course.
3. Transverse joints shall have two foot or 12:1 minimum taper. Longitudinal joints shall have a one foot or 6:1 minimum taper. All transverse tapers shall be cut and squared off prior to commencing new work. Tapered longitudinal joints from previous operations shall be cleaned and tack coated if directed by the ENGINEER. All joints shall be completely bonded. The surface of each course at all joints shall be smooth and shall not show any deviations in excess of 3/16 of an inch when tested with a 10-foot straightedge in any direction.
4. When paving under traffic the CONTRACTOR shall plan his daily surfacing operations on a schedule which will result in not more than one (1) day's operation of exposed longitudinal joints. The longitudinal joints shall not have a height greater than two (2) inches and shall not be left exposed longer than 24 hours.

E. Surface Tolerance:

1. Upon completion, the pavement shall be true to grade and cross section. Except at intersections or any changes of grade, when a 16 foot straight edge is laid on the finished surface parallel to the centerline of the roadway, the surface shall not vary from the edge of the straight edge more than 1/16-inch per foot. Areas that are not within this tolerance shall be brought to grade immediately following the initial rolling. After the completion of final rolling, the smoothness of the course shall be checked, and the irregularities that exceed the specified tolerances or that retain water on the surface shall be corrected by removing the defective work and replacing with new material as directed by the ENGINEER at the expense of the CONTRACTOR.

F. Manholes and Valve Covers:

1. Manhole frames and valve covers shall be adjusted prior to placing the surface course.

G. Compacted Thickness of HMAC surface and Base Courses:

1. Surface Courses. The compacted thickness or depth of the asphaltic concrete surface course shall be as shown on the plans. Where the plans require a depth or thickness of the surface course greater than two inches compacted depth, same shall be placed in multiple courses of equal depth, each of which shall not exceed two inches compacted depth. If, in the opinion of the ENGINEER, an additional tack coat is considered necessary between any of the multiple courses, it shall be applied at the rate as directed.
2. Base Courses. The compacted thickness or depth of each base course shall be as shown on the plans. Where the plans require a depth or thickness of the course greater than 4 inches, same shall be accomplished by constructing multiple lifts of approximately equal depth, each of which shall not exceed these maximum compacted depths. If, in the opinion of the ENGINEER, an additional tack coat is considered necessary between any of the multiple lifts, it shall be applied as herein before specified and at the rate as directed.

H. Pavement Thickness Tests:

1. Pavement Thickness Test. Upon completion of the work and before final acceptance and final payment shall be made, pavement thickness test shall be made by the ENGINEER or his authorized representative unless otherwise specified in the special provisions or in the plans. The number and location of tests shall be at the discretion of the OWNER. The cost for the initial pavement thickness test shall be at the expense of the ENGINEER. In the event a deficiency in the thickness of pavement is revealed during normal testing operations, subsequent tests necessary to isolate the deficiency shall be at the CONTRACTOR's expense. The cost for the additional coring test shall be at the same rate charged by commercial laboratories.

I. Price Adjustment for Roadway Density:

1. The pavement of the unit price will be adjusted for roadway density as outlined in the following table. The adjustment will be applied on a lot by lot basis for each lift. The adjustment will be based on the average of five density tests. The price adjustment will be applied to the entire asphalt concrete mix which includes the HMAC aggregate, the asphalt cement and anti-stripping compound, is used.

| **Average Density % of Lab Density** | **Percent of Contract Price To Be Paid** |
|---|---|
| Above 95% | 100% |
| 94.0 to 94.99 | 96% |
| 93.0 to 93.99 | 91% |

| | |
|---|---|
| 92.0 to 92.99 | 85% |
| Less than 92.0 | * |

* This lot shall be removed and replaced to meet specification requirements as ordered by the ENGINEER. In lieu thereof, the CONTRACTOR and the ENGINEER may agree in writing that for practical purposes, the lot shall not be removed and will be paid for at 50% of the contract price.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 INCIDENTAL WORK:

A. Prime coat, anti-stripping compound, where used and tack coat shall not be measured for direct payment, but shall be considered as subsidiary work pertaining to the placing of asphaltic mixtures of the contract price.

### 4.02 MEASUREMENT:

A. Hot-mix asphalt concrete material shall be measured by the ton of 2,000 pounds or by the square yard of the type or types used in the completed and accepted work.

B. Weight shall be determined by a certified scale approved by the OWNER and recorded serially numbered weight tickets, identifying the vehicle and presented to the ENGINEER's representative on the job.

### 4.03 PAYMENT:

A. Work performed and materials furnished, as prescribed by this item, measured as provided herein, shall be paid at the unit bid price per ton or square yard for the type or types of hot mix asphalt concrete pavement shown on the proposal.

B. Unit bid price shall be payment in full for quarrying; furnishing all materials; for all heating; mixing; hauling; cleaning existing base course or pavement; placing asphaltic mixtures; rolling and finishing; and for all labor, tools, equipment and incidentals necessary to complete the work, including the work and materials involved in the application of prime coat and tack coat.

*** * * END OF SECTION * * ***

# SECTION 02615

# STABILIZED AGGREGATE LAYER (SAL)
# PAVED ROADWAY APPLICATIONS

## PART 1 GENERAL

### 1.01 SUMMARY

A. Section Includes – These specifications cover the requirements for constructing a Stabilized Aggregate Layer (SAL) in conjunction with other components and/or activities typical of paved or unpaved roadways or parking lots (i.e. subgrade preparation, asphalt, etc.). The work includes all materials, labor, equipment, storage, private lab testing, sampling, handling, excavation, disposal, tools, removal, placement, hauling, shaping, compacting, surveying, finishing to grade, curing, fees, permits, test-rolling and/or proof-rolling the aggregate including all appurtenances and incidentals necessary to complete the work. This specification is for stabilization of the pavement section aggregate base layer only. The properties and performance of the SAL have been considered in and are integral to the structural design of the pavement structure; thus no modification of the pavement structure shall be made other than the alternative stabilization methods described herein and in accordance with the requirements for submission of alternatives described herein.

B. Mechanically Stabilized Layer - This work shall consist of Mechanical Stabilization to reinforce the aggregate base layer. Mechanically Stabilized Aggregate includes, but is not limited to, the confinement of the aggregate material by use of a geogrid reinforcement system whereby the design requirements of the project are achieved.

C. Related Sections
   1. Section 02200 - Site Preparation
   2. Section 02300 - Earthwork
   3. Section 02700 - Bases, Ballasts, Pavements, and Appurtenances

### 1.02 DEFINITIONS

A. Stabilized Aggregate Layer (SAL) – A SAL is a layer of a defined thickness of unbound aggregate or base course materials that have been modified or improved through mechanical or chemical methods whereby the resulting layer behaves as a composite layer and has improved properties and performance capabilities.'

B. Mechanically Stabilized Layer (MSL) – A composite layer of a defined thickness comprised of unbound aggregate or base course materials combined with one or more layers of a polymeric geogrid grid structure that has been formed by a regular network of integrally connected, multi-directional tensile elements of appropriate orientation, size and shape with triangular apertures of appropriate size and shape to allow interlocking with the unbound aggregate or base course materials. The combination of the two materials creates an improved or modified composite layer with significantly improved properties and performance capabilities.

C. Chemical Stabilized Layer (CSL) – A composite layer of a defined thickness comprised of unbound aggregate or base course materials combined with some means of chemical (lime, cement, or other) that creates an improved or modified composite layer with significantly improved properties and performance capabilities.

D. Unbound Aggregate Layer – A layer of a defined thickness of unbound aggregate or base course materials that has not be modified or improved in any way. To achieve equivalent properties and performance to a SAL, an unbound aggregate layer will require greater thickness than a SAL.

E. Unpaved Application – Use of a SAL immediately over a soft subgrade soil in order to improve the bearing capacity and mitigate deformation of the subgrade soil under repeated loads. The goal of this application may be to reduce undercut requirements, improve construction efficiency, reduce the amount of aggregate subbase/base material required, provide a stiff working platform for pavement construction, or combination of these. The use of a SAL may also be considered as "unpaved" when the composite structure is utilized beneath a paved surface (rigid or flexible pavement) for the purpose of achieving the needed subgrade improvement for construction trafficking and site access.

F. Paved Application – Use of a SAL beneath or within the aggregate base course of a flexible (asphalt) pavement system to improve the stiffness of the system. The goal of this application may be to reduce the amount of aggregate or asphalt material required (reducing initial cost), increase the life of the pavement (reduce life-cycle cost), or a combination of the two.

## 1.04 SYSTEM DESCRIPTION

A. Option A – Mechanically Stabilized Layer - This work shall consist of Mechanical Stabilization to reinforce the aggregate base layer. Mechanically Stabilized Aggregate includes, but is not limited to, the confinement of the aggregate material by use of a geogrid reinforcement system whereby the design requirements of the project are achieved.

## 1.05 DESIGN & PERFORMANCE

A. The design of the pavement shall be in accordance with the 1993 American Association of State Highway and Transportation Officials (AASHTO) Guide for Design of Pavement Structures.

B. The Mechanically Stabilized Layer within the pavement structure shall have a thickness of 10.5 inches (267 mm) or as shown on the contract plans.

C. The design of the pavement shall be based on the following parameters:
1. Design traffic = 1000000 ESALs
2. Mechanically Stabilized Layer SN = 1.68

D. The MSL shall be incorporated into the pavement design by utilizing modified layer coefficients. Modified layer coefficients shall be calibrated and validated with the results of full scale laboratory, field and/or accelerated pavement testing where actual geogrids are tested in-soil and in representative conditions.

E. In-air index testing of geogrid properties, or explanations of performance based on in-air index testing of geogrid properties are not sufficient to understand the complex mechanisms involved in soil/geogrid interaction and/or the performance of MSLs. Therefore, no acceptance of alternates based on material property comparisons or explanations of performance based on in-air testing of geogrid properties will not be allowed.

F. Any submittal for an alternative MSL must be submitted at least 2 weeks in advance of the bid date and must be accompanied with the following:

1. A design signed and sealed by a professional engineer registered to practice in the country, state or province in which the project is located.
2. A written statement from the alternative MSL design engineer-of-record that the design is based on the AASHTO 1993 Pavement Design Guide and utilizes modified layer coefficient that have been properly calibrated and validated for the geogrid reinforcement utilized in the MSL in accordance with this Section.

## 1.06 SUBMITTALS

A. Submit representative geogrid product sample.

B. Submit geogrid product data sheet and certification from the Manufacturer that the geogrid product supplied meets the requirements of sub-part 2.02A of this Section.

C. Submit Manufacturer's installation instructions and general recommendations.

## 1.07 QUALITY ASSURANCE

A. Pre-Construction Conference - Prior to the start of construction of the MSL, the Contractor shall arrange a meeting at the site with the geogrid material supplier and, where applicable, the geogrid installer. The Owner and the Engineer shall be notified at least 3 days in advance of the time of the meeting. A representative of the geogrid supplier shall be available on an "as needed" basis during construction.

## 1.08 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection

1. Prevent excessive mud, wet concrete, epoxy, or other deleterious materials from coming in contact with and affixing to the geogrid materials.
2. Store at temperatures above -20 degrees F (-29 degrees C).
3. Rolled materials may be laid flat or stood on end.
4. Geogrid materials should not be left directly exposed to sunlight for a period longer than the period recommended by the manufacturer.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

A. An approved source of geogrid is The Tensar Corporation, Morrow, GA or their designated representative.

### 2.02 MATERIALS

A. Structural Soil Reinforcement Geogrid – The geogrid component of the SAL shall be TriAx TX5 or TX7 and shall be integrally formed and produced from a punched sheet of polypropylene which is then oriented in three substantially equilateral directions so that the resulting ribs shall have a high degree of molecular orientation, which continues at least in part through the mass of the integral node.

B. The resulting geogrid structure shall have apertures that are triangular in shape, and shall have ribs with a depth-to-width ratio greater than 1.0.

C. The geogrid shall have the nominal characteristics shown in the table below, and shall be certified in writing by the manufacturer to be TX5 or TX7:

TX5

| **Properties** | **Longitudinal** | **Diagonal** | **Transverse** | **General** |
|---|---|---|---|---|
| Rib pitch, mm (in) | 40 (1.60) | 40 (1.60) | - | |
| Mid-rib depth, mm (in) | - | 1.3 (0.05) | 1.2 (0.05) | |
| Mid-rib width, mm (in) | - | 0.9 (0.04) | 1.2 (0.05) | |
| Rib shape | | | | rectangular |
| Aperture shape | | | | triangular |

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. The Contractor shall check the geogrid upon delivery to verify that the proper material has been received. The geogrid shall be inspected by the Contractor to be free of flaws or damage occurring during manufacturing, shipping, or handling.

### 3.02 PREPARATION

A. The subgrade soil shall be prepared as indicated on the construction drawings or as directed by the Engineer.

### 3.03 INSTALLATION

A. The SAL shall be constructed at the proper elevation and alignment as shown on the construction drawings.

B. The geogrid shall be installed in accordance with these plans and specifications and any installation guidelines provided by the manufacturer or as directed by the Engineer.

C. The geogrid may be temporarily secured in place with ties, staples, pins, sand bags or backfill as required by fill properties, fill placement procedures or weather conditions or as directed by the Engineer.

### 3.04 GRANULAR FILL PLACEMENT OVER GEOGRID

A. Granular fill material shall be placed in lifts and compacted as directed under Section N/A and Section N/A. Granular fill material shall be placed, spread, and compacted in such a manner that minimizes the development of wrinkles in the geogrid and/or movement of the geogrid.

B. A minimum loose fill thickness of 6 inches (150mm) is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid. When underlying substrate is trafficable with minimal rutting, rubber-tired equipment may pass over the geogrid reinforcement at slow speeds (less than 5 mph). Sudden braking and sharp turning movements shall be avoided.

### 3.05 INSPECTION

A. The Owner or Owner's representative may randomly inspect geogrid before, during and after (using test pits) installation.

B. Any damaged or defective geogrid (i.e. frayed coating, separated junctions, separated layers, tears, etc.) will be repaired/replaced in accordance with Section 3.06.

### 3.06 REPAIR

A. Any roll of geogrid damaged before, during and after installation shall be replaced by the Contractor at no additional cost to the Owner.

B. Proper replacement shall consist of replacing the affected area adding 3ft (1m) of geogrid beyond the limits of the affected area.

### 3.07 PROTECTION

A. Follow the Manufacturer's recommendations regarding protection from exposure to sunlight.

## PART 4 BASIS OF PAYMENT – <u>ALL OPTIONS</u>

### 4.01 Unit of Measure

Stabilized Aggregate Layer shall be paid for by the square yard (square meter).

The unit price bid per square yard (square meter) shall include all materials, labor, equipment, storage, private lab testing, sampling, handling, excavation, disposal, tools, removal, placement, hauling, shaping, compacting, surveying, finishing to grade, curing, fees, permits, and proof-rolling the SAL including all appurtenances and incidentals necessary to complete the work. Test rolling and/or Proof rolling shall be considered incidental to the contract and will not be measured or paid for separately.

Payment will be made under:

| PAY ITEM | PAY UNIT |
|---|---|
| Stabilized Aggregate Layer | Square Yard (Square Meter) |

*** * *END OF SECTION * * ***

# SECTION 02660

# CONCRETE CURB AND GUTTER AND VALLEY GUTTER

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK

A. This work shall consist of the construction of concrete curb, concrete curb and gutter, concrete gutter or valley gutter, or combination thereof in compliance with these specifications, lines, grades, and details shown on the plans, or as directed by the ENGINEER.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. Concrete and manufactured curb and gutter materials shall be subject to inspection and tests at plants and construction sites for compliance with quality requirements.

B. Concrete curb and gutter or concrete valley gutter shall be constructed with concrete conforming to the provisions of Section 02614 - Portland Cement Concrete Paving, or Class "B" concrete conforming to the requirements of Section 03300 - Cast-In-Place Concrete.

C. Preformed expansion Joint Filler shall conform to the requirements of AASHTO M-33 or M-153.

D. Linseed Oil shall conform to the requirements of AASHTO D-260.

E. Mineral Spirits shall conform to the requirements of AASHTO D-235.

### 2.02 FOUNDATION

A. Concrete curb and gutter or concrete valley gutter shall be placed on an approved foundation conforming to the requirements of the following City Of McAllen Specifications:

1. Section 02210 - Subgrade Preparation,

2. Section 02601 - Flexible Base,

3. Section 02230 - Roadway Excavation, Borrow, and Embankment.

## PART 3 - EXECUTION

### 3.01 EXCAVATION

A. When required, excavation shall be made to the specified depth, and the base upon which the curb and gutter or valley gutter is to be placed shall be compacted to a firm, even surface conforming to the requirements of Subsection 2.02 above.

B. All soft and unacceptable material shall be removed an replaced with material approved by the ENGINEER in conformance with the requirements of Subsection 2.02 above.

### 3.02 FORMS

A. Forms shall be of wood or metal, straight, free from warp, and of such construction that there will be no interference to the inspection of grade or alignment.

B. All forms shall extend for the entire depth of the curb and gutter and shall be braced and secured sufficiently so that no deflection from alignment or grade will occur during the placing of the concrete. Flexible forms shall be used in curved sections so that the top surface of the forms will form a smooth, continuous arc.

### 3.03 MIXING AND PLACING

A. Concrete shall be proportioned, mixed, and placed in accordance with the requirements of Section 02614 and Section 03300.

B. Compaction of the concrete placed in forms shall be by vibration or other acceptable methods.

C. Unless otherwise provided, the exposed surfaces of curbs and gutters shall be finished by belting or with wooden floats. Forms shall be left in place until the concrete has set sufficiently so that they can be removed without injury to the curb and gutter.

### 3.04 SECTIONS

A. Curb and gutter shall be constructed in sections having a uniform length of 20 feet, unless otherwise directed by the ENGINEER. Sections shall be separate by open joints 1/8 inch wide except at expansion joints.

### 3.05 EXPANSION JOINTS

A. Expansion joints shall be formed at the intervals shown on the plans using a performed expansion joints filler having a thickness of 3/4 inch.

B. When the curb and gutter is constructed adjacent to or on concrete pavement, expansion joints, shall be located opposite or at expansion joints in the pavement.

## 3.06 CURING

A. Immediately upon completion of the finishing, the curb and gutter shall be moistened and kept moist for 3 days, or the curb and gutter shall be cured by the use of membrane-forming material. The method and details of curing shall be subject to the approval of the ENGINEER.

## 3.07 SURFACE TREATMENT

A. The surface of concrete curb and gutter or concrete valley gutter shall be treated with a solution of Linseed Oil and Mineral Spirits in accordance with the applicable requirements of Section 03300 - Cast-In-Place Concrete.

## 3.08 BACKFILLING

A. After the concrete has set sufficiently, the spaces in front and back of the curb shall be refilled to the required elevation with material approved by the ENGINEER, and shall be thoroughly tamped in layers of not more than 6 inches.

## 3.09 SLIP-FORM CONCRETE CURB, CONCRETE CURB AND GUTTER OR CONCRETE VALLEY GUTTER

A. Any concrete curb or concrete curb and gutter, except on structures, may be placed using a slip form machine provided that the finished concrete curb or concrete curb and gutter is true to line and grade and the concrete is dense and of the required surface texture.

B. The concrete shall be of a consistency that it will maintain the shape of the concrete curb or concrete curb and gutter section without support after slip forming.

C. The top and face of the finished concrete curb or concrete curb and gutter shall be true an straight and the top surface of the concrete curb or concrete curb and gutter shall be of uniform width and free from humps, sags, or other irregularities.

D. The forming portion of the slip form machine shall be readily adjustable vertically during the forward motion of the slip from machine to provide a variable height of concrete curb or concrete curb and gutter grade when necessary. A grade line gauge or pointer shall be attached to the slip form machine in such a manner that a continual comparison can be made between the concrete curb or concrete curb and gutter grade as indicated by the offset guidelines.

E. Concrete shall be fed to the slip form machine at a uniform rate. The slip form machine shall be operated under sufficient uniform restraint to forward motion to produce a well compacted mass of concrete free from surface pits larger than 3/16 inch in diameter and requiring no further finishing, other than light brushing with a wet brush. Finishing with a brush application of grout will not be permitted.

F. Transverse weakened plane and expansion joints shall be constructed at right angles to the line of the concrete curb, concrete curb and gutter, or concrete valley gutter.

G. Expansion joints may be constructed by sawing through the concrete curb or concrete curb and gutter section to its full depth. The width of the cut shall be such as to admit the joint filler with a snug fit.

H. The operations of sawing and inserting the joint filler shall be completed before curing the concrete. At the conclusion of the curing period the filler in each joint shall be checked for tightness of fit. The loose filler in any joint shall be mortared in place and cured.

I. Excavation shall be as per Subsection 2.02 above.

J. All remaining provisions of Subsection 2.02 above also apply, unless otherwise specified.

## PART 4 - MEASUREMENT AND PAYMENT

### 4.01 MEASUREMENT

A. Curb and gutter, curb, and valley gutter shall be measured by the linear foot.

1. Curb shall be measured along the front face of the section at the finished grade elevation.

2. Combination curb and gutter will be measured along the face of the curb at the flowline of the gutter.

3. Valley gutter will be measured along the flowline of the gutter.

B. A deduction in length shall be made for drainage structures, such as catch basins or inlets, in the curb, gutter, or combination thereof.

C. There will be no direct measurement or payment of materials used to construct curb and gutter, curb or valley gutter.

D. Excavation or construction of embankment for foundation of curb, valley gutter, or combination curb and gutter will not be measured for payment.

### 4.02 PAYMENT

A. The accepted quantities of curb, valley gutter, and curb and gutter will be paid for at the contract unit bid price per linear foot for each kind and type specified complete in place.

B. Foundation preparation by excavating or constructing embankment to the required sub-grade elevation is considered incidental to the completion of the work and no direct payment will be made thereof.

C. Compensation will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*** * * * END OF SECTION * * * ***

**SECTION 02780**

# FLAT WHEEL ROLLING

## PART 1- GENERAL

1.01 GENERAL DESCRIPTION OF WORK:

A. This work shall consist of the compaction of subgrade, embankment, flexible base, surface treatments and asphalt surfaces by the operation of approved power roller as herein specified and as directed by the ENGINEER.

## PART 2 - PRODUCTS

2.01 EQUIPMENT:

A. Embankments and Flexible Bases

1. Power rollers shall be of the 3-wheel, self-propelled type, weighing not less than 10 tons and shall provide a compression on the rear wheels of not less than 325 pounds per linear of wheel width. All wheels shall be flat.

2. The rear wheels shall have a diameter of not less than 48 inches and each shall have a wheel width of not less than 20 inches.

B. Surface Treatments and Pavements

1. Power rollers shall be the 3-wheel or tandem, self-propelled type, weighing not less than 3 tons nor more than 6 tons. All wheels shall be flat.

2. Rollers shall be equipped with an adequate scraping or cleaning device on each wheel.

3. Rollers used to compact asphalt mixture shall be equipped with a water system which will keep all tires uniformly wet.

4. In lieu of the rolling equipment specified, the CONTRACTOR may, upon written permission from the ENGINEER, operate other compacting in the same period of time as the specified equipment. If the substituted compaction within the same period of time as would be expected of the specified equipment, as determined by the ENGINEER, its use shall be discontinued.

5. Rollers shall be maintained in good repair and operating condition and shall be approved by the ENGINEER.

## PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS:

A. Subgrades, Embankments and Flexible Base

1. The subgrade or embankment layer or the base course shall be sprinkled if directed and rolling with a power roller shall start longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least 1/2 the width of the rear wheel of the power roller.

2. On super-elevated curves, rolling shall begin at the low sides and progress toward the high sides. Alternate trips of the roller shall be slightly different in length.

3. The rollers, unless otherwise directed, shall be operated at a speed between 2 and 3 miles per hour.

B. Surface Treatments and Pavements

1. Rolling shall be done to produce a satisfactory surface as called for in surface treatment and pavement items.

2. The sequence of work shall be as indicated for embankment layer or base course.

3. The operating speed shall be determined by the CONTRACTOR.

## PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT:

A. No additional compensation will be made for materials, equipment or labor required by this item, but shall be considered incidental to the other items included in the contract.

*** * * END OF SECTION * * ***

**SECTION 02782**

**PNEUMATIC TIRE ROLLING**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. This work shall consist of the compaction of embankment, flexible base, surface treatments or pavements by the operation of approved pneumatic tire rollers.

## PART 2 - PRODUCTS

### 2.01 GENERAL REQUIREMENTS:

A. When used on seal coats, asphaltic surface treatments and bituminous mixture pavements, the roller shall be self propelled and equipped with smooth tread tires with 45 psi tire pressure.

B. The roller shall be so constructed as to be capable of being operated in both a forward and a reverse direction.

C. When used on bituminous mixture pavements, the roller shall have suitable provision for moistening the surface of the tires while operating.

D. When turning is impractical or detrimental to the work and when specifically directed by the ENGINEER, the roller shall be of the self-propelled type.

E. In lieu of the rolling equipment specified, the CONTRACTOR may operate other compacting equipment that will produce equivalent relative compaction in the same period of time as the specified equipment. If the substituted compaction equipment fails to produce the desired compaction within the same period of time, its use shall be discontinued.

F. Rollers shall be maintained in good repair and operating condition and shall be approved by the ENGINEER.

### 2.02 LIGHT PNEUMATIC TIRE ROLLER:

A. The light pneumatic tire roller shall consist of not less than 9 pneumatic tire wheels, running on axles in such manner that the rear group of tires will cover the entire gap between adjacent tires of the forward group and mounted in a rigid frame and provided with a loading platform or body suitable for ballast loading.

B. The front axle shall be attached to the frame in such manner that the roller may be turned within a minimum circle.

C. The pneumatic tire roller under working conditions shall have an effective rolling width of approximately 60 inches and shall be so designed that by ballast loading the total load be varied uniformly from 9,000 pounds or less to 18,000 pounds or more.

D. The roller shall be equipped with tires that will afford ground contact pressures to 45 pounds per square inch or more. The operating load and tire air pressure shall be within the range of the manufacturer's chart. The roller under working conditions shall provide a uniform compression under all wheels.

E. Individuals tire inflation pressures shall be within +5 psi of each other.

F. The pneumatic tire roller shall be drawn by either a suitable crawler type tractor, a pneumatic tired tractor, a truck of adequate tractive effort or may be of the self-propelled type and the roller, when drawn or propelled by either type of equipment, shall be considered a light pneumatic tire roller unit.

**2.03 MEDIUM PNEUMATIC TIRE ROLLER (TYPE A):**

A. The medium pneumatic tire roller (Type A) shall consist of not less than 7 pneumatic tired wheels, running on axles in such manner that the rear group of tires will cover the entire gap between adjacent tires of the forward group and mounted in a rigid frame and provided with a loading platform or body suitable for ballast loading.

B. The front axles shall be attached to the frame in such a manner that the roller may be turned within a minimum circle. The pneumatic tire roller, under working conditions, shall have an effective rolling width of approximately 84 inches and shall be so designed that, by ballast loading, the total load may be varied uniformly from 23,500 pounds or less to 50,000 pounds or more.

C. The roller shall be equipped with tires that will afford ground contact pressures to 80 pounds per square inch or more. Individual tire inflation pressures shall be within +5 psi of each other.

D. The operating load and tire air pressure shall be within the range of the manufacturer's chart.

E. The pneumatic tire roller shall be drawn by either a suitable crawler type tractor, a pneumatic tired tractor, a truck of adequate tractive effort or may be of the self-propelled type.

F. The roller, when drawn or propelled by any type of equipment, shall be considered a medium pneumatic tire roller unit.

G. The power unit shall have adequate tractive effort to properly move the operating roller at variable uniform speeds up to approximately 5 miles per hour.

## 2.04 MEDIUM PNEUMATIC TIRE ROLLER (Type B):

A. The medium pneumatic tire roller (Type B) shall conform to the requirements for Medium Pneumatic Tire Roller (Type A) as specified above, except that the roller shall be equipped with tires that will afford ground contact pressures to 90 psi or more.

# PART 3 -EXECUTION

## 3.01 CONSTRUCTION METHODS:

A. The embankment layer or the base course be sprinkled if directed and rolling with a pneumatic tire roller shall start longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least 1/2 of width of the pneumatic tire roller.

B. On super-elevated curves, rolling shall begin at the low sides and progress towards the high sides.

C. Alternative trips of the roller shall be slightly different in length.

D. The light pneumatic tire roller shall be operated at speeds between 2 and 6 miles per hour for asphalt surfacing work and all other work.

E. The medium pneumatic tire roller shall be operated at speeds which produce a satisfactory product.

F. Sufficient rollers shall be provided to compact the material in a satisfactory manner. When operations are so isolated from one another that 1 roller unit cannot perform the required compaction satisfactorily, additional roller units shall be provided.

# PART 4 - MEASUREMENT AND PAYMENT

## 4.01 MEASUREMENT AND PAYMENT:

A. No additional compensation will be made for materials, equipment or labor required by this item, but shall be considered subsidiary to the various items of the contract.

*** * * END OF SECTION * * ***

**SECTION 02786**

**PROOF ROLLING**

## PART 1 - GENERAL

1.01 GENERAL DESCRIPTION WORK:

A. This work shall consist of furnishing and operating heavy pneumatic tired compaction equipment for testing the compaction of embankment, sub-grade or flexible base.

B. Proof roll is to be used to locate unstable areas.

## PART 2 - PRODUCTS

2.01 EQUIPMENT:

A. The proof rolling equipment shall consist of not less than 4 pneumatic tired wheels, running on axles carrying not more than 2 wheels and mounted in a rigid frame and provided with loading platform or body suitable for ballast loading.

B. All wheels shall be arranged so that they will carry approximately equal loads when operating on uneven surfaces.

C. The proof roller under working conditions shall have a rolling width of from 8 feet to 10 feet and shall be so designed that, by ballast loading, the gross load may be varied uniformly from 25 tons to 50 tons.

D. The tires shall be capable of operating under the various loads with variable air pressure up to 150 pounds per square inch. The operating load and tire pressure shall be within the range of the manufacturer's chart as directed by the ENGINEER.

E. The proof roller shall be drawn by a suitable crawler type tractor or rubber tire tractor of adequate tractive effort or may be of self-propelled type. There shall be a sufficient quantity of ballast available to load the equipment to a maximum gross weight of 50 tons.

F. Rubber tired tractive equipment shall be used on base courses.

G. Other type tractive equipment may be used on embankment sub-grade.

H. The heavy pneumatic tire roller unit shall be capable of turning 180 degrees in the crown width.

I. In lieu of the rolling equipment specified, the CONTRACTOR may, upon written permission from the ENGINEER, operate other equipment that will produce equivalent results as the specified equipment. If the substituted equipment fails to produces the desired results as would be expected of the specified equipment as determined by the ENGINEER, its use shall be discontinued.

## PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS:

A. This work shall be done to proof all prepared sub-grades and flexible base courses or as directed by the ENGINEER.

B. On embankment compaction, each layer will be placed to specified thickness at optimum moisture and compacted with conventional equipment to comply with the requirements of the governing embankment item.

C. Prior to placing the overlaying course, the layer shall be proof rolled as directed by the ENGINEER.

D. When the operation of the proof rolling unit shows an area to be unstable or non-uniform, such area shall be brought to satisfactory stability and uniformity by additional compaction, by removal of unsuitable materials or replacement with suitable materials and re-compaction.

E. The surface tested shall then be checked for conformity with line and grade and any irregularities corrected.

F. Roller shall be operated at speeds between 2 and 6 miles per hour or as directed by the ENGINEER.

## PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT:

A. No additional payment will be made for the materials, equipment or labor required by this item, but shall be considered subsidiary to the various items included in the contract.

*** * * END OF SECTION * * ***

**SECTION 03300**

**CAST-IN-PLACE-CONCRETE**

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK COVERED:

A. Mixing, placing, finishing and providing all related services necessary to construct all cast-in-place concrete work indicated on plans.

### 1.02 QUALITY ASSURANCE:

A. Comply with the latest published edition of the American Concrete Institute (ACI) and American Society of Testing and Materials (ASTM) standards and codes:

1. ACI 315 - Manual of Standard Practice for Detailing.
2. ACI 318 - Building Code Requirements for Reinforced Concrete.
3. ACI 347 - Recommended Practice for Concrete Formwork.
4. ASTM A36 - Structural Steel.
5. ASTM C33 - Concrete Aggregates.
6. ASTM C39 - Concrete Strength of Molded Concrete Cylinders.
7. ASTM C94 - Ready-Mixed Concrete.
8. ASTM C143 - Slump of Portland Cement Concrete.
9. ASTM C150 - Portland Cement.
10. ASTM C309 - Liquid Membrance-Forming Compounds for Curing Concrete.
11. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
12. ACI 301 - Specification for Structural Concrete for Building.

B. Submit compliance submittals as specified in Division 1, including but not limited to the following: bar schedule, bar details, shop drawings including size and location of openings, water stops, joint systems and curing method.

C. Submit proposed concrete mix proportions to ENGINEER prior to placing concrete.

## PART 2 - PRODUCTS

### 2.01 PORTLAND CEMENT:

A. Type I, Type II or Type III conforming to ASTM C150 as modified by Texas Department of Highways and Public Transportation, 1982 Standard Specifications.

B. Type I or Type II cement may be used unless Type II is specified.

C. Except when Type II specified, Type III may be used when the anticipated air temperature for the succeeding 12 hours will not exceed 60□F.

D. Type III may be used in all precast pre-stressed concrete except in piling when Type II cement is required for substructure concrete.

E. All cement used in a monolithic placement shall be of the same type.

F. May be either bagged or bulk. Partially set or caked cement will be rejected.

G. All types of cements shall be "low-alkali" cements.

**2.02 WATER:**

A. Clear, fresh, free from injurious amounts of oil, alkaline, acid or organic matter or other deleterious substances and shall not contain more than 1000 parts per million of chlorides as CL nor more than 1000 parts per million of sulfates as $SO_4$.

B. The sand, or mixture of sand, comprising a single fine aggregate, shall consist of clean, hard, durable, un-coated grains and shall be essentially free from clay lumps, salt or alkali, and other foreign material.

C. The maximum permissible percentage, by weight, of deleterious substances shall not exceed the following:

| | |
|---|---|
| Material removed by decantation | 3.0% |
| Other deleterious substances such as coal, shale, coated grains and soft flaky particles | 3.0% |

An additional loss of 2% by decantation may be allowed, provided this new additional loss is material of the same quality as specified for fine aggregate or mineral filler.

D. Gradation, percent of weight retained:

| **Sieve Size** | **% Retained** |
|---|---|
| 3/8 inch | 0 |
| No. 4 | 0 - 5 |
| No. 8 | 0 - 20 |
| No. 16 | 0 - 50 |
| No. 30 | 0 - 75 |
| No. 50 | 0 - 90 |
| No. 100 | 0 - 100 |
| No. 200 | 0 - 100 |

E. Fineness Modulus: for Grade 1 only - 2.3 minimum, 3.1maximum.

F. Miner Filler:

1. May be added upon written authorization of ENGINEER.
2. Shall be stone dust or clean crushed sand, or other approved inert material.
3. Shall not exceed 5% of the fine aggregate.
4. Shall meet the following requirements:

| | |
|---|---|
| Passing No. 30 sieve | 95 to 100% |
| Passing No. 100 sieve | 70 to 100% |

**2.04 COARSE AGGREGATE:**

A. Crushed stone, gravel, crushed gravel, crushed blast furnace slag or a combination of these.

B. Gravel and crushed gravel shall consist of clean, hard durable particles, free from adherent coating, thin or elongated pieces, soft or disintegrated particles, dirt, organic or deleterious substances, salt or alkali, and other foreign material.

C. Crushed stone shall consist of the clean, dust free product resulting from crushing of stone. There shall be no adherent coatings, clay, loam organic or deleterious substance, salt or alkali, and other foreign material.

D. The maximum permissible percentage, by weight, of deleterious substances shall not exceed the following:

| | |
|---|---|
| Material removed by decantation | 1.0% |
| Shale, slate or other similar material | 1.0% |
| Clay lumps | 0.25% |
| Soft fragments | 3.0% |
| Other deleterious substances, including friable, thin, elongated or laminated pieces | 3.0% |

E. Course aggregates shall have a percent wear of not more than 45 when tested in accordance with Test Method Tex-410-A.

F. Gradation, percent of weight retained on:

Grade No. 1 - Maximum Nominal Size 2 1/2 in. (63 MM)

| Sieve | Percentage Retained |
|---|---|
| 2 1/2 in. | 0% |
| 2 in. | 0 - 20% |
| 1 1/2 in. | 15 - 50% |
| 3/4 in. | 60 - 80% |
| No. 4 | 95 - 100% |

Grade No. 2 - Maximum Nominal Size 1 1/2 in. (37.5 mm)

| Sieve | Percentage Retained |
|---|---|
| 2 in. | 0% |
| 1 1/2 in. | 0 - 5% |
| 3/4 in. | 30 - 65% |
| 3/8 in. | 7 - 90% |
| No. 4 | 95 - 100% |

Grade No. 4 - Maximum Nominal Size 3/8 in. (9.5mm)

| Sieve | Percentage Retained |
|---|---|
| 1/2 in. | 0 - 5% |
| 3/8 | 5 - 30% |
| No. 4 | 75 - 100% |

G. Gradation Requirements - maximum size of aggregate for structural concrete shall not exceed three inches, and shall be reduced in size to meet the following conditions:

1. One-sixth of the least dimension between forms of that part of the structure in which concrete is to be placed;
2. Three-fourths of the clear space between reinforcement.
3. The maximum size aggregate is defined as the clear space between the sides of the smallest square opening through which 95 percent of the weight of the aggregate can be passed.
4. Unless otherwise noted or restricted by above Grade No. 2, gradation shall be used.

**2.05 PIT-RUN AGGREGATE:**

A. Pit-run aggregate is the natural gravel and sand obtained from pits without the addition of other fine or curse aggregates, and shall consist of hard, durable, un-coated pebbles or stone particles mixed with sand.

B. Pit-run aggregate shall be free from lumps of clay and injurious amounts of dust, shale, soft or flaky particles, salt and alkali.

C. Pit-run aggregate shall not be used for high-strength concrete of 3000 psi and above.

E. Pit-run aggregate may be used only for concrete cushion, cradle and protection for pipe.

**2.06 ADMIXTURES:**

A. Concrete admixtures shall comply with Section 03320.

**2.07 REINFORCING STEEL**:

A. Reinforcing steel shall comply with Section 03320.

**2.08 CURING MATERIALS:**

A. Liquid Membrane: white pigmented chlorinated rubber, ASTM C309.

B. Liquid Membrane: resin base, clear compound, permitting application of paint, Servicised Products Corp. - Code 2802 or equal.

C. Plastic Film: white pigmented, 0.00085" (minimum) thick.

D. Burlap: jute fabric, lean, free of impurities.

E. Surface Hardener: gray crystal, acidic fluosilicate base, slightly hygroscopic chemical surface hardener, SIKA Chemical Corp. or equal.

**2.09 JOINT MATERIALS:**

A. Joint Sealer: hot poured, non-extruding, elastic, ASTM D1190.

B. Preformed Expansion Joint Filler: non-extruding, bituminous fiber, ASTM D1751.

**2.10 WATERSTOP:**

A, Polyvinyl chloride or rubber, center bulb.

B. Size to suit joints, minimum 6".

**2.11 FORM MATERIALS:**

A. Use plywood, metal, metal framed plywood faced or other acceptable panel-type material.

B. Coat forms with non-bonding, non-staining commercial compounds.

**2.12 MOISTURE BARRIER:**

A. Polyethylene sheet, minimum 8 mil., ASTM E154.

**2.13 CONCRETE MIX DESIGN AND CONTROL:**

A. Submit not less than 10 days prior to the start of concreting operations, to the ENGINEER.

1. Mix design, using a course aggregate factor acceptable to the Engineer.
2. Sufficient samples of all materials to be incorporated into the mix for testing.
3. Full description of the source of supply of each material component.

B. Course aggregate factor:

1. Not more than 0.82 when voids less than 48%.
2. Not more than 0.85 when voids exceed 48%.

3. Not less than 0.68.

C. No changes or deviations from proportions or sources of supply without approval of ENGINEER.

D. No concrete may be placed on the job site until the mix design has been approved by ENGINEER in writing to the CONTRACTOR.

**2.14 CONCRETE QUALITY:**

A. Consistency:

1. Mortar shall cling to the course aggregate.
2. The aggregate shall not segregate during transport.
3. The concrete and mortar shall show no free water when removed from the mixer.

B. The consistency should allow the completion of all finishing operations with the addition of water to the surface.

C. The concrete shall be uniform, workable, cohesive, possess satisfactory finishing qualities and be of the stiffest consistency that can be placed and vibrated into a homogeneous mass.

D. Excessive bleeding shall be avoided.

E. Slump requirements shall be as follows:

| Structural Concrete | Avg. Slump | Max. Slump |
|---|---|---|
| (a) Cased Drilled Shafts and thin-walled Sections (9 inches or less) | 4 | 5 |
| (b) Slabs, Caps, Columns, Piers, Wall Sections Over 9 inches, etc. | 3 | 4 |
| (c) Slip Form Paving<br>Underwater or seal concrete | | 2 1/2 |
| (d) Rip-Rap, curb, Gutter and other Miscellaneous Concrete | As Specified | By Owner |

**Note:** No concrete shall be permitted with slump in excess of the maximums shown. Any concrete mix failing to meet the above consistency requirements, although meeting the slump requirements shall be considered unsatisfactory; and the mix shall be changed to correct such unsatisfactory conditions.

F. The concrete shall comply with Table 1 below:

**TABLE 1 - CLASSES OF CONCRETE**

| CLASS OF CONCRETE | MIN.-MAX. SX. CEMENT | MIN. BEAM STRENGTH 28-DAY PSI | MIN. BEAM STRENGTH 7-DAY PSI | MAX. WATER CEMENT RATIO ITEM 2.1.1. | COARSE NO. |
|---|---|---|---|---|---|
| A. | 5.0 | 3000 | 500 | 6.5 | 2-3-4 |
| B | 4.0 | 2000 | 330 | 8.0 | 2-3-4 |
| C* | 6.0 | 3600 | 600 | 6.0 | 1-2-3-*** |
| D | 3.0 | 1500 | 250 | 11.0 | 2-3-4 |
| E | 6.0 | 3000 | 500 | 7.0 | 2-3 |
| F | 6.5 | 4200 | 700 | 5.5 | 2-3 |
| H*** | 6.5-8.0 | AS SPECIFIED ON PLANS | N/A | 5.5 | 3 |

* Entrained Air:

** No. 1 course aggregate may be used in foundations only (except cased drilled shafts).

*** Pre-stressed Concrete.

**** ASTM C 293 (Center Point).

**2.15 GROUT:**

A. Non-Shrink:

1. Use pre-mix non-shrink, Embeco Premixed Grout or Embeco Pre Mixed Mortar by Master Builders Company or equal.
2. Keep water to a minimum for placing by the dry packing method.

B. Grout for Bonding:

1. 1 part cement to 1 1/2 parts sand by weight.
2. Keep water to a minimum.

**PART 3 - EXECUTION**

**3.01 SUBGRADE:**

A. Insure sub-grade is true to line and grade and compacted as specified.

B. Fill and re-compact any ruts or depressions.

C. Check cross section with a template.

D. Place moisture barrier or moisten sub-grade prior to placing of concrete. Method to be approved by the ENGINEER.

**3.02 FORMS:**

A. Provide forms for all concrete work including footings and base slabs.

B. Construct forms so that completed concrete will conform to shapes, lines, grades and dimensions indicated and required.

C. Forms shall be true, plumb and level with reasonable tight joints. Adequately support and brace forms.

D. Place anchors, inserts, bolts, sleeves and other device indicated or required for the various portions of all the work.

E. Oil temporary forms with non-staining form oil before reinforcing steel is placed.

F. Rough form finish as defined by ACI 301 permitted for concealed concrete.

G. Smooth form finish as defined by ACI 301 permitted for concealed concrete.

H. Provide 3/4 inch chamfer on exposed corners and edges, and 1-foot below ground level.

**3.03 REMOVAL OF FORMS:**

A. Do not remove forms or supports until concrete has acquired sufficient strength to safely support its own weight and the superimposed loads.

B. Mixing shall be done in a mixer of adequate size and type to produce uniform distribution of the material throughout the mass.

C. The mixer shall have a plate affixed showing the manufacturer's recommended operating data and it shall be operated within the speed and capacity limits stated thereon.

D. The absolute volume of the concrete batch shall not exceed the rated capacity of the mixer.

E. The entire contents of the drum shall be discharged before any materials are placed.

F. Improperly mixed concrete will not be placed.

G. The mixing time shall be in accordance with the recommendations of the mixer manufacturer.

H. Transix Mix Concrete:

1. Sufficient transit mix equipment shall be assigned exclusively to the project as required for continuous operation.
2. Satisfactory evidence shall be furnished so that the delivery of concrete shall be continuous at regular and uniform intervals, without stoppage or interruption.
3. Concrete shall not be placed on the job after a period of 1 hours after the cement has been placed in the mixer, with mixer turning; 30 minutes without mixer turning.

I. Continuous Volummetric Mix Concrete:

1. A mobile, continuous, Volummetric mixer of the rotating puddle type may be used for when approved by ENGINEER.
2. Mixers shall be designed to receive all the concrete ingredients, including admixtures, required by the mix design in a continuous uniform rate and mix them to the required consistency before discharging.
3. The mixers shall adequate water supply and metering devices.
4. Calibration of these mixers will be required.

**3.04 PLACING CONCRETE:**

A. The minimum temperature of all concrete at the time of placement shall not be less than 50□ F.

B. Clean transporting equipment, reinforcing and embedded items before placing concrete.

C. Batch trucks or paving equipment not permitted on prepared sub-grade unless authorized by the ENGINEER based on actual job conditions.

D. Place no concrete until after inspection of forms by ENGINEER.

E. The maximum time interval between the addition of cement to the batch, and the placing of concrete in the forms shall not exceed the following:

| **AIR OR CONCRETE TEMPERATURE** | **NON-AGITATED CONCRETE** | **MAXIMUM TIME** |
|---|---|---|
| 80 deg. F or Above | (26.6 deg. C) | 15 minutes |
| 35 deg. F or 79 deg. F | (1.6 to 26.1 deg. C) | 30 minutes |
| | **AGITATED CONCRETE** | |
| 90 deg. F or Above | (32.2 deg. C) | 45 minutes |
| 75 deg F to 89 deg. F | (23.9 to 31.6 deg. C) | 60 minutes |
| 35 deg. F to 74 deg. F | (1.6 to 23.3 deg. C) | 90 minutes |

F. Prevent segregation during placing.

G. Consolidate flat work with one pass of mechanical vibrator moving parallel to centerline. Unusual sections and widths may be hand puddled and finished.

H. Place concrete continuously so that each pour unit will be monolithic in construction and will terminate at expansion, contraction or construction joint. Permit not more than 30 minutes between depositing adjacent batches.

I. Place slab concrete over membrane waterproofing before waterproofing has become damaged or dirty.

J. Concrete placement will not be permitted when impending weather conditions will impair the quality of work.

K. Slope horizontal surfaces of exterior concrete for drainage.

L. Deposit concrete in forms in horizontal layers not deeper than 24 inches. Avoid inclined construction joints. Place each layer while preceding layer is still plastic to avoid cold joints.

M. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spanding, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

N. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to penetrate placed layer of concrete and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. Limit vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without casing segregation of mix.

**3.05 PLACING CONCRETE IN WATER:**

A. Concrete shall be deposited in water only when specified on the plans or with written permission of the ENGINEER.

B. The forms or cofferdams shall be sufficiently tight to prevent any water current passing through the space in which the concrete is deposited.

C. Pump will not be permitted during the concrete placing, nor until it has set for at least 36 hours.

D. The concrete shall be placed with a tremie, closed bottom-dump bucket or other approved method.

E. The concrete shall not be allowed to fall freely through the water nor shall it be

disturbed after it has been placed. Its surface shall be kept approximately level during placement.

F. The tremie shall consist of a water tight tube 14 inches or less in diameter. It shall be constructed so that the bottom can be sealed and opened after it is in place and fully charged with concrete. It shall be supported so that it can be easily moved horizontally to cover all the work area and vertically to control the concrete flow. The lower end of the tremie shall be submerged in the concrete at all times.

G. Bottom-dump buckets used for underwater placing shall have a capacity of not less than one-half cubic yard. It shall be lowered gradually and carefully until it rests upon the concrete already gradually and carefully until it rests upon the concrete already placed and raised very slowly during the upward travel; the intent being to maintain still water at the point of discharge and to avoid agitating the mixture.

H. The placing operations shall be continuous until the work is complete.

I. Unless otherwise specified all concrete placed under water, except seal concrete, shall contain an additional sack of cement per cubic yard.

**3.06 JOINTS:**

A. CONTRACTOR:

1. Extend entirely across flat slabs at locations shown.
2. Location where not shown; maximum spacing is:
   a. Driveways: 10'
   b. Sidewalks: 4'
   c. Other flat slabs: 20 times slab thickness.
3. Saw depth not less than 1/4 slab thickness.

B. Expansion:

1. Install where shown on the plans.
2. Locations where not shown: all structures and features which project through, into or against slab.
3. Install according to manufacturer's recommendations, set material securely before placing concrete.
4. Install 1 inch width unless shown otherwise.

C. Filling Joints:

1. Fill not later than 14 days after sawing.
2. Fill immediately following cleaning.
3. Fill to 1/8" of surface.
4. Remove excess while material is still pliable.
5. Refill low areas where necessary.
6. Omit filling sidewalk joints.

**3.07 FINISHING EXTERIOR FLAT WORK:**

A. Strike off and float as required.

B. Check surface with ten foot straight edge, maximum variance allowed - 1/8".

C. Drag concrete surface longitudinally with double thickness burlap drag after completion of straight edging unless noted otherwise.

D. Use edger on edges of slab.

**3.08 CURING:**

A. CONTRACTOR shall inform the ENGINEER fully of the methods and procedures proposed for curing; shall provide proper equipment and material in adequate amounts; shall have approval of the proposed method, equipment and material prior to placing concrete.

B. All concrete shall be cured for a period of 4 curing days except as noted herein.

**EXCEPTIONS TO 4-DAY CURING**

| **Description** | **Required Curing** |
|---|---|
| Upper Surfaces of Bridge Roadway, Median and Sidewalk Slabs and Top Slabs of Direct Traffic Culverts | 8 Curing Days |

A curing day is defined as a calendar day when the ambient temperature, taken in the shade

*** * * END OF SECTION * * ***

**SECTION 03320**

# CONCRETE ADMIXTURES

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. This work shall consist of furnishing materials for use as admixtures in concrete.

## PART 2 - PRODUCTS

### 2.01 AIR ENTRAINING ADMIXTURE

A. An "Air Entraining Admixture" is defined as a material which, when added to a concrete mixture in the correct quantity, will entrain uniformly dispersed microscopic air.

B. This admixture shall conform to ASTM C 260, modified as follows:

1. The cement used in any series of tests shall be either the cement proposed for specific work or a reference" Type I cement from one mill.

2. Unless otherwise indicated, the minimum relative durability factor shall be 80.

C. The air entraining admixture used in the reference concrete shall be high quality neutralized Vinsol Resin.

### 2.02 WATER - REDUCING, RETARDING ADMIXTURE

A. A "Water-reducing, Retarding Admixture" is defined as a material which, when added to a concrete mixture in the correct quantity, will reduce the quantity of mixing water required to produce concrete of a given consistency and retard the initial set of the concrete.

B. This mixture shall conform to ASTM C 494, Type A or D, modified as follows:

1. The water-reducing retarder shall retard the initial set of the plastic concrete a minimum of 2 hour and a maximum of 4 hours when the materials are at a temperature of 90 F, the dosage rate specified by the manufacturer.

2. The cement used in any series of tests shall be either the cement proposed for specific work or a "reference" Type I cement for one mill.

3. All concrete tested shall contain entrained air.

## 2.03 WATER-REDUCING ADMIXTURE

A. "Water-reducing Admixture" is defined as a material which when added to a concrete mixture in the correct quantity, will reduce the quantity of mixing water required to produce concrete of a given consistency and required strength.

B. This admixture shall conform to ASTM C 494, Type A.

## 2.04 ACCELERATING ADMIXTURE

A. In "Accelerating Admixture" is defined as an admixture that accelerates the setting time and the early strength development of concrete.

B. This admixture shall conform to ASTM C 494, Type C, modified as follows:

1. This accelerating admixture will contain no chlorides and shall be used in the liquid for only.

## 2.05 HIGH RANGE WATER REDUCING ADMIXTURES

A. A "High-range Water Reducing Admixture," referred to as a super plaster size, is defined as a synthetic polymer material which, when added to a low slump concrete mixture increases the slump without segregation, impermeability and durability of the mix.

B. This admixture shall conform to ASTM C 494, Type F or G, modified as follows:

1. It shall reduce the required water by a minimum of 15 percent.

2. It shall increase the 7 day compressive strength of the concrete by a minimum of 25 percent.

C. The admixture when added to the mix shall produce the following:

1. Modify a low slump concrete, without the addition of water, to produce a slump which conforms to the range indicated.

2. It shall prevent a temperature rise of the mix above 100 F during high ambient conditions.

3. It shall not increase the chloride content of mix.

## 2.06 CERTIFICATION

A. The CONTRACTOR shall submit the name of the admixture proposed and manufacturer's certification that products selected meet the requirements of this item and of ADTM C 260 and C 494 as required.

B. If more than one admixture is proposed in the concrete mix, a statement of compatibility of components shall accompany certification.

C. The ENGINEER may request additional information to be submitted such as infrared spectrophotometry scan, solids content, ph value, etc., for further identification.

D. A change in formulation discovered by any of the tests prescribed herein or other means and not reported and re-tested, may be cause to permanently bar the manufacturer from furnishing admixtures for COUNTY work.

E. The ENGINEER reserves the right to perform any or all of the tests required by ASTM C 260 and C 494 as a check on the tests reported by the manufacturer.

F. In case of any variance, the ENGINEER tests will govern.

## 2.07 APPROVAL

A. The ENGINEER shall approve all admixtures and dosage. Approval of admixtures shall be based on previous performance of the admixture.

B. The dosage will be determined from the manufacturer's recommendations, trial mixes or current job approved mix designs, if it is shown that no substantial change in any of the proposed ingredients has been made.

C. Should the CONTRACTOR desire to change the admixture or dosage approved during the progress of the work, the CONTRACTOR shall perform trial mixes at his own expense and submit the new mix design for approval.

# PART 3 - EXECUTION

## 3.01 CONSTRUCTION METHODS

A. No concrete shall be delivered to the project until the mix design is approved. All concrete delivered shall conform to the approved job mix formula. Unless otherwise indicated, all concrete shall be air entrained. All admixtures will be added at the Batch Plant. All admixtures shall be in the liquid state. No admixtures shall be dispensed on dry aggregates. Each admixture shall be dispensed separately, but at the same time as the mixing water.

B. An approved job mix formula for normal hot weather concreting may not perform satisfactorily for extended retardation, in which case its use will not be permitted.

C. The rotation of the mixer shall be sufficient to thoroughly mix the admixture into the concrete.

D. Admixtures shall be agitated as required to prevent separation or sedimentation of solids. Air agitation of Neutralized Vinsol Resin will not be permitted.

E. Normally air entraining agents shall be charged into the mixer at the beginning of

the batch and retarding or water reducing admixtures shall be charged into the mixer during the last part (approximately 1/3) of the batch when an air-entraining agent is used.

F. Accelerating admixtures will not be used only on the written approval of ENGINEER. Accelerating admixtures will not be permitted in bridge decks, direct traffic culvert slabs at any time nor when Type II cement is specified.

G. All admixtures shall be of the same brand from only one manufacturer for the entire project, unless otherwise approved by the ENGINEER.

H. Accelerators will be used only to meet special project requirements and will require the approval of the ENGINEER.

I. For individual placements of concrete of 25 cubic yards or more and for all ready-mix concrete, the admixture shall be measured and dispensed by a readily adjustable dispenser. When set to a predetermined volume, the dispenser shall fill to the preset amount and hold it positively without leakage until the operator releases the content into the mixing water by some positive means. Unless otherwise indicated, completely automatic dispensing will not be required, except for use with a full automatic plant.

J. The calibrated container shall be a measuring reservoir of the type where the level of the admixture is visible at all times. A strip gauge with one ounce increments for air entraining admixtures, ten ounce increments for dispersing admixtures, shall be attached securely to the measuring apparatus. This strip shall be a material possessing weather resistant qualities. The accuracy equipment shall visibly show the total amount to be dispensed for ready check by the ENGINEER.

K. When individual placements of less than 25 cubic yards and with the concrete batched on the job site, the ENGINEER may waive the requirements for mechanical dispensing equipment.

L. When high range water reducing admixtures are indicated the following will be observed:

1. Ready-mixed concrete shall be delivered in transit mixers and the capacity of the transit mixture shall be reduced for each bath by 25 percent of the rated capacity to assure proper mixing.

2. If during the placement of concrete, a change in slump resulting in a slump loss in excess of 3 inches is noted, the remaining concrete shall be rejected.

3. The addition of water will not be permitted at the job site.

4. Only one liquid admixture shall be used to achieve the desired results, except where air entrainment is indicated, the air entrainment agent will be permitted.

5. The concrete design shall meet the following requirements:

| ITEM | TEST | VALUE |
|---|---|---|
| Air entrainment | ASTM C 260 | 3 to 6 percent |
| High range water reducing Admixture | ASTM C 494 Type F or G | |
| Water cement ratio Gal/.Sack Max. | | 6.25 |
| Minimum cement content in Sacks (94 lb. sack) | | 6.0 |
| Coarse aggregate factor | | 6.5 |
| Slump Maximum, inches | | 10 |
| Flexural strength @ 7 days, psi | | 650 |
| Maximum concrete temperature F | | 100 |

## PART 4 - MEASUREMENT AND PAYMENT

**4.01** No additional compensation will be made for the materials, equipment test or methods required by this item, but shall be considered subsidiary to various items included in the contract.

*** * * END OF SECTION * * ***

# SECTION 03336

# DRIVEWAY REPAIRS

## 1.1. Description:

This item shall govern for driveways, with or without reinforcing steel, composed of portland cement concrete constructed on approved subgrade, foundation material or finished surface in accordance with the lines and grades established by the engineer and in conformance with details shown on the plans.

## 1.2. Materials:

Concrete shall be class “a” concrete meeting the requirement of the item “concrete for structures” or concrete as specified in the items of “concrete pavement” in TxDot 1982 specification.

Reinforcing steel, if required shall conform to the requirements of the item “reinforcing steel”.

## 1.3. Construction Methods:

The subgrade foundation, or pavement surface shall be shaped to lines, grades, and cross sections, hand tamped and sprinkled. If dry, the subgrade or foundation material shall be sprinkled lightly immediately before concrete is deposited thereon.

Outside forms shall be of wood or metal, of a section satisfactory to the engineer, straight, free of warp and of a depth equal to the depth required. They shall be securely staked to line and grade, and maintained in a true position during the depositing of concrete.

The reinforcing steel, if required, shall be placed in position as required by the plans. Care shall be exercised to keep all steel in its proper location.

After the concrete has been struck off and after it has become sufficiently set, the exposed surfaces shall be thoroughly worked with a wooden float.

Where driveway abut a curb or retaining wall, approved expansion material shall be placed along their entire length. Similar expansion material shall be placed around all obstruction protruding through driveways.

*** * * END OF SECTION * * ***

# SECTION 09100

# CONSTRUCTION TRAFFIC CONTROL

## PART 1 - GENERAL

### 1.01 GENERAL DESCRIPTION OF WORK:

A. This item shall consist of the construction, manipulation, maintenance and removal, if required, of detours of the length and to the lines, grades, and typical sections indicated and providing for installing, moving, replacing, maintaining, cleaning and removing upon completion of the work, as required, all detour markers, signs, barricades and other devices used in traffic control and handling at the construction site as indicated or as directed by the ENGINEER.

B. This item shall also consist of providing, installing, moving, replacing, maintaining, cleaning and removing temporary or permanent street closure barricades, signs or other devices required to handle the traffic in conformance with the current edition of the Texas Manual of Uniform Traffic Control Devices for Street and Highways and as indicated or directed by the ENGINEER.

## PART 2 - PRODUCTS

### 2.01 CONSTRUCTION TRAFFIC CONTROL SIGNS:

A. Construction traffic control signs shall conform to the provisions of Section 9000 except as noted in the plans or as directed by the ENGINEER.

B. Construction traffic control signs used herein shall be fabricated using sheeting conforming to the requirements of Table 9000-3.

C. The substrate for construction signs need only be sufficiently durable to last the life of the project and sufficiently rigid to hold the sheeting in a flat plane.

### 2.02 SIGN SUPPORTS:

A. Supports for construction traffic control signs shall be grade #2 fir or yellow pine, pressure treated with pentachlorophenol.

B. Supports shall have a minimum nominal size of 4-inches x 4-inches and conform to the details shown on the plans.

## 2.03 PORTABLE SIGN SUPPORT:

A. Materials for portable sign supports shall comply with the details shown on the plans. Portable sign supports other than those shown on the plans shall be submitted to the Project Manager for approval prior to use.

## 2.04 BARRICADES:

A. Barricades shall be classified as Type I, Type II, or Type III and shall comply with the details shown on the plans and the TMUTCD.

B. Barricade rails shall be fabricated using S4S grade #2 fir or yellow pine and reflectorized sheeting conforming to the requirements shown in Table 9000-3.

## 2.05 VERTICAL PANELS:

A. Materials for vertical panels shall conform to the details shown on the plans. Vertical panels shall be reflectorized with orange and white reflective sheeting or tape in accordance with the requirements of the TMUTCD and Table 9000-3.

## 2.06 CONSTRUCTION TRAFFIC MARKINGS:

A. Construction traffic markings shall comply with Section 9990 and the details shown in the plans.

## 2.07 ABBREVIATED PAVEMENT MARKINGS FOR CONSTRUCTION:

A. The pavement-marking material shall consist of an adhesive-backed reflective tape which can be applied to the pavement. Markings shall be of goof appearance, have straight, unbroken edges and have a color that complies with all federal regulations.

### 1. COLOR

a) The markings, as well as retroreflected light from the markings, shall be white or yellow as indicated.

### 2. VISIBILITY

a) The pavement markings (during daylight hours) shall be distinctively visible for a minimum of 300 feet unless sight distance is restricted by geometric roadway features.
b) The pavement markings (when illuminated by automobile low beam headlights at night) shall be distinctly visible for a minimum of 160 feet unless sight distance is restricted by geometric features.
c) The above day and night visibility requirements shall be met when viewed from an automobile traveling on the roadway.

## 2.08 CHANNELIZATION DEVICES:

### A. BARRELS

1. Barrels shall be of metal or nonmetal composition approved by the ENGINEER and of 30 to 55 gallon capacity. Only one size may be used on the project. The barrels shall be reflectorized with orange and white reflective sheeting or tape in accordance with the requirements of TMUTCD and Table 9000-3. The markings on the barrels shall be horizontal, circumferential, orange wide. There shall be a minimum of 55 alternating orange and white stripes on each barrel. Barrels shall also conform to the details shown on the plans.
2. Type "B" barrels shall be equipped with either Type "A" low intensity or Type "C" steady- burn warning lights complying with the provisions to TMUTCD and the ITE standard for flashing and steady-burn lights. The use warning lights shall be as directed by the ENGINEER.

### B. TRAFFIC CONES

1. Traffic cones shall conform to the details shown on the plans.

### C. TUBULAR TRAFFIC MARKERS

#### 1. POST

a) The post shall be of a thermoplastic or pliable elastomer composition meeting the manufacturer's requirements.
b) Dimensions:

Outside Diameter ..... 2.23 inches to 4 inches
Wall Thickness ..... 0.125 inch minimum
Length ..... 18 to 36 inches
Color ..... Orange

#### 2. BASE

a) The base shall be of a thermoplastic or pliable elastomer composition meeting the manufacturer's requirements.
b) Dimensions:

Height ..... 1/2 to 2 inches
Outside Diameter ..... 7 to 12 inches
Color ..... black or same color as post

#### 3. ASSEMBLY UNITS

a) Assembly units which are inherent with the particular marker shall be as per manufacturer's recommendations.

#### 4. ADHESIVES

a) Adhesive shall be epoxy type (permanent installation or butyl type (temporary installation) as per manufacturer's recommendations.

b) Other methods approved by the ENGINEER prior to initiating the work may be used; however, said approval does not abrogate the CONTRACTOR'S responsibility of effecting the temporary or permanent installation.

#### 5. REFLECTORIZATION

a) If used at night, tubular traffic markers shall have two 3-inch, circumferential reflective bands, no more than 2-inches from the top with no more than 6-inches separating the bands. Reflective material shall be SIA-250 or higher sheeting conforming to the provisions of Section 9000. The color of reflective material shall be as shown in the plans.

### 2.09 SEQUENTIAL ARROW DISPLAYS

A. Sequential arrow displays shall be sequentially lighted and roof or trailer mounted. The minimum panel size shall be 30-inches high an 54-inches wide. The display shall have 22 hooded sealed beam amber lamps rated at a maximum intensity of 8800 candlepower.

B. Light intensity shall be adjustable by dimmer switch. The operating modes shall be as follows:

1. Pass Left. 3 chevrons of 5 lamps each sequence in right to left pattern 40 to 50 times per minute.
2. Pass Right. 3 chevrons of 5 lamps each sequence in left to right pattern 40 to 50 times per minute.
3. Pass Either Side. The two outermost chevrons on each end of the panel pointing like arrowheads and flashing 40 to 50 times per minute with crossing row of lamps burning continuously.
4. Warning. 4 lamps, one at each corner of the panel, flashing 40 to 50 times per minute.

### 2.10 MATERIALS FOR CONSTRUCTION DETOURS

#### A. FLEXIBLE BASE

1. Flexible base shall conform to Section 2601.

**B. ASPHALT TREATED BASE**

1. Asphalt treated base shall conform to Section 2604.

**C. PRIME COAT**

1. Prime Coat shall conform to Section 2610.

**D. TACK COAT**

1. Tack Coat shall conform to Section 2620.

**E. SEAL COAT**

1. Seal Coat shall conform to Section 2617 or Section 2645.

**F. HOT MIX ASPHALTIC CONCRETE PAVEMENT**

1. Hot Mix shall be Type D conforming to Section 2612.

**G. SEEDING**

1. Seeding shall conform to Section 0000.

## PART 3 - EXECUTION

### 3.01 CONSTRUCTION TRAFFIC CONTROL SIGNS AND SIGN SUPPORTS:

A. Construction traffic control signs and sign supports shall be installed at locations noted on the plans in conformance with the TMUTCD or as directed by the ENGINEER.

### 3.02 PORTABLE SIGN SUPPORTS:

A. Portable sign supports for traffic control devices for detours shall be furnished by the CONTRACTOR, shall be installed at the locations shown on the plans, unless otherwise shown on the plans, and shall remain the property of the CONTRACTOR.

B. Unless otherwise specified, portable sign supports shall be of the dimensions shown on the plans.

### 3.03 BARRICADES:

A. Barricades shall be installed in conformity with the details noted on the plans or as directed by the ENGINEER.

## 3.04 VERTICAL PANELS:

A. Vertical panels shall be installed in conformity with the details noted on the plans or as directed by the ENGINEER.

## 3.05 CONSTRUCTION TRAFFIC MARKINGS:

A. Construction traffic markings shall be installed in conformity with Section 9990 and the details shown on the plans or as directed by the ENGINEER.

## 3.06 ABBREVIATED PAVEMENT MARKING FOR CONSTRUCTION:

A. Abbreviated markings meeting all specification requirements shall be in place on all roadways on which traffic is allowed and where suitable standard pavement marking is not in place. The transverse location of the line(s) formed by the markings shall be as determined by the ENGINEER.

B. Unless otherwise indicated, the abbreviated markings shall be placed as follows:

| Condition | Spacing | Length of Stripe |
|---|---|---|
| Straight | 40 feet approximately | 48 inch |
| Curve greater than 2 degrees | 20 feet maximum | 48 inch |
| Curve less than or equal 2 degrees | 40 feet maximum | 48 inch |

C. Pavement markings shall be a minimum of 3 7/8 inches wide. Length and spacing will be in accordance with these specifications.

D. The spacing of stripes may be modified by the ENGINEER. However, the maximum spacing specified above shall not be exceeded in any case.

E. The CONTRACTOR will be responsible for maintaining the abbreviated pavement markings until standard pavement markings are in place.

F. Abbreviated pavement markings shall be removed after all permanent markings have been place.

## 3.07 CHANNELIZATION DEVICES:

### A. TYPE "A" BARRELS

1. Type "A" barrels shall be used during daylight hours only and shall not be equipped with warning lights of any type.

**B. TYPE "B" BARRELS**

1. Type "B" barrels shall be equipped with warning lights. Type "B" barrels shall be used during nighttime hours only, unless otherwise shown on the plans or directed by the Project Manager.
2. The term "daylight hours" refers to those hours between dawn and dusk. The term "nighttime hours" refers to those hours between dusk and dawn.

**C. TRAFFIC CONES**

1. Traffic cones shall be installed in conformity with the plans and the TMUTCD or as directed by the ENGINEER.

**D. TUBULAR TRAFFIC MARKERS**

1. The metal, concrete, or bituminous surface where the tubular traffic markers are to be placed shall be thoroughly cleaned.
2. Metal and concrete surfaces shall be sandblasted or wire brushed. Bituminous surfaces shall be cleaned in accordance with manufacturer's recommendations.
3. All loose sand, dust and other deleterious debris from cleaned mounting surfaces shall be removed.
4. Tubular traffic markers shall be installed in conformity with details and at locations shown on the plans or as directed by the ENGINEER and in accordance with the manufacturer's recommendation.
5. In the event that removal of an installation (temporary or permanent) is effected and the metal, concrete, or bituminous surface is damaged the CONTRACTOR shall repair and otherwise restore said surface to its original condition at no additional cost to the County.
6. All defective post(s), base(s), assembly unit(s), adhesive(s), or reflective sheeting contributing to the detriment of the intended function of the tubular traffic markers shall be replaced by the CONTRACTOR at no additional cost to the COUNTY.

E. Channelization devices shall be and installed in accordance with the details shown on the plans, except that barrels shall be as noted herein.

**3.08 SEQUENTIAL ARROW DISPLAY:**

A. Sequential arrow displays shall be used according to the requirements shown on the plans and shown in TMUTCD.

**3.09 CONSTRUCTION DETOURS:**

A. The detours shall be constructed at the locations and to the lines and grades indicated and it shall be the entire responsibility of the CONTRACTOR to provide for the passage of traffic in comfort and safety without creating a dust problem.

## 3.10 CONSTRUCTION METHODS:

A. Prior to commencing construction, suitable "Construction Traffic Control" devices shall be installed to protect the workers and the public.

B. The CONTRACTOR shall be responsible for installing all markers, signs and barricades conforming to The Texas Manual on Uniform Traffic Control Devices and/or as indicated. If, in the opinion of the ENGINEER, additional markers, signs or barricades are needed in the interest of safety, the CONTRACTOR will install such as are required or as directed by the ENGINEER.

# PART 4 - MEASUREMENT AND PAYMENT

## 4.01 MEASUREMENT:

A. Measurement of various items described in this specification complete in place will be made as follows:

1. Construction traffic control sign assemblies, consisting of the applicable signage mounted on either sign supports or portable sign supports, shall be measured per each or lump sum.
2. Barricades shall be measured by the type per each.
3. Vertical panels shall be measured per each. Supports required for vertical panels will not be measured for payment but will be considered incidental to the completion of the work.
4. Construction traffic markings shall be measured per linear foot.
5. Abbreviated pavement markings for construction shall be measured per linear foot.
6. Channelization devices shall be measured per each for the category and type shown.
7. Sequential arrow display shall be measured per each.
8. Construction detours shall be measured per each or considered incidental to completion of construction.
9. Construction traffic control plan, consisting of any or all of the items described herein, shall be measured lump sum or incidental to completion of construction.

## 4.02 PAYMENT:

A. The accepted quantities of construction traffic control devices shall be paid at the contract unit bid price per the unit of measurement noted above.

B. Compensation will be for furnishing all materials, labor, equipment, tools and incidentals required for the work, all in accordance with the plans and these specifications.

*** * * END OF SECTION * * ***

## SECTION 30040

## BIAXIAL GEOGRID REINFORCEMENT SPECIFICATION

**DESCRIPTION** This item shall consist of furnishing, delivering and installing geogrid reinforcement.

**MATERIALS** The material shall be punched and drawn with a single layer grid structure formed by a regular network of integrally connected polymeric tensile elements with aperture designed to interlock with the surrounding fill material. The structure shall be capable of maintaining dimensional stability during placement and under normal construction traffic. The geogrid shall be resistant to damage during construction; including ultraviolet degradation and it shall have long term resistance to chemical and biological degradation caused by the material being reinforced.

The geogrid shall also conform to the properties specified below.

### STRUCTURAL GEOGRID PROPERTIES

| | | Values | |
|---|---|---|---|
| **Index Properties** | **Test Method** | **MD** | **XMD** |
| Aperture Dimensions | Direct Measurement | 1.0-1.5 in | 1.3-1.5in |
| Minimum Rib Thickness | Direct Measurement | 0.05 in | 0.05 in |
| Minimum Tensile Strength @ 2% Strain | ASTM D6637 | 410 lb/ft | 620 lb/ft |
| Minimum Tensile Strength @ 5% Strain | ASTM D6637 | 810 lb/ft | 1,340 lb/ft |
| Minimum Ultimate Tensile Strength | ASTM D6637 | 1,310 lb/ft | 1,970 lb/ft |

| **Structural Integrity** | **Test Method** | **Values** |
|---|---|---|
| Junction Efficiency | ASTM D7737 / GRI-GG2 | 93% |
| Minimum Flexural Stiffness | ASTM D7748 | 750,000 mg-cm |
| Aperture Stability | GRI-GG9 | 0.65 m-N/deg |

| **Durability** | **Test Method** | **Values** |
|---|---|---|
| Minimum Resistance to Installation Damage | ASTM D5818 (Sample)<br>ASTM D6637 (Load Cap.) | 95%SC / 93%SW / 90%GP |
| Resistance to Long Term Degradation | ASTM D6637 / EPA 9090 | 100% |
| Resistance to UV Degradation | ASTM D4355 / D6637 | 100% |

Alternate geogrid material will be considered. Such material must be pre-approved in writing by the Engineer prior to bid date. Alternate material packages must be submitted to the Engineer, a minimum of 15 calendar days prior to bid date. Submittal packages must include, as a minimum, the following:

A. Full scale laboratory testing and in ground testing of pavement structures reinforced with the specific geogrid which quantifies the structural contribution of the geogrid to the pavement structure. The increase in structural layer coefficient of the base course must meet or exceed that of the design geogrid.

B. Independent certified test results stating that the alternate geogrid has resistance to in-plane rotational movement measured by applying a 20 cm-kg (2 m-N) moment to the central junction of a 9 inch x 9 inch specimen restrained at its perimeter.

C. A list of 5 comparable projects, in terms of size and applications, in the United States, where the results of the specific alternate geogrid's use can be verified after a minimal of 1 year service.

D. A sample of the geogrid and certified specification sheets.

**CONSTRUCTION METHODS** Subgrade shall be prepared as indicated on the plans or as directed by the Engineer. The geogrid shall be installed in accordance with the lines and grades shown on the plans. The geogrid shall be oriented such that the roll lengths run parallel to the road direction. Geogrid sections shall be overlapped a minimum of one foot unless otherwise indicated on the plans or as directed by the Engineer. Care shall be taken to ensure the geogrid sections do not separate during construction; adjacent rolls shall be tied together every 30 feet using suitable plastic ties. Placement of geogrid around corners may require cutting and diagonal lapping. The geogrid shall be pinned, or held in place by other means, at the beginning of the backfill section but will be left free elsewhere to relieve wrinkles or folds in material during placement.

Fill material shall be placed in lift thicknesses and compacted as shown on the plans. Tracked construction equipment shall operate on the grid only with a minimum fill cover of four inches. Rubber tired equipment may operate directly on the grid at speeds less than 5 miles per hour if the underlying material is capable of supporting the loads. Sections of geogrid which are damaged by construction activity shall be repaired at the Contractor's expense.

**MEASUREMENT** This item will be measured by the square yard of surface area as shown on the plans. No measurement will be made for lapping of material.

**PAYMENT** The work performed and materials furnished, as prescribed by this item, measured as provided under "Measurement", will be paid for at the unit price bid for "Biaxial Geogrid Reinforcement", which shall be full compensation for furnishing all labor, materials, freight, tools, equipment and incidentals, and for doing all the work involved in placement of the geogrid, complete in place.

- *** * END OF SECTION * * ***

## SECTION ITEM 400

## EXCAVATION AND BACKFILL FOR STRUCTURES

**400.1. Description.** This Item shall govern for the excavation, bedding, backfill and/or portland cement stabilized backfill required for the construction of all structures, except drilled shafts. This Item shall also govern for any necessary sloping, pumping or bailing, for drainage, and for all sheeting and bracing of excavation walls up to five (5) feet in depth. Excavation greater than five (5) feet in depth shall be protected as specified in Item 402, "Trench Excavation Protection" or Item 403, "Temporary Special Shoring." Unless otherwise provided, the work included herein shall provide for the removal of old structures or portions thereof (abutments, wingwalls, piers, house foundations, old sewers, sewer appurtenances, etc.), trees and all other obstructions to the proposed construction, the blocking of the ends of abandoned sewers cut and left in place, and the protection of existing utilities. Also governed by this Item are the cutting and restoration of pavement and base courses, the construction and removal of any required cofferdams, the hauling and disposition of surplus materials and the bridging of trenches and other provisions for maintenance of traffic or access.

**400.2. Excavation.**

**(1) General.** Excavation shall conform to the lines and grades shown on the plans or as directed by the Engineer.

When trench and/or negative projecting conditions for concrete pipe culverts are required by design, an excavation diagram will be shown on the plans. These limits of excavation shall not be exceeded.

**(a) Disposal of Excavation.** All materials from excavation operations not required for backfilling and that are considered satisfactory, may be placed in embankment in accordance with Item 132, "Embankment." All excess material or material not satisfactory for use in embankment will become the property of the Contractor. All surplus material shall be removed from the work site promptly following the completion of the portion of the structure involved and disposed of in a manner satisfactory to the Engineer.

Whenever excavation is made for installing structures across private property or beyond the limits of the embankment, the top soil removed in the excavation shall be kept separate and replaced, as nearly as feasible, in its original position, and the entire area involved in the construction operations shall be restored to a condition acceptable to the Engineer.

**(b) Excavation in Streets.** Where structures are installed in streets, highways or other paved areas, the work shall include the cutting of pavement and base to neat lines and the restoration of pavement structure after structural excavation and backfill are completed. The type and thickness of replacement materials shall be as shown on the plans. Any work done or any damage to base and/or pavement incurred outside the limits shown on the plans or authorized by the Engineer, will not be measured for payment, but shall be restored at the Contractor's expense. Maintenance and control of traffic shall be in accordance with the approved traffic control plan and Manual on Uniform Traffic Control Devices.

**(c) Protection of Utilities.** The Contractor shall conduct his work with a minimum disturbance of existing utilities and it shall be his responsibility to coordinate all work in or

near the utilities with the utility owners. The Contractor shall inform utility owners sufficiently in advance of his operations to enable them to identify and locate, reroute, provide temporary detours, or to make other adjustments to utility lines in order that work may proceed with a minimum of delay. The Contractor shall cooperate with all utility owners concerned for any utility adjustments necessary.

Particular care shall be exercised to avoid the cutting or damaging of underground utility lines that are to remain in place. Such lines, if damaged shall be restored promptly and shall be handled in accordance with Article 7.11. When active sanitary sewer lines are cut during excavation operations, temporary flumes shall be provided across the excavation, while open, and the lines shall be restored when the backfilling has progressed to the original bedding lines of the cut sewer.

**(d) Removing Old Or Abandoned Structures.** When old or abandoned structures or foundations are encountered in the excavation, such obstructions shall be removed for the full width of the excavation and to a depth of one (1) foot below the bottom of the excavation. When old inlets or manholes are encountered and no plan provision is made for adjustment or connection to the new structures, such manholes and inlets shall be removed completely to a depth one (1) foot below the bottom of the excavation. In each instance, the bottom of the excavation shall be restored to grade by backfilling and compacting by the methods provided hereinafter for backfill. Where the excavation cuts through abandoned sewers, these sewers shall be removed as required to clear the new structure and plugged in a manner approved by the Engineer.

**(e) Dewatering Of Excavation Area.** Structures shall not be constructed or laid in the presence of water unless approved by the Engineer. Setting of precast members, placement of concrete, or pipe placing operations shall be performed on a dry firm bed. This shall be accomplished by removal of water from the surface of the bed by bailing, pumping, wellpoint installation, deep wells, french drains, or any other method approved by the Engineer.

For foundations placed in the presence of water, when approved by the Engineer, pumping or bailing from the interior of any foundation enclosure shall be done in a manner which precludes the possibility of movement of water through or alongside any concrete being placed. No pumping or bailing will be permitted during the placing of structural concrete, or for a period of at least 36 hours thereafter, unless from a suitable sump separated from the concrete work. Pumping or bailing during placement of seal concrete shall be only to the extent necessary to maintain a static head of water within the cofferdam. Pumping or bailing to dewater a sealed cofferdam shall not be started until the seal has aged at least 36 hours.

In the event that the excavation cannot be dewatered to the point where the subgrade is free of mud, or it is difficult to keep the reinforcing steel clean in cast-in-place structures, a special material shall be used in the bottom of the excavation. Such special material shall be a minimum depth of three (3) inches and shall consist of a lean concrete mixture (not less than three (3) sacks of cement per cubic yard), or other material approved by the Engineer.

**(f) Bridge Foundations and Retaining Walls.** To determine the adequacy of a proposed foundation, the Engineer may require the Contractor to make soundings or take cores to determine the character of the subgrade materials. The maximum depth of soundings or cores will not exceed five (5) feet below the proposed footing grade.

Care shall be taken not to disturb the material below the bottom of footing grade. Backfilling in a foundation to compensate for excavation which has extended below grade will not be permitted. Such areas below grade shall be filled with concrete at the time the footing is

placed. The additional concrete involved shall be at the Contractor's expense.

Unless otherwise required herein or on the plans, rock or other hard foundation material shall be free from all loose material, clean, and cut to a firm surface which may be level, stepped, or serrated, as directed by the Engineer. All seams shall be cleaned out and filled with concrete at the time the footing is placed.

When the material encountered at footing grade of a retaining wall, bridge bent or pier is found to be partially of rock or incompressible material and partially of a compressible material, the foundation shall not be placed until the Engineer has inspected the footing and authorized necessary changes to provide a uniform bearing condition.

**(g) Culverts.** For all single and multiple box culverts, pipe culverts, pipe arch culverts, long span structural plate structures, box sewers, and pipe sewers where the soil encountered at established footing grade is an unstable or incompressible material, the following procedure shall be used unless other methods are called for on the plans:

Unstable material shall be removed to a depth not to exceed two (2) feet below the footing of the structure unless additional depth is authorized by the Engineer. All soil removed shall be replaced with stable material in uniform layers not to exceed eight (8) inches in depth (loose measurement). Each layer shall have sufficient moisture to be compacted by rolling or tamping as required to provide a stable foundation for the structure.

When it is not feasible to construct a stable footing as outlined above, the Contractor shall use special materials, such as flexible base, cement stabilized base, cement stabilized backfill or other material, as directed by the Engineer. This work will be paid for as provided in Article 400.8. Special material used, or additional excavation made, for the Contractor's convenience to expedite the work, will be at the Contractor's expense.

When the material encountered at the footing grade of a structure is found to be rock, partially rock or other incompressible material, the incompressible material shall be removed to a depth of six (6) inches below the footing grade and backfilled with a compressible material approved by the Engineer and compacted in accordance with Article 400.5.

**(h) Trench.** Unless otherwise shown on the plans, all sewer pipe structures shall be constructed in an open cut with vertical sides to a point one (1) foot above the pipe. When site conditions or the plans do not prohibit the sloping of the cut, the excavation one (1) foot above the pipe may be stepped and/or the sides laid back to a stable slope. Required vertical sides shall be sheeted and braced when necessary to maintain the required vertical excavation throughout the construction period.

For all pipe sewers to be constructed in fill above natural ground, the embankment shall first be constructed to an elevation not less than one (1) foot above the top of the pipe, after which excavation for the pipe shall be made as noted above.

Unstable or incompressible material shall be removed in accordance with Subarticle 400.2.(3). For unstable trench conditions requiring outside forms, seals, sheeting and bracing, or where ground water is encountered, any additional excavation and backfill required shall be done at the Contractor's expense for trenches up to five (5) feet in depth.

**400.3. Cofferdams.** The term cofferdam designates any temporary or removable structure constructed to hold the surrounding earth, water, or both out of the excavation, whether the structure is formed of soil, timber, steel, concrete, or a combination of these. The "cofferdam" shall

also include the use of pumping wells or well points used for the same purpose. The cost of cofferdams shall be included in the price bid for excavation except where temporary special shoring is shown on the plans to provide excavation protection.

**400.4**

For sheet pile or other types of cofferdams which require internal bracing, the Contractor shall submit details and design calculations bearing the seal of a Registered Professional Engineer for review. The maximum stresses shall not exceed 125 percent of the working allowable stresses used by the Department for the design of structures. The interior dimensions of cofferdams shall provide sufficient clearance for the construction, inspection (inside and outside), and removal of any required forms and to permit pumping outside the forms. In general, sheet pile cofferdams shall extend well below the bottom of the footings and any concrete seal and shall be well braced and as watertight as practicable.

Concrete for foundation seals, unless otherwise specified shall be Class E concrete in accordance with Item 421, "Portland Cement Concrete." The concrete seal shall be placed in accordance with Item 420, "Concrete Structures." Seal concrete when authorized by the Engineer will be paid for as provided in the various bid items. If no direct method of payment is provided in the contract for seal concrete, the work will be measured and paid for in accordance with Article 4.3. Seal placed for the convenience of the Contractor will be at the Contractor's expense.

When the Engineer judges it to be impractical to dewater a cofferdam and a concrete seal is to be placed around piling driven therein, the excavation shall be deep enough to allow for swell of the material during pile driving operations. After driving the piling, all swelling material shall be removed to the bottom of the seal grade. Where it is possible to dewater the cofferdam without placing a seal, the foundation material shall be removed to exact footing grades after piling are driven. Backfilling a foundation to compensate for excavation which has been extended below grade will not be permitted. Such areas below grade shall be filled with concrete at the time the seals or footings are placed. The additional concrete quantities necessary to compensate for excavation below grade shall be at the Contractor's expense.

Unless otherwise provided, cofferdams shall be removed by the Contractor after the completion of the substructure without disturbing or damaging the structure.

**400.4. Shaping and Bedding.** For precast pipe and box sections, the excavation shall be undercut a minimum depth sufficient to accommodate the class of bedding indicated on the plans and conforming to the bedding requirements of this Item. Where cement stabilized backfill is indicated on the plans, the excavation shall be undercut a minimum of four (4) inches and backfilled with stabilized material to support the pipe at the required grade.

Three classes of bedding for trench or embankment conditions are shown in Figures 1, 2, and 3. Bedding shall be in accordance with Class C bedding unless otherwise shown on the plans. The Engineer may require the use of a template to secure reasonably accurate shaping of the foundation material.

**400.5. Backfill.**

**(1) General.** As soon as practical, all portions of the excavation not occupied by the permanent structure shall be backfilled. Backfill material may be obtained from excavation or from other sources. Backfill material shall be free from stones of such size as to interfere with compaction; free from large lumps which will not break down readily under compaction; and free from frozen lumps, wood, or other extraneous material.

Backfill which will not support any portion of the completed roadbed or embankment shall be placed in layers not more than 10 inches in depth (loose measurement). Backfill which will support any portion of the roadbed or embankment shall be placed in uniform layers not to exceed eight (8) inches in depth (loose measurement). Each layer of backfill shall be compacted to a density comparable with the adjacent undisturbed soil or as shown on the plans.

Each layer of backfill material, if dry, shall be wetted uniformly to the moisture content required to obtain a density comparable with the adjacent undisturbed soil or as shown on the plans and shall be compacted to that density by means of mechanical tamps or rammers. The use of rolling equipment of the type generally used in compacting embankments will be permitted on portions which are accessible to such equipment.

When tamping equipment is furnished which, when proven to the satisfaction of the Engineer, will adequately compact the backfill material to the density required, the eight (8) inch and 10 inch lifts (loose measurement) specified above may be increased to lifts not to exceed 12 inches.

Cohesion less materials, such as sand, may be used for general backfilling purposes. Compaction of cohesion less materials shall be done with vibratory equipment, water ponding or a combination thereof.

**(2) Bridge Foundations, Retaining Walls, And Culverts.** No backfill shall be placed against any structure until the concrete has reached the minimum flexural strength required in Item 421, "Portland Cement Concrete."

The material used for backfilling shall be free of any appreciable amount of gravel or stone particles more than four (4) inches in greatest dimension and shall be of a gradation that permits thorough compaction. The use of rock or gravel mixed with soil will be permitted, provided the percentage of fines is sufficient to fill all voids and insure a uniform and thoroughly compacted mass of proper density.

When the excavation has been made through a hard material resistant to erosion, the Engineer may require the backfill around piers and in front of abutments and wings to be of stone or lean concrete. Unless otherwise provided, such backfill will be measured and paid for as extra work in accordance with Article 4.3.

Embankment which is too close to a structure to permit compaction by the use of the blading and rolling equipment used on adjoining sections of embankment, shall be placed and compacted in accordance with Subarticle 400.5(1). Mechanical tamps or rammers shall be required when the structure being backfilled could sustain damage from other compacting operations.

Care shall be taken to prevent any wedging action of backfill against the structure, and the slopes bounding the excavation shall be stepped or serrated to prevent such action. Backfill placed around piers shall be deposited uniformly.

**(3) Pipe.** After the bedding and pipes have been installed as required, the selected backfill materials shall be brought to proper moisture condition, placed along both sides of the pipe equally, in uniform layers not exceeding eight (8) inches in depth (loose measurement), and each lift thoroughly compacted mechanically. Special care shall be taken to secure thorough compaction of the materials placed under the haunches of the pipe and to prevent damage

or displacement of the pipe. Filling and/or backfilling shall be continued in this manner to the elevation of the top of the pipe. Backfill above the top of the pipe shall be placed and compacted in accordance with Sub-article 400.5(1). During construction, protection of the pipe shall be in accordance with the pertinent pipe item. Pipe damaged by the Contractor during construction shall be replaced at the Contractor's expense or repaired to the satisfaction of the Engineer.

The Engineer may reject any material containing more than 20 percent by weight of material retained on a three (3) inch sieve, or material excavated in such a manner as to produce large lumps not easily broken down or which cannot be spread in loose layers. In general, material excavated by means of a trenching machine will meet the requirements above, provided large stones are not present.

Where sewers extend beyond the toe of slope of the embankment and the depth of cover provided by backfill to the original ground level is less than the minimum required by the specifications for the type of pipe involved, additional material shall be placed and compacted, as herein specified for backfill outside the limits of the roadbed, until this minimum cover has been provided.

**400.6. Cement Stabilized Backfill.** When shown on the plans, the excavation shall be backfilled to the elevations shown with cement stabilized backfill. Unless otherwise shown on the plans, cement stabilized backfill shall contain aggregate, water and a minimum of seven (7) percent portland cement based on the dry weight of the aggregate, in accordance with Test Method Tex-120-E. Aggregate shall be as shown on the plans or as approved by the Engineer.

Cement stabilized backfill below the top of sewers, manholes, inlets, or other structures shall be placed equally along all sides of the structure so as to prevent strain on or displacement of the structure. Cement stabilized backfill shall be placed in a manner that will completely fill all voids in the trench. Should compaction be required to fill all voids, hand operated tampers may be used.

**400.7. Measurement.** Excavation and backfill will be measured by the cubic yard. Cutting and restoring of pavement will be measured by the square yard.

This is a plans quantity measurement Item and the quantity to be paid for will be that quantity shown in the proposal and on the "Estimate and Quantity" sheet of the contract plans, except as may be modified by Article 9.8. If no adjustment of quantities is required, additional measurements or calculations will not be required.

Unless otherwise shown on the plans, structural excavation for pipe headwalls, inlets, manholes, culvert widening (extensions) 15 feet or less in length, bridge abutments, retaining walls and side road and private entrance pipe culverts will not be measured but shall be considered subsidiary to the various bid items.

For culvert widening (extensive) greater than 15 feet, quantities for structural excavation will be shown on the plans.

Structural excavation will be measured by the cubic yard computed by the method of average end areas using the following limits to establish templates for measurement:

(1) For all excavation requiring measurement, except that required for the barrels of pipe culverts; for structural plate structures no material outside of vertical planes one (1) foot

beyond the edges of the footings and parallel thereto will be included, unless otherwise shown on the plans. When the plans provide the Contractor the option of cast-in-place or precast boxes, measurement will be based on the cast-in-place option.

(2) For pipes 42 inches or less in nominal or equivalent diameter, no material outside of vertical planes one (1) foot beyond the horizontal projection of the outside surfaces of the pipe and parallel thereto will be included. For pipes more than 42 inches in nominal or equivalent diameter, no material outside of vertical planes located two (2) feet beyond the horizontal projection of the outside surfaces of the pipe and parallel thereto will be included. Excavation for pipes shall be measured between the extreme ends of the completed structure, including any end appurtenances, as shown on the plans and from centerline to centerline of inlets, manholes, etc., therein. When excavation for appurtenances is measured for payment, the limits of excavation for the pipes shall not overlap those of the appurtenances.

(3) For structural plate structures no material outside of vertical planes three (3) feet beyond the horizontal projection of the outside surfaces of the structure(s) and parallel thereto will be included. When the quality of the existing soil or embankment is less than that of the proposed backfill material, the excavation shall be extended for measurement to vertical planes located at one-half of the span beyond the horizontal projection of the outside surfaces of the structure(s) and parallel thereto.

(4) If a cofferdam is used, the limitations of Subarticle 400.7.(1) shall apply just as if no cofferdam were used. Excavation quantities for foundations shown on the plans and in the proposal where cofferdams are required shall be considered as final quantities and no further measurement will be made.

(5) Where excavation, in addition to that allowed for the footings, is required for other portions of the structure, such as for the cap, cross strut, or tie beam of a pier or bent or for the superstructure, measurement for such additional excavation will be limited laterally by vertical planes one (1) foot beyond the face of the member and parallel thereto and vertically to a depth of one (1) foot below the bottom of such member.

(6) No measurement will be made of any excavation necessary for placing forms or falsework except as allowed by the above conditions.

(7) At all structure sites except at culverts and trench excavations, the measurement of structural excavation will include only material below or outside the limits of the completed road or channel excavation.

Trench excavation in fill above natural ground, as specified in Subarticle 400.2.(4), will be measured for payment. Quantities will include that area as specified in Subarticle 400.7.(2) plus one (1) foot above the top of the pipe, regardless of the height of fill previously made.

(8) Excavation required for shaping the slopes of header banks which were built by prior contract and upon which riprap is to be placed will be measured as "Structural Excavation, (Riprap)."

(9) For all culverts, except for side road and private entrance culverts, all excavation within the limits of the structure and below or outside the limits of the completed roadway excavation, will be measured as culvert excavation. Where the overall normal width of the culvert is 12 feet or less, measurement will be as "Structural Excavation, Culvert, Small." Where the overall normal width of the culvert exceeds 12 feet, measurement will be as

"Structural Excavation, Culvert, Large."

(10) Where excavation diagrams are shown on the plans, they shall take precedence over these provisions.

(11) Measurement will not include materials removed below footing grades to compensate for anticipated swelling due to pile driving, nor will it include material required to be removed due to swelling beyond the specified limits during pile driving operations.

(12) Measurement will not include additional volume caused by slips, slides, cave-ins, silting, or fill material resulting from the action of the elements or the Contractor's operation.

(13) Where rock, or other incompressible or unstable material is undercut to provide a suitable foundation for pipe or box sections, such material below grade, which is directed by the Engineer to be removed, will be measured for payment.

(14) No allowance will be made for any variance from plan quantity incurred by an alternate bid.

(15) Additional measurement will be made of the volume of excavation involved in the lowering or raising of the elevation of a footing, foundation, or structure unit, when such grade change is authorized by the Engineer.

(16) Cement stabilized backfill will be measured in accordance with the backfill diagram shown on the plans. The quantity of "Cement Stabilized Backfill" shown on the plans shall be considered as final quantities and no further measurement will be required. Changes in alignment or grade as authorized by the Engineer will be measured for payment.

(17) The work to be done in the cutting and restoring of pavement will be measured in accordance with the dimensions shown on the plans. The excavation below the pavement and/or base shall be measured as structural excavation of the pertinent type.

**400.8. Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Structural Excavation," "Structural Excavation (Bridge)," "Structural Excavation (Culvert, Small)," "Structural Excavation (Culvert, Large)," "Structural Excavation (Trench)," "Structural Excavation (Riprap)," "Cement Stabilized Backfill" and "Cutting and Restoring Pavement."

Payment for removal and replacement of unstable or incompressible material below the footing grades of culverts as provided for in Subarticle 400.2.(3) will be made as follows:

When the plans specify or when the Engineer directs the use of special materials such as flexible base, cement stabilized base, cement stabilized backfill or other special material, payment for excavation below the footing grades shall be made at the unit price bid for "Structural Excavation" of the pertinent type. Payment for furnishing, hauling, placing and compacting the flexible base, cement stabilized base, cement stabilized backfill or other special materials will be made at the unit price bid for these items in the contract or in accordance with Article 4.3. in cases where the required material is not a bid item.

Where special materials are not required or specified, payment for the removal and replacement of unstable and/or incompressible material will be made at a price equal to 200 percent of the unit price bid per cubic yard for "Structural Excavation" of the pertinent type.

This price shall be full compensation for removing the unstable or incompressible material, furnishing, hauling, placing and compacting suitable replacement material and for all labor, equipment, tools, and incidentals necessary to complete the work.

If no direct method of payment is provided in the contract for culvert excavation and no special materials are required or specified, the removal and replacement of unstable or incompressible material, when such work is authorized by the Engineer, will be measured and paid for at fifteen dollars ($15.00) per cubic yard.

Should the Engineer deem it necessary to lower a bridge foundation to an elevation below the grade shown on the plans, such over excavation below plan will be paid for as "Structural Excavation" at an adjusted unit price as defined herein. Payment will be made at a unit price equal to 115 percent of the contract unit price bid for all over excavation where the revised footing grade does not vary from plan grade by more than five (5) feet.

Payment will be made at a unit price of 125 percent of the contract unit price bid for all over excavation where the revised grade varies from plan grade by more than five (5) feet but not in excess of 10 feet. In cases where the revised footing grade varies from plan grade by more than 10 feet, a supplemental agreement shall be prepared to establish a unit price with which to make payment for the over excavation.

No direct payment will be made for backfilling around structures. Payment for the backfilling and compacting of areas which were removed as structural excavation shall be included in the unit price bid for "Structural Excavation."

Unless otherwise shown on the plans, structural excavation which has been completed to the satisfaction of the Engineer, but not backfilled, a partial payment of 50 percent of the price bid will be made. The remaining amount will be paid upon the satisfactory completion of the backfilling.

This price shall be full compensation for all excavation, bedding, and backfill including placing, sprinkling and compaction of material; all soundings; cleaning and filling seams; constructing all cofferdams; all dewatering; and for furnishing all materials, hauling, labor, equipment, tools, sheeting and/or bracing of excavations up to and including five (5) feet in depth, pumps, drills, explosives, disposition of surplus material, cutting pavement and base to neat lines; and for incidentals necessary to complete the work, except that protection methods for excavations greater than five (5) feet in depth shall be measured and paid for as required under Item 402, "Trench Excavation Protection" or Item 403, "Temporary Special Shoring."

*** * * END OF SECTION * * ***

## SECTION ITEM 420

## CONCRETE STRUCTURES

**420.1. Description.** This Item shall govern for the construction of all types of structures involving the use of cast-in-place concrete. All structures shall be constructed in accordance with the details shown on the plans and this Item.

**420.2. Materials.**

**(1) Concrete.** All concrete shall conform to the provisions of Item 421, "Portland Cement Concrete".

The class of concrete for each type of structure or unit shall be as shown on the plans, or by pertinent governing specifications.

**(2) Reinforcing Steel.** All reinforcing steel shall conform to the provisions of Item 440, "Reinforcing Steel".

**(3) Expansion Joint Material.** The following materials shall conform to the requirements of Item 433, "Joint Sealants and Fillers".

**(a) Preformed Fiber Material.** Preformed fiber expansion joint material shall conform to the dimensions shown on the plans. Unless otherwise specified, "Preformed Bituminous Fiber Material" shall be used.

**(b) Joint Sealing Material.** Unless shown otherwise, the sealer shall be a "Low Modulus Silicone Sealant".

**(c) Asphalt Board.** Asphalt board shall conform to the dimensions shown on the plans.

**(d) Rebonded Neoprene Filler**. Rebonded neoprene filler shall conform to the dimensions shown on the plans.

**(4) Waterstop.**

(a) Rubber waterstop or polyvinyl chloride (PVC) waterstop shall be in conformance with Item 435, "Elastomeric Materials".

(b) Other types shall be as shown on the plans.

**(5) Curing Materials.**

(a) Membrane curing shall conform to Item 526, "Membrane Curing".

(b) Cotton mats shall consist of a filling material of cotton "bat" or "bats" (min. 12 oz. per sq. yd.); covered with un-sized cloth (min. six (6) oz. per sq. yd.); tufted or stitched to maintain stability; shall be free from tears; and shall be in good general condition.

(c) Polyethylene sheeting shall be four (4) mil. minimum thickness and free from visible defects. It shall be clear or opaque white except when the temperature during the curing period does not exceed 60 F or when applicable to control temperature during mass pours.

(d) Burlap-polyethylene mats shall be made from burlap impregnated on one side with a film of opaque white pigmented polyethylene and free from visible defects.

(e) Laminated mats shall have not less than one (1) layer of an impervious material such as polyethylene, vinyl plastic or other acceptable material (either as a solid sheet or impregnated into another fabric) and shall be free of visible defects.

**(6) Admixtures.** Concrete admixtures shall comply with the requirements of Item 437, "Concrete Admixtures".

**(7) Epoxy.** Unless otherwise specified, epoxy materials shall conform to Item 575, "Epoxy".

**(8) Latex Emulsions.** Latex emulsion used for latex based grout/mortar, latex adhesive grout/mortar or other purposes shall conform to Departmental Materials Specification D9-8110.

**420.3. General Requirements.** Before starting work, the Contractor shall inform the Engineer fully of the construction methods he proposes to use, the adequacy of which shall be subject to the approval of the Engineer.

Concurrence on the part of the Engineer of any proposed construction methods, approval of equipment, or of form and falsework plans does not relieve the Contractor of the responsibility for the safety or correctness of the methods, the adequacy of his equipment or from carrying out the work in full accordance with the contract.

Plans for forms and falsework for piers, superstructure spans over 20 feet long and for all bridge widening details shall be submitted to the Engineer for review. Similar plans shall be submitted for other units of the structure, if requested by the Engineer. The plans shall be prepared on standard 22 inch by 34 inch sheets and shall show all essential details of the proposed forms, falsework and bracing to permit a structural analysis. Four (4) sets of such plans will be required. One (1) set of design calculations shall accompany the submission of such plans. Plans, forms and falsework shall be designed, sealed, and signed by a professional engineer.

Forms or screed supports may be attached to I-beams or girders by welding, subject to the following requirements:

(1) Welds will not be permitted on tension flanges and in those areas shown on the plans or as directed by the Engineer.
(2) Welds shall be made in accordance with Item 448, "Structural Field Welding".

Unless otherwise shown on the plans, the time sequence in which construction operations may be carried on and in which completed structures may be opened to traffic shall be governed by the following:

(1) Superstructure members, forms, falsework, or erection equipment shall not be placed on the substructure before the concrete therein has attained a flexural strength of 425 psi.

(2) Storage of materials on completed portions of a structure will not be permitted until all curing requirements for those particular portions have been met.

(3) A minimum flexural strength of 340 psi will be required for the following:

(a) Forms erected on concrete footings supported by piling or drilled shafts.

(b) Forms on individual drilled shafts.

Such work may begin on spread footings and culvert footings, after the concrete therein has aged at least two (2) curing days. Concrete may be placed as soon as the forms and reinforcing steel are approved.

(4) The support of tie beam and/or cap forms by falsework placed on previously placed tie beams will be permissible provided such beams have attained 425 psi flexural strength, curing requirements are completed, and the member is properly supported to eliminate stresses not provided for in the design.

(5) Bridges and direct traffic culverts shall not be opened to construction traffic or to the traveling public until authorized by the Engineer in accordance with the following:

After the last slab concrete has been in place at least 14 days, authorization may be given for construction traffic on structures not to exceed three-quarter ton vehicles.

After the last slab concrete has been in place at least 21 days, authorization may be given for other construction traffic, or for the traveling public when necessary. Vehicles exceeding the legal load limit will be allowed in accordance with Item 6, "Control of Materials".

(6) Box culverts in fills may be opened to backfilling and compaction equipment when the concrete in the top slab has attained 425 psi flexural strength, and may be opened to other traffic as soon as sufficient backfill and/or embankment has been placed over the top to protect the culverts against damage from heavy construction equipment. The Contractor shall repair, at his expense, any damage inflicted on the culvert by construction traffic.

**420.4. Drains.** Weep holes and roadway drains shall be installed and constructed as shown on the plans.

**420.5. Expansion Joints.** Joints and devices to provide for expansion and contraction shall be

constructed in accordance with plan details and the requirements of this Item.

The bearing area under the expansion ends of concrete slabs and slab and girder spans shall be given a steel trowel finish, and finished to the exact grades required.

Bridging of concrete or mortar around expansion joint material in bearings and expansion joints shall be prevented.

All open joints and joints to be filled with expansion joint material shall be constructed using forms adaptable to loosening or early removal. To avoid expansion or contraction damage to the adjacent concrete, these forms shall be loosened as soon as possible after final concrete set to permit free movement of the span without requiring full form removal.

When a "Type A" joint is shown on the plans, preformed fiber joint material shall be used in the vertical joints of the roadway slab, curb, median or sidewalk and the top one (1) inch thereof shall be filled with the joint sealing material shown herein or shown on the plans.

The sealer shall be installed in accordance with Item 438, "Cleaning and/or Sealing Joints and Cracks (Portland Cement Concrete)", and the manufacturer's recommendations.

Where preformed fiber joint material is used, it shall be anchored to the concrete on one (1) side of the joint by light wire or nails.

Finished joints shall conform to the plan details with the concrete sections completely separated by the specified opening or joint material.

Soon after form removal and again where necessary after surface finishing, all concrete shall be removed from within the joint opening to insure full effectiveness of the expansion joint.

**420.6. Construction Joints.** The joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set shall be deemed a construction joint. The term monolithic placement shall be interpreted to mean that the manner and sequence of concrete placing shall not create a construction joint.

Construction joints shall be of the type and at the locations shown on the plans. Construction joints other than those shown on the plans will not be permitted in bridge slabs. Additional joints in other members will not be permitted without written authorization from the Engineer. When additional joints are authorized, they shall have details equivalent to those shown on the plans for joints in similar locations.

Unless otherwise provided, construction joints shall be square and normal to the forms. Bulkheads shall be provided in the forms for all vertical joints.

Construction joints requiring the use of joint sealing material shall be as shown on the plans.
A concrete placement terminating at a horizontal construction joint shall have the top surface roughened thoroughly as soon as practicable after initial set is attained.

The hardened concrete surface shall be thoroughly cleaned of all loose material, laitance, dirt or foreign matter and saturated with water. All freewater shall be removed and the surface shall be in a moist condition when concrete and/or bonding grout is placed against it.

Forms shall be drawn tight against the existing concrete to avoid mortar loss and offsets at joints.

When shown on the plans or in other specifications, the joint surface shall be coated with bonding mortar, grout, or other specified material.

When shown on the plans, Type V epoxy material shall be used for bonding fresh concrete to hardened concrete. The bonding epoxy shall be placed on a clean, dry surface and shall be tacky when the fresh concrete is placed.

**420.7. Seal for Foundations.** Concrete for foundation seals, unless otherwise specified, shall be in accordance with Item 400, "Excavation and Backfill for Structures".

**420.8. Falsework.** Falsework shall be designed and constructed to safely carry the maximum anticipated loads, including wind loads, and to provide the necessary rigidity. Details of falsework construction shall be subject to review and approval by the Engineer in accordance with the provisions of Article 420.3.

For evaluating the adequacy of job fabricated falsework, a weight of 150 pounds per cubic foot shall be assumed for concrete, and a live load allowance of 50 pounds per square foot of horizontal surface of the form work shall be included. The maximum stresses shall not exceed 125 percent of the allowable stresses used by the Department for the design of structures.

Commercially produced structural units used in falsework shall not exceed the manufacturer's maximum allowable working load for moment, and shear or end reaction. The maximum allowable working load shall include an allowance of 35 pounds per square foot of horizontal form surface and sufficient details and data shall be submitted to the Engineer for approval.

All timber used in falsework shall be sound, in good condition, and free from defects which would impair its strength.

When wedges are used to adjust falsework to desired elevations, the wedges shall be used in pairs to insure even bearing. The use of wedges to compensate for incorrectly cut bearing surfaces will not be permitted. Wedges shall be hardwood or metal.

Sills or grillages shall be large enough to support the superimposed load without settlement, and unless founded on solid rock, shale or other hard materials, precautions shall be taken to prevent yielding of the supporting material.

Falsework which cannot be founded on a satisfactory spread footing shall be placed on piling or drilled shafts having a bearing capacity sufficient to support the superimposed load without settlement. Falsework piling shall be driven to the required resistance determined by the

applicable formula given in Item 404, "Driving Piling". Drilled shafts for falsework shall be designed to carry the superimposed load using both skin friction and point bearing.

Welding, when used, shall conform to the requirements of Item 448, "Structural Field Welding". Each falsework bent shall be securely braced to provide the stiffness required with the bracing securely fastened to each pile or column it crosses.

The falsework shall be removed when no longer required. Falsework piling shall be pulled or cut off not less than six (6) inches below finished ground level. Falsework, piling or drilled shafts in a stream, lake, or bay shall be completely removed to a point specified by the Engineer to prevent any obstruction to the waterway.

**420.9. Forms.** All forms shall be constructed in accordance with the following:

**(1) General.** Except where otherwise specified, forms may be of either timber or metal.

Forms for round columns exposed to view shall be of steel, except that other materials will be allowed with written permission of the Engineer.

Studs, joists, wales or other devices used for form supports shall be of sufficient section and rigidity to withstand undue bulging or settling of the forms. Any device or method used for form support shall be subject to the approval of the Engineer.

Forms shall be designed for the pressure exerted by a liquid weighing 150 pounds per cubic foot. The rate of placing the concrete shall be taken into consideration in determining the depth of the equivalent liquid. Job fabricated forms shall be designed for an additional live load of 50 pounds per square foot of horizontal surface. The maximum unit stresses shall not exceed 125 percent of the allowable stresses used by the Department for the design of structures.

Commercially produced structural units used in form work shall not exceed the manufacturer's maximum allowable working load for moment, shear or end reaction. The maximum working load shall include a live load of 35 pounds per square foot of horizontal form surface and sufficient details and data shall be submitted to the Engineer for review.

Forms shall be practically mortar-tight, rigidly braced and strong enough to prevent bulging between supports and shall be maintained to the proper line and grade during concrete placement. Forms shall be maintained in a manner to prevent warping and shrinkage.

Offsets at form joints shall not exceed 1/16 inch. Form supports for slabs shall not be welded to the top flange of I-beams or girders except in accordance with the provisions of Article 420.3.

Deflections due to cast-in-place slab concrete and railing shown in the dead load deflection diagram shall be taken into account in the setting of slab forms.

All forms and footing areas shall be cleaned of any extraneous matter before placing concrete. Permission to place concrete will not be given until all preparatory work is complete to the

satisfaction of the Engineer.

If, at any stage of placement, the forms show signs of bulging or sagging, the portion of the concrete causing such condition shall be removed immediately, if necessary, and the forms shall be reset and securely braced against further movement.

**(2) Timber Forms.** Lumber for forms shall be properly seasoned, of good quality, and free from imperfections which would affect its strength or impair the finished surface of the concrete.

Forms or form lumber to be reused shall be maintained clean and in good condition. Any lumber which is split, warped, bulged, marred or has defects that will produce inferior work shall not be used and shall be promptly removed from the work.

Form lining will be required for all formed surfaces, except for the inside of culvert barrels, inlets, manholes and box girders; the bottom of bridge decks between beams or girders; surfaces that are subsequently covered by backfill material or are completely enclosed; and, any surface formed by a single finished board. Lining will not be required when plywood forms are used.

Form lining shall be of an approved type such as masonite or plywood. Thin membrane sheeting such as polyethylene sheets shall not be used for form lining.

Commercial form liners used to imprint a pattern or texture on the surface of the concrete shall be as shown on the plans and/or as approved by the Engineer.

Forms may be constructed of plywood not less than 1/2 inch in thickness. The grain of the face plies on plywood forms shall be placed parallel to the span between the supporting studs or joists.

Plywood used for forming surfaces which remain exposed shall be equal to that specified as B-B Plyform Class I or Class II Exterior of the U.S. Department of Commerce, National Institute of Standards and Technology, U.S. Product Standard, latest edition.

Studs and joists shall be spaced so that the facing form material remains in true alignment under the imposed loads.

Wales shall be spaced close enough to hold forms securely to the designated lines and scabbed at least four (4) feet on each side of joints to provide continuity. A row of wales shall be placed near the bottom of each placement.

Facing material shall be placed with parallel and square joints and securely fastened to supporting studs.

Forms for surfaces receiving only an ordinary finish and exposed to view shall be placed with the form panels symmetrical, i.e., long dimensions set in the same direction. Horizontal joints shall be continuous.

Molding for chamfer strips or other uses shall be made of materials of a grade that will not split

when nailed and which can be maintained to a true line without warping. Wood molding shall be mill cut and dressed on all faces. Unless otherwise provided herein or shown on the plans, forms shall be filleted at all sharp corners and edges with triangular chamfer strips measuring 3/4 inch on the sides.

Except at structures where railing is to be attached, culvert headwall heights shall be adjusted as necessary to provide a maximum projection of three (3) inches above the roadway slope unless otherwise directed by the Engineer. At the entrance of all box culverts, a three (3) inch chamfer shall be provided along the bottom edge of the top slab. Reinforcing steel shall be adjusted as necessary to provide a minimum 1 1/4 inch clear cover. No changes will be made in quantities and no additional compensation will be allowed for this work.

All forms shall be constructed to permit their removal without marring or damaging the concrete. The forms may be given a slight draft to permit ease of removal.

Metal form ties of an approved type or a satisfactory substitute shall be used to hold forms in place and shall be of a type that permits ease of removal of the metal as hereinafter specified.

All metal appliances used inside of forms for alignment purposes shall be removed to a depth of at least 1/2 inch from the concrete surface. The appliances shall be made so the metal may be removed without undue chipping or spalling of the concrete, and when removed, shall leave a smooth opening in the concrete surface. Burning off of rods, bolts or ties will not be permitted.

Any wire ties used shall be cut back at least 1/2 inch from the face of the concrete.

Devices holding metal ties in place shall be capable of developing the strength of the tie and adjustable to allow for proper alignment.

Metal and wooden spreaders which are separate from the forms shall be removed entirely as the concrete is being placed.

Adequate clean-out openings shall be provided for narrow walls and other locations where access to the bottom of the forms is not readily attainable.

The facing of all forms shall be treated with bond breaking coating of such composition that would not discolor or otherwise injuriously affect the concrete surface. Care shall be exercised to prevent coating of the reinforcing steel.

**(3) Metal Forms.** The foregoing requirements for timber forms regarding design, mortar-tightness, filleted corners, beveled projections, bracing, alignment, removal, reuse and wetting shall also apply to metal forms, except that these will not require lining, unless specifically noted on the plans.

The thickness of form metal shall be as required to maintain the true shape without warping or bulging. All bolt and rivet heads on the facing sides shall be countersunk. Clamps, pins or other connecting devices shall be designed to hold the forms rigidly together and to allow removal without injury to the concrete. Metal forms which do not present a smooth surface or which line up

improperly shall not be used. Metal shall be kept free from rust, grease or other foreign materials.

**(4) Form Supports for Overhang Slabs.** Form supports which transmit a horizontal force to a steel girder or beam, or to a pre-stressed concrete beam will be permitted, providing a satisfactory structural analysis has been made of the effect on the girder or beam and approval is granted by the Engineer.

When overhang brackets are used on pre-stressed concrete beam spans with slab overhangs not exceeding three (3) feet six (6) inches, bracing requirements shall conform to the details shown on the plans.

For spans in which the overhang exceeds three (3) feet six (6) inches, additional support will be required for the outside beams regardless of the type beam used. Details of the proposed support system shall be submitted by the Contractor for approval.

Holes in steel members for support of overhang brackets may be punched or drilled full size or may be torch cut to 1/4 inch under size and reamed full size. In no case shall the holes be burned full size. The hole shall be left open unless otherwise shown on the plans. The holes shall never be filled by welding.

**420.10. Placing Reinforcement.** Reinforcement shall be placed as provided in Item 440, "Reinforcing Steel". Reinforcing steel supports shall not be welded to I-beams or girders or to reinforcing steel except where shown on the plans to be permissible.

Post tensioning ducts shall be placed in accordance with the approved pre-stressing details, and in accordance with Item 426, "Pre-stressing". The Contractor shall maintain all ducts free of obstructions until all post tensioning operations are complete.

**420.11. Placing Concrete-General.** The Contractor shall give the Engineer sufficient advance notice before placing concrete in any unit of the structure to permit the inspection of forms, reinforcing steel placement and other preparations.

The sequence of placing concrete shall be as shown on the plans or as required herein.

Concrete placement will not be permitted when impending weather conditions would impair the quality of the finished work. If conditions of wind, humidity, and temperature are such that concrete cannot be placed without cracking, concrete placement shall be done in the early morning or at night. When concrete mixing, placing, and finishing is done in other than daylight hours, provisions shall be made to adequately light the entire placement site. The Engineer will approve the adequacy of such lighting before operations are begun.

Where work has been started and changes in weather conditions require protective measures, the Contractor shall furnish adequate shelter to protect the concrete against damage from rainfall, or from freezing temperatures as outlined in Article 420.12. If necessary to continue operations during rainfall, the Contractor shall also provide protective coverings for the material stockpiles. Aggregate stockpiles need to be covered only to the extent necessary to control the moisture

conditions in the aggregates.

After concrete has achieved initial set, at least one (1) curing day shall elapse before placing strain on projecting reinforcement in order to prevent damage to the concrete.

**(1) Placing Temperature.** The temperature of all concrete at the time of placement shall be not less than 50 F.

The temperature of cast-in-place concrete in bridge slabs and top slabs of direct traffic structures shall not exceed 85 F when placed. Concrete diaframs, parapets, concrete portions of railing, curbs, and sidewalks, unless monolithically placed with the slab, will not be subject to the above maximum. Other portions of structures, when shown on the plans, shall require the temperature control specified.

For mass concrete placements, as defined in Subarticle 420.11 (10), the concrete temperature at the time of placement shall not exceed 75 F.

**(2) Transporting Time.** The maximum time interval between the addition of cement to the batch and the placing of concrete in the forms shall conform to the requirements in Table 1.

**Table 1**
**Temperature-Time Requirements**

| Concrete Temp (at point of placement) | Max Time (No Retarding Agent) Minutes | Max Time(1) (With Retarding Agent) Minutes |
|---|---|---|
| | Non-Agitated Concrete | |
| Above 80 F | | 30 |
| 80 F and Below | 15 | 45 |
| | 30 | |
| | Agitated Concrete | |
| Above 90 F | | 75 |
| Above 75 F thru | | 90 |
| 90 F | 45 | 120 |
| 75 F and Below | 60 | |
| | 90 | |

(1) Normal dosage of retarder

**(3) Transporting Equipment.** The method and equipment used to transport concrete to the forms shall be capable of maintaining the rate of placement shown on the plans or required by the Engineer. Concrete may be transported by buckets, chutes, buggies, belt conveyors, pumps or

other methods.

When belt conveyors or pumps are used, sampling for testing should be done at the discharge end. When in the opinion of the Engineer, it is deemed impractical to sample at the discharge end, sampling may be done at the mixer provided that correlation testing is performed and documented to ensure specification requirements are met at the discharge end.

Concrete transported by conveyors shall be protected from sun and wind, if necessary, to prevent loss of slump and workability. Pipes through which concrete is pumped shall be shaded and/or wrapped with wet burlap, if necessary, to prevent loss of slump and workability. Concrete shall not be transported through aluminum pipes, tubes, or other aluminum equipment.

Pump lines shall conform to the following:

For Grade 2 coarse aggregate and smaller, the minimum size pump line shall be five (5) inches ID.

For Grade 1 coarse aggregate, the minimum size pump line shall be eight (8) inches ID.

Chutes, troughs, conveyors or pipes shall be arranged and used so that the concrete ingredients will not be separated. When necessary to prevent segregation, such equipment shall terminate in vertical down-spouts. Open troughs and chutes shall extend, if necessary, down inside the forms or through holes left in the forms.

All transporting equipment shall be kept clean and free from hardened concrete coatings. Water used for cleaning shall be discharged clear of the concrete.

**(4) Forms.** Openings in forms shall be provided, if needed, for the removal of laitance or foreign matter.

All forms, pre-stressed concrete panels, T-beams, and concrete box beams on which concrete is to be placed shall be wetted thoroughly prior to placing concrete thereon. Any remaining puddles of excess water shall be removed. The top of such members shall be in a moist surface dry condition when concrete is placed on them.

**(5) Handling, Placing, and Consolidation.** The method of handling, placing, and consolidation of concrete shall minimize segregation of the concrete and displacement of the reinforcement. A uniform dense compact mass shall be produced.

> **(a) Handling and Placing.** Concrete shall not have a free fall of more than five (5) feet, except in the case of thin walls such as in culverts or as specified in other items. Any hardened concrete splatter ahead of the plastic concrete shall be removed.
>
> Each part of the forms shall be filled by depositing concrete as near its final position as possible. Depositing large quantities at one point and running or working the concrete along the forms will not be allowed.

Concrete shall be deposited in the forms in layers of suitable depth but not more than 36 inches in thickness, unless otherwise directed by the Engineer.

Cold joints in a monolithic placement shall be avoided. The sequence of successive layers or adjacent portions of concrete shall be such that they can be vibrated into a homogeneous mass with the previously placed concrete. Not more than one (1) hour shall elapse between adjacent or successive placements of concrete, except as otherwise required by an approved placing procedure when revibration of the concrete is shown on the plans or specifications. This time requirement may be extended by 1/2 hour when the concrete contains not less than a normal dosage of retarding admixture.

An approved retarding agent shall be used to control stress cracks and/or cold joints in placements where differential settlement and/or setting time may induce stress cracking.

**(b) Consolidation.** All concrete shall be well consolidated and the mortar flushed to the form surfaces with immersion type vibrators. Vibrators which operate by attachment to forms or reinforcement will not be permitted, except on steel forms. At least one (1) stand-by vibrator shall be provided for emergency use in addition to those required for placement.

The concrete shall be vibrated immediately after deposit. A systematic spacing of the points of vibration shall be established to insure complete consolidation and thorough working of the concrete around the reinforcement, embedded fixtures, and into the corners and angles of the forms. The vibrator may be inserted in a sloping or horizontal position in shallow slabs. The entire depth of each lift shall be vibrated, allowing the vibrator to penetrate several inches into the preceding lift. Concrete along construction joints shall be thoroughly consolidated by operating the vibrator along and close to but not against the joint surface. The vibration shall continue until thorough consolidation and complete embedment of reinforcement and fixtures is produced, but not long enough to cause segregation. Vibration may be supplemented by hand spading or rodding, if necessary, to insure the flushing of mortar to the surface of all forms.

**(6) Slabs.** Unless otherwise shown on the plans or other specifications, slab concrete shall be mixed in a plant located off the structure. Carting or wheeling concrete batches over completed slabs will not be permitted until the slabs have aged at least four (4) full curing days. For the remainder of the curing period, timber planking will be required for carting of the concrete. Carts shall be equipped with pneumatic tires. Curing operations shall not be interrupted for the purpose of wheeling concrete over finished slabs.

The storing of reinforcing or structural steel on completed roadway slabs generally shall be avoided and, when permitted, shall be limited to quantities and distribution that will not induce excessive stresses.

A longitudinal screed may be placed directly on previously placed concrete slabs for the purpose of checking and grading of an adjacent slab after the previously placed slab has aged not less than 24 hours. Actual screeding may be done after the previously placed slabs have aged at least 48 hours.

**(7) Continuous Placements.** For continuous placement of the deck on steel units, the initial set of the concrete shall be retarded sufficiently to insure that the concrete remains plastic in not less than three (3) spans immediately preceding the slab being placed. For simple spans, retardation shall be required only if necessary to complete finishing operations or as required by Article 420.13.

**(8) Fogging and Interim Curing.** From the time of initial strike off of the concrete until finishing is completed and required interim curing is in place, the unformed surfaces of slab concrete in bridge decks and top slabs of direct traffic culverts shall be fogged when necessary to replace water loss due to evaporation.

Fogging equipment shall be capable of applying water in a fine mist, not a spray. The fog shall be produced using equipment which pumps water or water and air under high pressure through a suitable atomizing nozzle. The equipment shall be hand operated and sufficiently portable for use in the direction of any prevailing wind. It shall be adaptable for intermittent use as directed by the Engineer to prevent excessive wetting of the concrete.

Interim curing will be required for slab concrete in bridge decks and top slabs of the direct traffic culverts immediately upon completion of final finish. Type 1-D membrane curing compound (Resin Base Only) will be required. Water curing will be required in accordance with Article 420.20 and shall be commenced as soon as possible without damaging the surface finish.

**(9) Installation of Dowels and Anchor Bolts.** Dowels and anchor bolts may be cast-in-place or installed by grouting with grout, epoxy or epoxy mortar. Holes for grouting may be formed or drilled.

**(a) General**. Holes for anchor bolts shall accommodate the bolt embedment required by the plans. Holes for dowels shall be a minimum of 12 inches deep unless otherwise shown on the plans. When grout or epoxy mortar is used, the diameter of the hole shall be not less than twice the dowel or bolt diameter nor more than the diameter plus 1 1/2 inches. When using epoxy, the hole diameter shall be 1/16 inch to 1/4 inch greater than the dowel or bolt diameter.

Holes shall be thoroughly cleaned of all loose material, oil, grease, or other bond breaking substance and blown clean with filtered compressed air. Holes shall be in a surface dry condition when epoxy type material is used. Holes shall be in a surface moist condition when portland cement grout is used. The Contractor shall develop and demonstrate a procedure for cleaning and preparing the holes for installation of the dowels and anchor bolts that is satisfactory to the Engineer. The void between the hole and dowel or bolt shall be completely filled with grouting material.

**(b) Cast-in-Place or Grouted Systems**. Portland cement grout, epoxy, epoxy mortar, or other prepackaged grouts as approved by the Engineer may be used.

Portland cement grout shall conform to the pertinent provisions of Item 421, "Portland

Cement Concrete". Epoxy (Type V) and Epoxy Mortar (Type VIII) shall conform to Item 575, "Epoxy". Grout, epoxy or epoxy mortar may be used as the binding agent unless otherwise indicated on the plans.

**(c) Other Anchor Systems.** These systems shall be in accordance with the plans and approved by the Engineer.

**(10) Mass Placements.** Unless otherwise shown on the plans, for monolithic mass placements having a least dimension greater than five (5) feet, the Contractor shall develop a plan to assure that during the heat dissipation period, the temperature differential between the central core of the placement and the exposed concrete surface does not exceed 35 F.

A detailed plan, along with an analysis of the associated heat generation and dissipation (heat flow analysis) shall be submitted to the Engineer for approval. No concrete shall be placed until this plan is approved.

This plan may include a combination of the following:

1. Selection of concrete ingredients to minimize heat of hydration.
2. Using ice or cooling concrete ingredients.
3. Controlling rate of concrete placement.
4. Using insulation to control heat loss.
5. Using supplemental heat to control heat loss.
6. Use of fly ash.

The Contractor shall furnish and install two (2) sets of strip chart temperature recording devices or approved equivalent at locations designated by the Engineer. These devices shall be accurate to within +/- 2 F within the range of 32 F to 212 F and shall be used to simultaneously measure the temperature of the concrete at the core and the surface.

**420.12. Placing Concrete in Cold Weather.** The Contractor is responsible for the protection of concrete placed under any and all weather conditions. Permission given by the Engineer for placing during cold weather will not relieve the Contractor of the responsibility for producing concrete equal in quality to that placed under normal conditions. Should concrete placed under such conditions prove unsatisfactory, it shall be removed and replaced.

Concrete may be placed only when the atmospheric temperature is greater than 35 F. Concrete shall not be placed in contact with any material coated with frost or having a temperature less than 32 F.

Aggregates shall be free from ice, frost and frozen lumps. When required, in order to produce the minimum specified concrete temperature, the aggregate and/or the water shall be heated uniformly, in accordance with the following:

The water temperature shall not exceed 180 F, nor shall the aggregate temperature exceed 150 F. The heating apparatus shall heat the mass of aggregate uniformly. The temperature

of the mixture of aggregates and water shall be between 50 F and 85 F before introduction of the cement.

The Contractor shall provide and install recording thermometer(s) or other suitable temperature measuring device(s) to verify that all concrete is effectively protected as follows:

(a) The temperature of all unformed surfaces of bridge decks and top slabs of direct traffic culverts shall be maintained at 50 F or above for a period of 72 hours from time of placement and above 40 F for an additional 72 hours.

(b) The temperature at the surface of all concrete in bents, piers, culvert walls, retaining walls, parapets, wingwalls, bottom of slabs, and other similar formed concrete shall be maintained at 40 F or above for a period of 72 hours from time of placement.

(c) The temperature of all concrete, including the bottom slabs (footings) of culverts placed on or in the ground, shall be maintained above 32 F for a period of 72 hours from time of placement.

Protection shall consist of providing additional covering, insulated forms or other means, and if necessary, supplementing such covering with artificial heating. Curing as specified under Article 420.20 shall be provided during this period until all requirements for curing have been satisfied.

When impending weather conditions indicate the possibility of the need for such temperature protection, all necessary heating and covering material shall be on hand and ready for use before permission is granted to begin placement.

Sufficient extra test specimens will be made and cured with the placement to ascertain the condition of the concrete as placed prior to form removal and acceptance.

**420.13. Placing Concrete in Hot Weather.** Unless otherwise directed by the Engineer, when the temperature of the air is above 85 F, an approved retarding agent will be required in all concrete used in superstructures and top slabs of direct traffic culverts.

**420.14. Placing Concrete in Water.** Concrete shall be deposited in water only when shown on the plans or with the written permission of the Engineer. The forms or cofferdams shall be sufficiently tight to prevent any water current passing through the space in which the concrete is being deposited. Pumping of water will not be permitted during the concrete placing, nor until it has set for at least 36 hours.

The concrete shall be placed with a tremie, or other approved method, and shall not be permitted to fall freely through the water nor shall the concrete be disturbed after being placed. The concrete surface shall be kept approximately level during placement.

The tremie shall consist of a water-tight tube of a diameter which will permit adequate placement of the concrete, but not greater than 14 inches. The tremie shall be constructed so that the bottom

can be sealed and opened after the tremie is in place and fully charged with concrete. The tremie shall be supported so that it can be easily moved horizontally to cover all the work area and vertically to control the concrete flow. The lower end of the tremie shall be submerged in the concrete at all times.

The placing operations shall be continuous until the work is complete.

Unless otherwise specified, all classes of concrete placed under water, except Class E and Class SS, shall be redesigned to contain an additional sack of cement per cubic yard more than the mix design being used. Pilot beam tests may be waived by the Engineer for this redesign.

**420.15. Placing Concrete in Superstructure.** Unless otherwise shown on the plans, simple span bridge slabs shall be placed without transverse construction joints by using either a mechanical longitudinal screed or a self propelled transverse finishing machine. For small placements or for unusual conditions, the Engineer may waive the mechanical screed requirement and permit the use of manually operated screeding equipment. The screed shall be adequately supported on a header or rail system sufficiently stable to withstand the longitudinal or lateral thrust of the equipment. Unless otherwise shown on the plans, temporary intermediate headers will be permitted for placements exceeding 50 feet in length for the longitudinal screed, provided the rate of placement is rapid enough to prevent a cold joint and that these headers are designed for early removal to permit satisfactory consolidation and finish of the concrete at their locations.

Unless otherwise shown on the plans, slabs on continuous units shall be placed in one continuous operation without transverse construction joints using a mechanical longitudinal screed or a self propelled transverse finishing machine. For unusual conditions, such as widening, variable cross slopes or transitions, the Engineer may waive the mechanical screed requirement and permit the use of manually operated screeding equipment. Rails for transverse finishing machines which are supported from the beams or girders shall be installed so that the supports may be removed without damage to the slab. Bond between removable supports and the concrete shall be prevented in a manner acceptable to the Engineer. Rail support parts which remain embedded in the slab shall not project above the upper mat of reinforcing steel. Rail or screed supports attached to I-beams or girders shall be subject to the requirements of Article 420.3.

Unless otherwise shown on the plans, for transverse screeding, the minimum rate of concrete placement shall be 30 linear feet of bridge deck per hour. The Contractor shall furnish personnel and equipment capable of placing, finishing and curing the slab at an acceptable rate to insure compliance with the specifications.

The profile gradeline may require adjustment, due to variation in beam camber and other factors, to obtain the required cover over the slab reinforcement. Beams shall be set in a sufficient number of spans so that when adjustment is necessary, the profile gradeline can be adjusted over suitable increments and the revised gradeline will produce a smooth riding surface.

One (1) or more passes shall be made with the screed over the bridge deck segment prior to the placement of concrete thereon to insure proper operation and maintenance of grades and clearances.

Slab concrete shall be deposited between the exterior beam and the adjacent beam prior to placing concrete in the overhang portion of the slab.

For transverse screeding, concrete shall be placed in transverse strips. Additionally, on profile grades greater than 1 1/2 percent, placement shall begin at the lowest end.

For longitudinal screeding, concrete shall be placed in longitudinal strips starting at a point in the center of the segment adjacent to one side, except as provided herein, and the strip completed by placing uniformly in both directions toward the ends, except that for spans on a grade of 1 1/2 percent or more placing shall start at the lowest end.

The width of strips shall be such that the concrete therein will remain plastic until the adjacent strip is placed. Where monolithic curb construction is specified, the concrete shall be placed therein in proper sequence to be monolithic with the adjacent longitudinal strips of the slabs.

An approved system of checking shall be used to detect any vertical movement of the forms or falsework. Forms for the bottom surface of concrete slabs, girders and overhangs shall be maintained to the required vertical alignment during concrete placing.

Unless otherwise shown on the plans, girders, slab and curbs of slab and girder spans shall be placed monolithically. Concrete girder stems shall be filled first and the slab concrete placed within the time limits specified in Article 420.11.

Construction joints, when permitted for slab placements on steel and prestressed concrete beams, shall be as shown on the plans. Where plans permit segmental placing without specifying a particular order of placement, any logical placing sequence which will not result in the overstressing of any of the supporting members will be permitted subject to the approval of the Engineer.

Any falsework under steel girder or truss spans shall be released and the spans swung free on their permanent supports before placing any slab concrete thereon.

When the curb forms are filled, the top of curb and sidewalk section shall be brought to the correct camber and alignment and finished as described in Articles 420.18 and 420.23.

**420.16. Placing Concrete in Box Culverts.** Where the top slab and walls are placed monolithically in culverts more than four (4) feet in clear height, an interval of not less than one (1) nor more than two (2) hours shall elapse before placing the top slab to allow for settlement and shrinkage in the wall concrete.

The footing slab shall be accurately finished at the proper time to provide a smooth uniform surface. Top slabs which carry direct traffic shall be finished as specified in Article 420.19. Top slabs of fill type culverts shall be given a float finish.

**420.17. Placing Concrete in Foundation and Substructure.** Concrete shall not be placed in footings until the depth and character of the foundation has been inspected by the Engineer and permission has been given to proceed.

Placing of concrete footings upon seal concrete will be permitted after the cofferdams are free from water and the seal concrete cleaned. Any necessary pumping or bailing during the concreting operation shall be done from a suitable sump located outside the forms.

All temporary wales or braces inside cofferdams shall be constructed or adjusted as the work proceeds to prevent unauthorized construction joints.

When footings can be placed in a dry excavation without the use of cofferdams, forms may be omitted, if approved by the Engineer, and the entire excavation filled with concrete to the elevation of the top of footing. In this case, measurement for payment will be based on the footing dimensions shown on the plans.

Concrete in columns shall be placed monolithically between construction joints unless otherwise provided. Columns and caps and/or tie beams supported thereon may be placed in the same operation. To allow for settlement and shrinkage of the column concrete, it shall be placed to the lower level of the cap or tie beam and placement delayed for not less than one (1) hour nor more than two (2) before proceeding.

**420.18. Treatment and Finishing of Horizontal Surfaces Except Roadway Slabs.** All unformed upper surfaces shall be struck off to grade and finished. The use of mortar topping for surfaces under this classification will not be permitted.

After the concrete has been struck off, the surface shall be floated with a suitable float. Bridge sidewalks shall be given a wood float or broom finish or may be striped with a brush, as specified by the Engineer.

The tops of caps and piers between bearing areas shall be sloped slightly from the center toward the edge, and the tops of abutments and transition bents sloped from the backwall to the edge, as directed by the Engineer, so that the water drains from the surface. The concrete shall be given a smooth trowel finish. When shown on the plans, the top of caps and piers shall be coated with Type X epoxy material except for areas under shoes and bearing pads. Unless otherwise shown on the plans, the color shall be concrete gray. The color of the epoxy may be adjusted to concrete gray by the use of a black universal type tinting paste. Bearing areas for steel units shall be constructed in accordance with Item 441, "Steel Structures".

Bearing seat build-ups or pedestals for concrete units may be cast integrally with the cap or with a construction joint as follows:

The bearing seat build-ups shall be constructed of a latex based mortar or an epoxy mortar, mixed in accordance with the manufacturer's recommendation. Pedestals shall be constructed of Class "C" concrete, reinforced as shown on the plans.

Bearing areas under elastomeric pads or non-reinforced bearing seat build-ups shall be given a textured, wood float finish.

**420.19. Finish of Roadway Slabs.** In all roadway slab finishing operations, camber for specified vertical curvature and transverse slopes shall be provided.

For concrete slab or concrete slab girder spans cast in place on falsework, an additional amount of camber shall be provided to offset the initial and final deflections of the span. The additional amount of camber shall be determined from the dead load deflection diagram shown on the plans. When dead load deflection is not shown on the plans, the additional amount of camber shall be 1/8 inch per ten foot of span length but not to exceed 1/2 inch. For pan girder spans the additional camber for initial and final deflections shall be approximately 1/2 inch for 30 foot spans and 5/8 inch for 40 foot spans unless otherwise directed by the Engineer.

Roadway slabs supported on pre-stressed concrete, steel beams or girders shall receive no additional camber, except that for slabs without vertical curvature, the longitudinal camber shall be approximately 1/4 inch.

Dead load deflection shall be taken into account in setting the grades of headers and rail systems.

Work bridges or other suitable facilities shall be provided by the Contractor from which to perform all finishing operations and check measurements for slab thickness and reinforcement cover.

As soon as the concrete has been placed and vibrated in a section of sufficient width to permit working, the surface shall be approximately leveled, struck off and screeded, carrying a slight excess of concrete ahead of the screed to insure filling of all low spots. The screed shall be rigid enough to hold true to shape and shall have sufficient adjustments to provide for the required camber or section. A vibrating screed may be used if heavy enough to prevent undue distortion. The screeds, except those of the roller drum type, shall be provided with metal cutting edges.

Longitudinal screeds shall be moved across the concrete with a saw-like motion while their ends rest on headers or templates set true to the roadway grade or on the adjacent finished slab.

The surface of the concrete shall be screeded a sufficient number of times and at such intervals to produce a uniform surface, true to grade and free of voids.

If necessary, the screeded surface shall be worked to a smooth finish with a long handled wood or metal float, or hand floated from bridges over the slab.

When required by the Engineer, the Contractor shall perform sufficient checks with a long handled 10 foot straightedge on the plastic concrete to insure that the final surface will be within the tolerances specified below. The check shall be made with the straightedge parallel to the centerline. Each pass thereof shall lap half of the preceding pass. All high spots shall be removed and all depressions over 1/16 inch in depth shall be filled with fresh concrete and floated. The checking and floating shall be continued until the surface is true to grade and free of depressions, high spots, voids or rough spots.

Rail support holes shall be filled with concrete and finished to match the top of the slab.

Unless otherwise shown on the plans, when no additional wearing course is to be placed, the bridge deck surface shall be given a grooved steel tine finish. The grooves shall be approximately 1/8 to 3/16 inch deep, approximately 1/8 inch wide. The tines shall be randomly spaced approximately 3/4 to one (1) inch apart. The grooves shall run perpendicular to the structure center line when a transverse screed is used and parallel to the structure centerline when a longitudinal screed is used. Areas which receive insufficient texture depth shall receive additional texturing, when directed by the Engineer, by saw grooving in accordance with the procedure given below.

At the option of the Contractor, or when shown on the plans, the surface shall be given its final texture by saw grooving to meet the above requirements. Saw grooving may be done a minimum of four (4) days after the slab concrete has been placed. If saw grooving is done prior to the completion of curing, the curing shall be continued after sawing to provide the minimum curing time required.

When shown on the plans that a concrete overlay is to be placed on the slab (new construction) or on pre-stressed concrete box beams or other precast elements, the slab or the top surface of shear key and diafram concrete shall be given a broom finish. The finish shall have an average texture depth of approximately 0.035 inches with any individual test, not falling below 0.020 inches unless otherwise shown on the plans, when tested in accordance with Test Method Tex-436-A. Should the texture depth fall below that intended, the finishing procedures shall be revised to produce the desired texture.

When the plans require that an asphaltic seal, with or without overlay, on the slab (new construction), on pre-stressed concrete box beams or other precast elements, the slab or top surface of shear key and diafram concrete shall be given a lightly textured broom finish having an average texture depth of approximately 0.025 inches when tested in accordance with Test Method Tex-436-A.

Straightedge requirements will be required on slabs (new construction) to be overlaid.

After the concrete slab has attained final set, the Engineer may require that the finished surface be tested with a standard 10 foot straightedge. The straightedge shall be used parallel to the centerline of the structure to bridge any depressions and touch high spots. Ordinates of the irregularities, measured from the face of the straightedge to the surface of the slab, should normally not exceed 1/8 of an inch, making proper allowances for camber, vertical curve and surface texture; however, occasional variations exceeding this will be acceptable if, in the opinion of the Engineer, the variations will not produce unacceptable riding qualities.

When directed by the Engineer, irregularities exceeding the above shall be corrected. Areas which are corrected to produce satisfactory riding qualities shall be provided with an acceptable surface texture in a manner approved by the Engineer.

**420.20. Curing Concrete.** The Contractor shall inform the Engineer of the methods proposed for curing; shall provide the proper equipment and material in adequate amounts; and shall have the proposed methods, equipment and material approved prior to placing concrete.

Unless otherwise noted herein or shown on the plans, the choice of curing methods shall be at the option of the Contractor, except that the Engineer may require the same curing methods for like portions of a single structure.

Inadequate curing and/or facilities shall be cause for the Engineer to delay all concrete placement on the job until remedial action is taken.

All concrete shall be cured for a period of four (4) curing days except as noted herein.

**Table 2**
**EXCEPTIONS TO 4-DAY CURING**

| Description | Type of Cement | Required Curing Days |
|---|---|---|
| Upper surfaces of bridge slabs, top slab of direct traffic culverts, and concrete overlays | I or III | 8 |
| | II or I/II* | 10 |
| | All types with fly ash | 10 |
| Concrete Piling Build-ups | All | 6 |

*Meets the requirements of both Type I and Type II.

When the air temperature is expected to drop below 40 F, the concrete shall be covered with polyethylene sheeting, burlap-polyethylene blankets, mats or other acceptable materials to provide the protection required by Article 420.12.

A curing day is defined as a calendar day when the temperature, taken in the shade away from artificial heat, is above 50 F for at least 19 hours, or on colder days if satisfactory provisions are made to maintain the temperature of all surfaces of the concrete above 40 F for the entire 24 hours. The required curing period shall begin when all concrete therein has attained its initial set.

The following methods are permitted for curing concrete subject to the requirements of Table 3 and the following additional requirements for each method of curing:

**(1) Form Curing.** When forms are left in contact with the concrete, other curing methods

will not be required except for exposed surfaces and for cold weather protection.

**(2) Water Curing.** All exposed surfaces of the concrete shall be kept wet continuously for the required curing time. The water used for curing shall meet the requirements for concrete mixing water as specified in Item 421, "Portland Cement Concrete". Sea water will not be permitted. Water which stains or leaves an unsightly residue shall not be used.

**(a) Wet Mat Curing.** This curing method shall consist of keeping the concrete continuously wet by maintaining wet cotton mats in direct contact with the concrete for the required curing time. Damp burlap blankets made from nine (9) ounce stock may be placed on the damp concrete surface for temporary protection prior to the application of cotton mats. The cotton mats may then be placed dry and wetted down immediately after they are placed. The mats shall be weighted down adequately to provide continuous contact with all concrete where possible.

Surfaces which cannot be cured by direct contact shall be covered with mats forming an enclosure well anchored to the forms or ground so that outside air cannot enter the enclosure. Sufficient moisture shall be provided inside the enclosure to keep all surfaces of the concrete wet. Wet mat curing will be required for Part A in Table 3 when the anticipated ambient temperature is expected to remain above 40 F for the first 72 hours of the curing period.

Polyethylene sheeting, burlap-polyethylene blankets, laminated mats or insulating curing mats placed in direct contact with the slab will be required when the air temperature is expected to drop below 40 F during the first 72 hours of the curing period. These curing materials shall be weighted down with dry mats to maintain direct contact with the concrete and to provide insulation against cold weather. Supplemental heating or insulation may be required in cold and/or wet weather if the insulating cotton mats become wet or if the concrete drops below the specified curing temperature.

**(b) Water Spray.** This curing method shall consist of overlapping sprays or sprinklers that keep all unformed surfaces continuously wet.

**(c) Ponding.** This curing method requires the covering of the surfaces with a minimum of two (2) inches of clean granular material, kept wet at all times, or a minimum of one (1) inch depth of water. Satisfactory provisions shall be made to provide a dam to retain the water or saturated granular material.

**(3) Membrane Curing.** Unless otherwise provided herein or shown on the plans, either Type 1-D or Type 2 membrane curing compound may be used where membrane curing is permitted except that Type 1-D (Resin Base Only) will be required for bridge slabs and top slabs of direct traffic culverts and all other surfaces which may require a higher grade of surface finish.

**Table 3**

**CURING REQUIREMENTS**

| STRUCTURE UNIT DESCRIPTION | REQUIRED | | PERMITTED | |
|---|---|---|---|---|
| | Water for Complete Curing | Membrane for Interim Curing | Water for Complete Curing | Membrane for Complete Curing |
| A. Upper surfaces of Bridge Roadway, Median and Sidewalk slabs, Top Slabs of Direct Traffic Culverts. | X | X (Resin Base) | | |
| B. Top Surface of any Concrete Unit upon which Concrete is to be placed and bonded at a later interval (Stub Walls, Risers, etc.). Other Super structure Concrete (Curbs Wingwalls, Parapet Walls, etc.). | X | | | |
| C. All Substructure Concrete, Culverts, Box Sewers, Inlets, Manholes, Retaining Walls, Riprap, Railing | | | *X | *X |
| All other concrete | As specified in other items. | | | |

*Polyethylene Sheeting, Burlap-Polyethylene Mats or Laminated Mats in close intimate contact with the concrete surfaces will be considered equivalent to water or membrane curing.

For substructure concrete only one (1) type of curing compound will be permitted on any one (1) structure. Material requirements and construction methods shall be as required by Item 526, "Membrane Curing", except as changed herein.

Membrane curing shall not be applied to dry surfaces, but shall be applied just after free moisture has disappeared. Formed surfaces and surfaces which have been given a first rub shall be dampened and shall be moist at the time of application of the membrane.

When membrane is used for complete curing, the film shall remain unbroken for the minimum

curing period specified. Membrane which is damaged shall be corrected immediately by reapplication of membrane. Unless otherwise noted herein or shown on the plans, the choice of membrane type shall be at the option of the Contractor.

**420.21. Removal of Forms and Falsework.** Except as herein provided, forms for vertical surfaces may be removed when the concrete has aged not less than 12 hours, provided the removal can be done without damage to the concrete.

Forms for inside curb faces may be removed at such time the removal can be done without damage to the curb.

Weight supporting forms and falsework for all bridge components and culvert slabs, except as noted herein, shall remain in place a minimum of four (4) curing days. The forms then may be removed if the concrete has attained a flexural strength of 425 psi, as evidenced by strength tests using test beams made from the same concrete and cured under the same conditions as the portion of the structure involved. Forms for other structural components may be removed as specified by the Engineer.

Inside forms (walls and top slabs) for box culverts and sewers may be removed after concrete has aged not less than one (1) day (24 hrs.) and has acquired a flexural strength of not less than 255 psi, provided an overhead support system, approved by the Engineer, is used to transfer the weight of the top slab to the walls of the box culvert or sewer before the support provided by the forms is removed.

When all test beams made for the purpose of form removal have been broken without attaining the required strength, forms shall remain in place for a total of 14 curing days.

The above provisions relative to form removal shall apply only to forms or parts thereof which are constructed to permit removal without disturbing forms or falsework required to be left in place for a longer period on other portions of the structure.

All forms and falsework shall be removed unless otherwise approved by the Engineer.

**420.22. Defective Work.** Any defective work shall be repaired as soon as possible.

Any defect which in the opinion of the Engineer cannot be repaired satisfactorily to the extent required by the Engineer shall be removed and replaced at the expense of the Contractor.

**420.23. Finishing Exposed Surfaces.** A Surface Finish shall be applied to all concrete surfaces and shall be in accordance with Item 427, "Surface Finishes for Concrete".

**420.24. Measurement.** The quantities of concrete of the various classifications which will constitute the completed and accepted structure or structures in place will be measured by the cubic yard, each, square foot, square yard, or linear foot as shown on the plans. Measurement will be as follows:

**(1) General.**

(a) All concrete quantities will be based on the dimensions shown on the plans or those established in writing by the Engineer. Diafram concrete, when required, will be included in the slab measurement.

(b) In determining quantities, no deductions will be made for chamfers less than two (2) inches, embedded portions of structural steel or pre-stressed concrete beams, piling, anchor bolts, reinforcing steel, drains, weep holes, junction boxes, electrical or telephone conduit, conduit and/or voids for pre-stressed tendons or for embedded portions of light fixtures.

(c) For pan girder spans, a quantity will be included for the screed setting required to provide proper camber in the roadway surface after form removal.

(d) For slabs on steel and pre-stressed beams, a quantity for the haunch between the slab and beams will be included when required. No measurement will be made during construction for variation in the amount of haunch concrete due to deviation from design camber in the beams.

(e) For slabs on panels, T-beams, or box beams, the combination of span length, theoretical camber in beams, computed deflections, and plan vertical curve will be taken into account in determining the quantity for the slab.

Additional concrete which may be required by an adjustment of the profile grade line during construction, to insure proper slab thickness, will not be measured for payment.

(f) Variation in concrete headwall quantity incurred when an alter- nate bid for pipe is permitted will not be measured for payment.

(g) Quantities revised by a change in design, measured as specified herein, will be increased or decreased, as the case may be, and included for payment.

**(2) Plan Quantity.** For structure elements designated in Table 4, and when measured by the cubic yard, this is a plans quantity measurement Item and the quantity to be paid for will be that quantity shown in the proposal and on the "Estimate and Quantity" sheet of the contract plans, except as may be modified by Article 9.8. If no adjustment of quantities is required, additional measurements or calculations will not be required.

When the quantity for a complete structure element has been erroneously included or omitted from the plans, the quantity shown on the plans for that element will be added to or deducted from the plan quantity and included for payment. A complete structure element will be the smallest portion of a total structure for which a quantity is included on the plans.

When the plan quantity for a complete structure element is in error by five (5) percent or more, a recalculation will be made and the corrected quantity included for payment.

**(3) Measured in Place.** For those Items not measured for plan quantity payment, measurement will be made in place.

**Table 4**
**PLAN QUANTITY PAYMENT**
**(Cubic Yard Measurement Only)**

| | |
|---|---|
| Culverts and Wingwalls | Slabs on Steel Spans |
| Headwalls for pipe | Slabs on Pre-stressed Spans |
| Retaining Walls | Pan Girder Spans |
| Inlets and Manholes | Pile Bent Caps |
| Slab Spans | Shear Key Concrete |
| Slab and Girder Spans | Abutments |

Note: Other structure elements may be paid for as "plan quantity", including pier and bent concrete, when shown on the plans.

For those portions of structures not listed in Table 4, the concrete quantities, measured as provided in Subarticle 420.24.(1) will be paid for at the unit price bid per "Cubic Yard", per "Each", per "Square Foot", per "Square Yard", or per "Linear Foot", in place, for the various classifications of concrete shown.

**420.25. Payment.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for the various structure elements specified of the various classes of concrete. This price shall be full compensation for furnishing, hauling and mixing all concrete materials; for furnishing, bending, fabricating, splicing, welding and placing the required reinforcement; for all clips, blocks, metal spacers, ties, wire or other materials used for fastening reinforcement in place; for placing, finishing and curing all concrete; for all grouting and pointing; for furnishing and placing drains; for furnishing and placing metal flashing strips; for furnishing and placing expansion-joint material required by this Item; and for all forms and falsework, labor, tools, equipment and incidentals necessary to complete the work.

Concrete which fails to meet minimum strength requirements may be rejected or a structural review may be made by the Engineer. Such concrete which is proven structurally adequate may be accepted at an adjusted price based on the following formula:

$A = .10Bp + .75(Sa/Ss)^2 Bp$
A = Amount to be paid per unit of measure
Sa = Actual strength from beams or cores.
Ss = Minimum required strength (specified)
Bp = Unit bid price

*** * * END OF SECTION * * ***

## SECTION ITEM 421

## PORTLAND CEMENT CONCRETE

**421.1. Description.** This Item shall govern for portland cement concrete to be used in concrete pavement, concrete structures and other concrete construction.

**421.2. Materials.** The concrete shall be composed of portland cement, (with or without) fly ash, fine and coarse aggregates and water.

**(1) Cement.** Portland cement shall conform to Item 524, "Hydraulic Cement".

Unless otherwise shown on the plans or in the specifications, the cement shall be either Type I, IP, II or III portland cement except as follows:

a. Type III cement shall not be used when the anticipated air temperature for the succeeding 12 hours will exceed 60 F.

b. Type III cement may be used, regardless of air temperature, in all precast concrete.

All cement used in a monolithic placement shall be of the same type.

Type I/II cement may be considered as either Type I or Type II cement except as otherwise noted.

Type IP cement may be used in lieu of Type I or Type II cement except when otherwise required by the plans or specifications. When Type IP cement is used, additional fly ash will not be permitted.

**(2) Fly Ash.** Fly ash shall conform to the requirements of Departmental Materials Specification D-9-8900. Copies of Departmental Materials Specifications are available from the Texas Department of Transportation, Division of Materials and Tests, 125 East 11th Street, Austin, Texas 78701-2483.

When fly ash is used, "cement" shall be defined as "cement plus fly ash". "Cement plus fly ash" shall be composed of Type I, II or III portland cement and 20 to 35 percent fly ash by absolute volume, except that for classes of concrete which are specified to have less than five (5) sacks of portland cement per cubic yard, the fly ash replacement of cement shall not exceed 25 percent by absolute volume of the specified cement content. The Contractor has the option of using "cement plus fly ash" as defined herein for all classes of concrete except that Type B fly ash shall not be used when Type II cement is required, and no fly ash is permitted when a white portland cement is required.

**(3) Mixing Water.** Water for use in concrete and for curing shall be free from oils, acids, organic matter or other deleterious substances and shall not contain more than 1000 parts

per million of chlorides as Cl nor more than 1000 parts per million of sulfates as $SO_4$.

Water from municipal supplies approved by the State Health Department will not require testing, but water from other sources will be sampled and tested before use in concrete. Tests shall be made in accordance with AASHTO T26. A sample of approximately one (1) gallon shall be submitted to the Texas Department of Transportation, Division of Materials and Tests, 3800 Jackson Ave., Bldg. No. 5, Austin, Texas 78731-6033.

Water used in white portland cement concrete shall be free from iron and other impurities which may cause staining or discoloration.

**(4) Coarse Aggregate.** Coarse aggregate shall be washed and shall consist of durable particles of gravel, crushed blast furnace slag, crushed stone, or combinations thereof and shall be free from frozen material or injurious amounts of salt, alkali, vegetable matter, or other objectionable material either free or as an adherent coating. When white portland cement is specified, the coarse aggregates used in the concrete shall be light colored. Quality shall be reasonably uniform throughout. Coarse aggregate shall not contain more than 0.25 percent by weight of clay lumps, nor more than one (1.0) percent by weight of shale, nor more than five (5.0) percent by weight of laminated and/or friable particles when tested in accordance with Test Method Tex-413-A. Coarse aggregate from each source shall have a wear of not more than 40 percent when tested in accordance with Test Method Tex-410-A.

Unless otherwise shown on the plans, coarse aggregate from each source will be subjected to five (5) cycles of both the sodium sulfate and the magnesium sulfate soundness test in accordance with Test Method Tex-411-A. When the loss is greater than 12 percent with sodium sulfate and/or 18 percent with magnesium sulfate, further testing will be required prior to acceptance or rejection of the material. A satisfactory record under similar conditions of service and exposure will be considered in the evaluation of material failing to meet these requirements.

When tested in accordance with Test Method Tex-401-A, the coarse aggregate, including combinations of aggregates when used, shall conform to the gradation requirements shown in Table 1, except as provided in Subarticle 427.8.(3) for exposed aggregate finishes.

**TABLE 1**

**COARSE AGGREGATE GRADATION CHART**

| Aggregate Grade No. | Nominal Size Inches | Percent Retained on Each Sieve | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2-1/2 in. | 2 in. | 1-1/2 in. | 1 in. | 3/4 in. | 1/2 in. | 3/8 in. | No. 4 | No. 8 |
| 1 | 2 | 0 | 0-20 | 15-50 | | 60-80 | | | 95-100 | |
| 2 (467)* | 1-1/2 | | 0 | 0-5 | | 30-65 | | 70-90 | 95-100 | |
| 3 | 1-1/2 | | 0 | 0-5 | | 10-40 | 40-75 | | 95-100 | |
| 4 (57)* | 1 | | | 0 | 0-5 | | 40-75 | | 90-100 | 95-100 |
| 5 (67)* | 3/4 | | | | 0 | 0-10 | | 45-80 | 90-100 | 95-100 |
| 6 (7)* | 1/2 | | | | | 0 | 0-10 | 30-60 | 85-100 | 95-100 |
| 7 | 3/8 | | | | | | 0 | 5-30 | 75-100 | |
| 8 | 3/8 | | | | | | 0 | 0-5 | 35-80 | 90-100 |

*Numbers in parenthesis indicate that these gradations conform to corresponding ASTM gradation in ASTM C33.

The loss by decantation in accordance with Test Method Tex-406-A plus the allowable weight of clay lumps, shall not exceed one (1) percent, or the value shown on the plans, whichever is smaller. In the case of aggregates made primarily from the crushing of stone, if the material finer than the 200 sieve is definitely established to be the dust of fracture, essentially free from clay or shale, as established by Part III of Test Method Tex-406-A, the percent may be increased to 1.5.

**(5) Fine Aggregate.** Fine aggregate shall be washed and consist of clean, hard, durable and uncoated particles of natural or manufactured sand or a combination thereof, with or without a mineral filler. When white portland cement is specified the fine aggregate used in the concrete shall be light colored. It shall be free from frozen material or injurious amounts of salt, alkali, vegetable matter or other objectionable material and it shall not contain more than 0.5 percent by weight of clay lumps. When the aggregate is subjected to the color test for organic impurities in accordance with Test Method Tex-408-A, the test result shall not show a color darker than standard.

Unless otherwise shown on the plans, the acid insoluble residue of fine aggregate used in concrete subject to direct traffic shall be not less than 60 percent by weight when tested in accordance with Test Method Tex-612-J.

When tested in accordance with Test Method Tex-401-A, the fine aggregate or combinations of aggregates, including mineral filler, shall conform to the gradation requirements shown in Table 2.

**Table 2**

**FINE AGGREGATE GRADATION CHART**

| | Percent Retained on Each Sieve | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aggregate Grade No. | 3/8 in. | No. 4 | No. 8 | No. 16 | No. 30 | No. 50 | No. 100 | No. 200 |
| 1 | 0 | 0 to 5 | 0 to 20 | 15 to 50 | 35 to 75 | 65 to 90 | 90 to 100 | 97 to 100 |

Where manufactured sand is used in lieu of natural sand, the percent retained on the No. 200 sieve shall be 94 to 100.

Where the sand equivalent value is greater than 85, the retainage on the No. 50 sieve may be 65 to 94 percent.

Fine aggregate will be subjected to the Sand Equivalent Test (Test Method Tex-203-F). The sand equivalent shall not be less than 80 unless otherwise shown on the plans.

For all classes of concrete, except class K, the fineness modulus shall be between 2.30 and 3.10 as determined by Test Method Tex-402-A. The fineness modulus for class K shall be 2.6 to 2.8 unless otherwise shown on the plans.

**(6) Mineral Filler.** Mineral filler shall consist of stone dust, clean crushed sand, or other approved inert material. When tested in accordance with Test Method Tex-401-A, it shall conform to the following gradation:

Retained on No. 30 Sieve 0 percent

Retained on No. 200 Sieve 0-35 percent

**(7) Admixtures.** Admixtures and their use shall conform to the requirements of Item 437, "Concrete Admixtures". Calcium chloride will not be permitted.

**(8) Mortar and Grout.** Unless otherwise specified or approved by the Engineer, mortar and grout shall consist of one (1) part portland cement, two (2) parts finely graded sand and sufficient water to provide the desired consistency. Mortar may contain admixtures.

Post tensioning grout shall be in accordance with Item 426, "Prestressing".

Mortar shall have a consistency such that the mortar can be easily handled and spread by trowel.

Grout shall have a consistency such that the grout will flow into and completely fill all voids.

When required to prevent color difference, white cement shall be added to produce the color required. When shown on the plans or in the specifications, or when required by the Engineer, latex adhesive conforming to the requirements of Departmental Material Specification D-9-8110 shall be added to the mortar.

**421.3. Storage of Materials.**

**(1) Cement, Fly Ash and Mineral Filler.** All cement, fly ash and mineral filler shall be stored in well ventilated weatherproof buildings or approved bins, which will protect them from dampness or absorption of moisture. Each shipment of packaged cement shall be kept separated to provide easy access for identification and inspection.

The Engineer may permit small quantities of sacked cement to be stored in the open on a raised platform and under waterproof covering for a maximum of 48 hours.

**(2) Aggregates.** The method of handling and storing concrete aggregates shall prevent contamination with foreign materials. If the aggregates are stored on the ground, the sites for the stockpiles shall be clear of all vegetation and shall be level. The bottom six (6) inch layer of aggregate shall not be disturbed or used without re-cleaning.

When conditions require the use of two (2) or more sizes of aggregates, the aggregates shall be separated to prevent intermixing. Where space is limited, stockpiles shall be separated by physical barriers. Aggregates from different sources shall be stored in different stockpiles unless the aggregates are pre-blended as approved by the Engineer prior to stockpiling.

Methods of handling aggregates during stockpiling and their subsequent use shall be such that segregation will be minimized. The Engineer may require that stockpiles be remixed when segregation is apparent.

Unless otherwise authorized by the Engineer, all aggregate shall be stockpiled at least 24 hours to reduce the free moisture content. In order to control absorption, stockpiles shall be sprinkled when directed by the Engineer.

To assure uniform concrete, aggregate stockpiles shall be maintained at reasonably uniform moisture content.

**(3) Admixtures.** Admixtures shall be stored in accordance with Item 437, "Concrete Admixtures".

**421.4. Measurement of Materials.** Except as noted below, the measurement of materials used in batches of concrete shall be by weight.

Water may be measured by volume or by weight.

Cement and fly ash shall be weighed separately from other materials. Weighing of sacked cement will not be required. When sacked cement is used, the quantity of cement per batch shall be based upon using full bags of cement. Batches involving use of fractional bags will not be permitted except for small hand mixed batches of approximately five (5) cubic feet or less and when an approved method of volumetric measurement is used.

Where two (2) or more sizes or types of aggregates are used, each type and/or size shall be measured separately.

When determining aggregate batch weights, proper allowance shall be made for the water content in the aggregate (free water and/or absorption).

Admixtures shall be measured and dispensed in accordance with Item 437, "Concrete Admixtures".

Measuring materials by volumetric methods may be used where permitted by the specifications. When a mixer using volumetric batching of materials is used, an accurate method of measuring by volume shall be provided. Continuous volumetric mixers shall be calibrated to assure correct measurement of materials.

The amount of each ingredient in the batch shall be measured to within plus or minus one (1) percent of the required amount except that water shall be measured to within plus or minus one (1) gallon and admixture tolerances shall be in accordance with Item 437, "Concrete Admixtures".

**421.5. Equipment.**

**(1) Weighing and Measuring Equipment.** Weighing and measuring equipment shall conform to Item 520, "Weighing and Measuring Equipment".

**(2) Mixing Equipment.**

**(a) General.** All equipment, tools, and machinery used for hauling materials and performing any part of the work shall be maintained in such condition as to insure completion of the work under way without excessive delays for repairs or replacement.

The mixer shall be of an approved type and size that will produce uniform distribution of the material throughout the mass and shall be capable of producing concrete meeting the requirements of these specifications.

The mixing equipment shall be capable of producing the quantities of concrete necessary to comply with requirements shown on the plans or in these specifications.

For all mixers, an adequate water supply and an accurate method of measuring the water shall be provided.

Delivery of concrete to the worksite and the discharge from the hauling equipment,

agitating, or non-agitating, shall be in accordance with the requirements shown on the plans or in the governing specifications.

Specific requirements for batch plants, mixers and other equipment shall be in accordance with Item 522, "Portland Cement Concrete Plants", Item 360, "Concrete Pavement", or other specifications, except that continuous volumetric mixers shall conform to Subarticle 421.5(2)(b) of this Item.

**(b) Continuous Volumetric Mixers.** For all miscellaneous concrete placements, a mobile, continuous, volumetric mixer may be used.

When approved in writing by the Engineer or when specified for use in other Items, these mixers may be used for other types of concrete construction, including structural concrete, if the number of mixers furnished will supply the amount of concrete required for the particular operation in question.

These mixers shall be designed to receive all the concrete ingredients, including admixtures, required by the mix design in a continuous uniform rate and mix them to the required consistency before discharging.

**(c) Portland Cement Concrete Plants.** The use of ready-mixed concrete from a commercial source will be permitted for all structural concrete provided that the plant, truck mixers, and mixing equipment conform to the requirements of Item 522, "Portland Cement Concrete Plants". The use of ready-mix plants and ready-mix concrete for concrete pavement shall be in accordance with Item 360, "Concrete Pavement". The class of plant furnished shall conform to the requirements of Item 522, "Portland Cement Concrete Plants".

**421.6. Mixing.**

**(1) General.** Mixed concrete which does not conform to specification requirements shall not be placed. Mixing shall be in accordance with Item 522, "Portland Cement Concrete Plants", except that mixing with continuous volumetric mixers will be in accordance with Subarticle 421.6.(2) and except as set out in Subarticle 421.6.(3).

**(2) Continuous Volumetric Mixers.** Mixing shall be in accordance with mixer manufacturer's recommendations unless otherwise revised by the Engineer.

**(3)** Mixing of concrete by hand methods or by the use of a small motor driven mixer will be permitted for small placements of approximately two (2) cubic yards or less when authorized by the Engineer. Hand mixed batches shall not exceed a two (2) sack batch in volume. For such placements the mix may be proportioned by approved volumetric methods.

**421.7. Placing, Curing and Finishing.** The placing of concrete, including construction of forms and falsework, curing and finishing, shall be in accordance with Item 420, "Concrete Structures", Item 360, "Concrete Pavement", and Item 427, "Surface Finishes for Concrete".

**421.8. Classification and Mix Design.** The Contractor shall furnish the mix design, using a coarse aggregate factor acceptable to the Engineer, for the class(es) of concrete specified, to conform with the requirements contained herein and in accordance with Construction Bulletin C-11. The Contractor shall perform, at his entire expense, the work required to substantiate the design, except that casting and testing of strength specimens will be done by the Department. Complete concrete design data shall be submitted to the Engineer for approval.

The Contractor shall determine and measure the batch quantity of each ingredient, including all water, not only for batch designs but for all concrete produced for the project. The mixes shall conform to these specifications and other requirements shown on the plans.

For continuous volumetric mixers the materials delivered during a revolution of the driving mechanism, or in a selected time interval, will be considered a batch and the proportion of each ingredient will be calculated in the same manner as for a batch type plant.

The Contractor may accept a design from the Department; however, this acceptance will not relieve the Contractor of the responsibility of providing concrete meeting the requirements of these specifications.

Mix designs from previous or concurrent jobs may be used without trial batches if it is shown that no substantial change in any of the proposed ingredients has been made.

No charge will be made for existing designs furnished by the Engineer. The cost to the Department of preparing a new mix design will be charged to the Contractor and deducted from the payment for the work.

Trial batches shall be made and tested using all the proposed ingredients prior to the placing of concrete, and when the aggregate, and/or type, brand or source of cement, or admixture is changed. When the brand and/or source of cement only is changed, the Engineer may waive trial batch only if a prior record of satisfactory performance of the cement with the other ingredients has been established.

Trial batches generally shall be made in a mixer of adequate capacity to evaluate the design. The trial batches shall be made in a mixer representative of the mixers to be used. Batch size shall not be less than 50 percent of its rated mixing capacity.

Concrete for pneumatically placed concrete shall be in accordance with Item 431, "Pneumatically Placed Concrete".

The coarse aggregate factor shall be selected in accordance with Construction Bulletin C-11 based on grade of the coarse aggregate and the fineness modulus of the sand.

The Contractor shall have the option of using chemical admixtures with all classes of concrete in accordance with Item 437, "Concrete Admixtures", except where the use of specific admixtures is required or prohibited in this or other items.

When a retarding admixture is required for hot weather concreting, the amount to be used will be as required in Item 437, "Concrete Admixtures", subject to change by the Engineer when required. When used for extended retardation, the amount to be used will be established by several trial batches with varying retarder content and simulating the placing conditions to be encountered and tested in accordance with Tex-440-A.

When entrained air is required, the concrete shall be designed to entrain five (5) percent air when Grade 1 or 2 coarse aggregate is used, six (6) percent when Grade 3 or 4 coarse aggregate is used, and seven (7) percent for Grades 5, 6 or 7 unless otherwise specified by the Engineer. Concrete as placed shall contain the proper amount of entrained air as required herein with a tolerance of plus or minus 1-1/2 percentage points. Acceptance of concrete with occasional variations between 1-1/2 and three (3) percentage points over the specified amount will be based on strength tests as required by the Engineer. Such concrete which fails to meet strength requirements may be accepted on the basis of structural reviews subject to the provisions of Article 420.25. When the quantity of entrained air is found to be more than three (3) percentage points over or two (2) percentage points under those values given herein, the concrete will be rejected.

Entrained air will be required for bridge slabs, top slabs of direct traffic culverts, concrete pavement, dense and regular concrete overlays, piers, bents, precast piling (nonprestressed), drilled shafts placed in water, bridge railing, concrete traffic barrier and for other items of work as may be specified, on the plans or in other specifications. Unless otherwise specified, entrained air will not be required when Class "H" concrete is used for precast traffic barrier or precast bridge repair.

**Table 3**
**SLUMP REQUIREMENTS**

| Concrete Designation | Desired Slump Inches | Max Slump Inches |
|---|---|---|
| A. Structural Concrete | | |
| (1) All drilled shafts | 6 | 7 |
| (2) Thin-Walled Section (9" or less) | 4 | 5 |
| (3) Slabs, Concrete Overlay, Caps, Column piers, Wall sections over 9", etc. | 3 | 4 |
| (4) Prestressed Concrete Members | | |
| (5) Concrete traffic Barrier (cast-in-place or precast), Concrete Bridge Railing | 4 | 5 |
| | 4 | 5 |

| | | |
|---|---|---|
| (6) Dense concrete overlay | 3/4 | 1 |
| (7) Concrete placed underwater | 6 | 7 |
| (8) Concrete with High Range Water Reducer | ____ | 8 |
| B. Concrete Pavement | | |
| C. Riprap, curb, gutter, slip-formed and extruded concrete | 1-1/2 | 3 max<br>1 min |
| | As Approved by the Engineer | |

Note: No concrete will be permitted with a slump in excess of the maximums shown.

When high range water reducing admixtures are used, the slump shall not exceed eight (8) inches.

**421.9. Quality of Concrete.** The concrete shall be uniform, workable and of a consistency acceptable to the Engineer. The cement content, maximum allowable water/cement ratio, the desired and maximum slump, the proper amount of entrained air and the strength requirement for all classes of concrete shall conform to the requirements of these specifications. It shall be the responsibility of the Contractor to provide concrete meeting these requirements.

During the progress of the work, the Engineer will cast test cylinders and/or beams, perform slump and entrained air tests and will make temperature checks, as required, to insure compliance with the specifications.

Unless otherwise shown on the plans the Contractor shall furnish and properly maintain all test molds. The test molds shall meet the requirements of Test Methods Tex-418-A and Tex-448-A and, in the opinion of the Engineer, must be satisfactory for use at the time of use. In addition, the Contractor shall be responsible for furnishing personnel to remove the test specimens from the molds and transport them to the proper curing location at the schedule designated by the Engineer and in accordance with the governing specification. For all concrete items the Contractor shall have a wheelbarrow, or other container acceptable to the Engineer, available to use in the sampling of the concrete. The Contractor is responsible for disposing of used, broken test specimens.

All labor and equipment furnished by the Contractor will be considered subsidiary to the various bid items and will not be paid for directly.

A strength test is defined as the average of the breaking strength of two (2) cylinders or two (2) beams as the case may be. Each specimen will be tested in accordance with Test Methods Tex-418-A or Tex-448-A.

Slump tests will be performed in accordance with Test Method Tex-415-A. Entrained air tests will be performed in accordance with Test Method Tex-416-A.

If the required strength or consistency of the class of concrete being produced cannot be secured with the minimum cement specified or without exceeding the maximum water/cement ratio, the Contractor will be required to furnish different aggregates, use a water reducing agent, an air entraining agent or increase the cement content in order to provide concrete meeting these specifications.

All test specimens, beams or cylinders, representing tests for removal of forms and/or falsework shall be cured using the same methods and under the same conditions as the concrete represented.

"Design Strength" beams and cylinders shall be cast and cured in accordance with Test Method Tex-447-A.

The Contractor shall provide, operate and maintain curing facilities as described in Test Method Tex-447-A, for the purpose of curing test specimens.

When the specified concrete strength is by 28 day compressive strength tests, job control testing will be by seven day compressive strength tests. The minimum strength requirement for seven (7) day tests will be 70 percent of the specified minimum 28 day compressive strength. If the required seven (7) day strength is not obtained with the quantity of cement specified in Table 4, changes in the batch design will be made as specified in this article. For an occasional failure of the seven day compressive test, the concrete may be tested at 28 days for final evaluation.

Strength test requirements for Type II cement will govern when Type I/II cement is used.

**Table 4**

**CLASSES OF CONCRETE**

| Class of Conc. | Cement per C.Y. Min. (sacks) | Min. Comp. Sgth (f'c) 28 Day psi | Min.Flex. Sgth. 7 day psi | Max. Water Cement Ratio Gal/sk | Coarse Aggr. Grade No. | General Usage (information only) |
|---|---|---|---|---|---|---|
| A | 5.0 | 3000 | 425<br>390 (c) | 6.5 | 1-2-<br>3-4-<br>8 (a)<br>(d) | Drilled Shafts; Culverts, except Top Slab of Direct Traffic Culverts; Inlets; Manholes, Headwalls; Appr. Slabs; Curb; Gutter; Curb & Gutter, Conc. Retards; Sidewalks; Driveways; Conc. Pavement; Back-up Walls; Anchors |
| B | 4.0 | 2000 | 280 | 8.0 | 2-3-4-<br>5-6-7 | Riprap,<br><br>Small Roadside Signs and Anchors |
| C | 6.0 | 3600 | 510<br>470 (c) | 6.0 | 1-2-3-<br>4-5<br>(d) | Drilled Shafts; Bridge Substructure; Bridge Railing; Culverts, except Top Slab of Direct Traffic Culverts; Wing Walls; Approach Slab; Concrete Traffic Barrier (cast-in-place) |

| | Cement | Min. | | Max. Water | Coarse | |
|---|---|---|---|---|---|---|

| Class of Conc. | per C.Y. Min. (sacks) | Comp. Sgth (f'c) 28 Day psi | Min.Flex. Sgth. 7 day psi | Cement Ratio Gal/sk | Aggr. Grade No. | General Usage (information only) |
|---|---|---|---|---|---|---|
| D | 3.0 | 1500 | 215 | 11.0 | 2-3-4-5-6-7 | Riprap |
| E | 6.0 | 3000 | 425 | 6.0 | 2-3-4-5 | Seal Concrete |
| F | 6.0 (8.0 Max) | As specified on plans | $\frac{.85\ f'c}{6}$ | 5.5 | 2-3-4-5 | Railroad structures; occasionally for Bridge Piers, Columns or Bents |
| H | 6.0 | As specified on plans | N.A. | 5.5 | 3-4-5-6 | Prestressed Concrete Beams, Boxes, Piling and Concrete Traffic Barrier (Precast) |
| S | 6.5 | 4000 | 570<br>525(c) | 5.0 | 2-3- 4-5 | Bridge Slab; Top Slab of Direct Traffic Culvert; Bridge Substructure |
| P | 5.0 | N.A. | 555(b) | 6.25 | 2-3 | Concrete Pavement |
| DC | 8.75 | 5500 | 720 | 3.6 | 6 | Dense Concrete Overlay |
| CO | 7.0 | 4600 | 640 | 4.5 | 6 | Concrete Overlay |
| SS | 7.0 | 3600 | 510 | 5.5 | 3-4-5 | Slurry Displacement Shafts, Underwater Drilled Shafts |
| K | Requirements as specified on the plans or in other Items. | | | | | |

(a) Grade 8 aggregate for use in extruded curbs, unless a larger size is approved by the Engineer.

(b) Minimum running average for concrete pavement (in accordance with construction Bulletin C-ll).

(c) When Type II or Type I/II cement is used.

(d) Unless otherwise permitted by the Engineer, Grade I coarse aggregate may be used only in massive foundations with four (4) inch minimum clear spacing between reinforcing steel bars. Grade I aggregate may not be used in drilled shafts.

**421.10. Measurement and Payment.** The work performed, materials furnished and all labor, tools, equipment and incidentals necessary to complete the work under this Item will not be measured or paid for directly, but will be considered subsidiary to the various bid items of the contract.

*** * * END OF SECTION * * ***

## SECTION ITEM 440

## REINFORCING STEEL

**440.1. Description.** This Item shall govern for the furnishing and placing of deformed and smooth reinforcing steel, of the sizes and details shown on the plans and in accordance with this Item.

All Producing Mills of reinforcing steel for the Texas Department of Transportation use shall be preapproved by the Division of Materials and Tests prior to furnishing reinforcing steel. Preapproval will be in accordance with Test Method Tex-741-I. A list of Department approved Producing Mills will be maintained by the Division of Materials and Tests. Reinforcing steel obtained from unapproved sources will not be permitted.

All reinforcing steel to be epoxy coated will be designated on the plans. Epoxy coating of reinforcing steel shall be in accordance with "Epoxy Coating of Reinforcing Steel" of this Item.

All epoxy applicators shall be preapproved by the Division of Materials and Tests prior to furnishing epoxy coated reinforcing steel. Preapproval will be in accordance with Test Method Tex-742-I. A list of Department approved applicators will be maintained by the Division of Materials and Tests.

**440.2. Materials.** Unless otherwise shown on the plans or specified herein, the reinforcing steel shall be Grade 60 and all bar reinforcement shall be deformed, conforming to one of the following:

**(1)** ASTM A615, Grades 40 or 60, open hearth, basic oxygen, or electric furnace new billet steel.

**(2)** ASTM A617, Grades 40 or 60, axle-steel.

**(3)** ASTM A616, Grade 60, rail steel will be permitted in concrete pavement only. ASTM A616 bars shall be furnished as straight bars only and bending is prohibited. Bend tests will not be required.

**(4)** ASTM A706, Grade 60, weldable reinforcing steel.

**(5)** Smooth Bars. Smooth bars for concrete pavement shall have a minimum yield strength of 60 ksi.

All other smooth bars, larger than No. 4, may be steel conforming to the above or may be furnished in any steel that meets the physical requirements of ASTM A36.

**(6)** Spiral reinforcement shall be either smooth or deformed bars, or wire, of the minimum size or gage shown on the plans, or as specified herein.

Bars for spiral reinforcement shall comply with ASTM A675, Grade 80 (reference to ASTM A29 is voided) A615 or A617, Grade 40, unless otherwise shown on the plans. Smooth wire shall comply with ASTM A82 and deformed wire shall comply with ASTM A496.

In cases where the provisions of this Item are in conflict with the provisions of the ASTM Specification, the provisions of this Item shall govern.

Reinforcing steel to be structurally welded shall comply with ASTM A706 or shall have a carbon equivalency (C.E.) of not more than 0.55 %. A report of chemical analysis, showing the percentages of all elements necessary to establish the carbon equivalency, will be required for all reinforcing steel that is to be structurally welded. The above requirements do not pertain to miscellaneous welds on reinforcing steel as defined in Item 448, "Structural Field Welding."

Carbon equivalency will be calculated using the following formula:

$$C.E. = \%C + \frac{\%Mn}{6} + \frac{\%Cu}{40} + \frac{\%Ni}{20} + \frac{\%Cr}{10} - \frac{\%Mo}{50} - \frac{\%V}{10}$$

The nominal size, area and weight of reinforcing steel bars covered by this specification are as follows:

| BAR SIZE NUMBER | NOMINAL DIAMETER IN. | NOMINA AREA SQ. IN. | WEIGHT PER LINEAR FT. |
|---|---|---|---|
| 2 | 0.250 | 0.05 | 0.167 |
| 3 | 0.375 | 0.11 | 0.376 |
| 4 | 0.500 | 0.20 | 0.668 |
| 5 | 0.625 | 0.31 | 1.043 |
| 6 | 0.750 | 0.44 | 1.502 |
| 7 | 0.875 | 0.60 | 2.044 |
| 8 | 1.000 | 0.79 | 2.670 |
| 9 | 1.128 | 1.00 | 3.400 |
| 10 | 1.270 | 1.27 | 4.303 |
| 11 | 1.410 | 1.56 | 5.313 |
| 14 | 1.693 | 2.25 | 7.65 |
| 18 | 2.257 | 4.00 | 13.60 |

Smooth round bars shall be designated by size number through No. 4. Smooth bars above No. 4 shall be designated by diameter in inches.

**(7)** Wire for fabric reinforcement shall conform to ASTM A82 or A496. Wire fabric shall conform to ASTM A185 or A497.

When wire is ordered by size numbers, the following relation between size number, diameter in inches and area shall apply unless otherwise specified. Where deformed wire is required, the size number shall be preceded by "D," and for smooth wire the prefix shall be "W."

| SIZE NUMBER | NOMINAL DIAMETER IN. | NOMINAL AREA SQ. IN. |
|---|---|---|
| 30 | .0618 | 0.300 |
| 28 | 0.597 | 0.280 |
| 26 | 0.575 | 0.260 |
| 24 | 0.553 | 0.240 |
| 22 | 0.529 | 0.220 |
| 20 | 0.505 | 0.200 |
| 18 | 0.479 | 0.180 |
| 16 | 0.451 | 0.160 |
| 14 | 0.422 | 0.140 |
| 12 | 0.391 | 0.120 |
| 10 | 0.357 | 0.100 |
| 8 | 0.319 | 0.080 |
| 7 | 0.299 | 0.070 |
| 6 | 0.276 | 0.060 |
| 5.5 | 0.265 | 0.055 |
| 5 | 0.252 | 0.050 |
| 4.5 | 0.239 | 0.045 |
| 4 | 0.226 | 0.040 |
| 3.5 | 0.211 | 0.035 |
| 3 | 0.195 | 0.030 |
| 2.5 | 0.178 | 0.025 |
| 2 | 0.160 | 0.020 |
| 1.5 | 0.138 | 0.015 |
| 1.2 | 0.124 | 0.012 |
| 1 | 0.113 | 0.010 |
| 0.5 | 0.080 | 0.005 |

**Note**: Fractional sizes between the sizes listed above are also available and acceptable for use.

Welded wire fabric will be designated as shown in the following example:

6 x 12 - W16 x W8; indicating six (6) inch longitudinal wire spacing and 12 inch transverse Wire spacing with smooth number 16 wire longitudinally and smooth number 8 wire transversely.

**(8) Epoxy Coating.** The epoxy coating material and the material used for the repair of the coating shall comply with the Departmental Materials Specification D-9-8130, "Epoxy Powder Coating For Reinforcing Steel." Copies of the Departmental Materials Specifications are available from the Texas Department of Transportation, Division of Materials and Tests, 125 East 11th Street, Austin, Texas 78701-2483. An eight (8) ounce sample of epoxy powder and manufacturer's certifications will be required for each lot of epoxy powder used to coat materials for Department projects.

**440.3. Bending.** The reinforcement shall be bent cold, true to the shapes shown on the plans. Fabrication shall preferably be done in the shop. Field fabrication, if permitted, shall be done with equipment approved by the Engineer. Misfabricated, damaged or broken bars shall be rejected and replaced at the Contractor's expense. Damaged or broken bars imbedded in a previous concrete placement may be repaired with the approval of the Engineer.

Unless otherwise shown on the plans, the inside diameter of bar bends, in terms of the nominal bar diameter (d), shall be as follows:

Bends of 90° and greater in stirrups, ties and other secondary bars that enclose another bar in the bend shall be:

| | |
|---|---|
| #3, #4, #5 | 4d |
| #6, #7, #8 | 6d |

All bends in main bars and in secondary bars not covered above shall be:

| | |
|---|---|
| #3 thru #8 | 6d |
| #9, #10, #11 | 8d |
| #14, #18 | 10d |

Where bending of Grade 60 bars, sizes No. 14 or No. 18, is required, bend testing shall be performed on representative specimens as described for smaller bars in the applicable ASTM Specification. The required bend shall be 90 degrees around a pin having a diameter of 10 times the nominal diameter of the bar.

**440.4. Tolerances.** Fabricating tolerances for bars, from plan dimensions, shall not be greater than shown in Figure 1.

**440.5. Storing.** Steel reinforcement shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected from damage and deterioration as approved by the Engineer. When placed in the work, reinforcement shall be free from dirt, paint, grease, oil, or other foreign materials. Reinforcement shall be free from defects such as cracks and laminations. Rust, surface seams, surface irregularities or mill scale will not be cause for rejection, provided the minimum cross-sectional area of a hand wire brushed specimen meets the requirements for the size of steel specified.

**440.6. Splices.** Splicing of bars, lap spliced or welded, shall be as shown on the plans or specified herein. Additional splices will require written approval of the Engineer.

Splices not provided for on the plans will be permitted in slabs 15 inches or less in thickness, columns, walls and parapets, but will not be included for measurement, subject to the following:

Unless otherwise approved by the Engineer, splices will not be permitted in bars 30 feet or less in plan length. For bars exceeding 30 feet in plan length, the distance center to center of splices shall not be less than 30 feet minus one splice length, with no more than one individual bar length less than 10 feet. Lap splices not shown on the plans, but permitted herein, shall be made in accordance with Table 1. The specified concrete cover and proper spacing shall be maintained at such splices and the lap spliced bars placed in contact and securely tied together.

**TABLE 1**
**Minimum Lap Requirements**
**for Bar Sizes Through No. 11**

| | LAP LENTH | |
|---|---|---|
| **SIZE** | **UNCOATED** | **COATED** |
| No. 3 | 1'-0" | 1'-6" |
| No. 4 | 1'-6" | 2'-3" |
| No. 5 | 1'-10" | 2'-9" |
| No. 6 | 2'-3" | 3'-4" |
| No. 7 | 3'-0" | 4'-6" |
| No. 8 | 3'-9" | 5'-7" |
| No. 9 | 4'-8" | 7'-0" |
| No. 10 | 5'-7" | 8'-4" |
| No. 11 | 6'-7" | 9'-10" |

Spiral steel shall be lapped a minimum of one turn.

Bar sizes No. 14 and No. 18 may not be lapped.

Welded splices shall conform to the requirements of the plans and Item 448, "Structural Field Welding." End preparation for butt welding reinforcing bars shall be done in the field. Delivered bars shall be of sufficient length to permit weld preparation.

Welded wire fabric shall be spliced using a lap length that will include the overlap of a minimum of two (2) cross wires plus two (2) inches on each sheet or roll. Splices using bars which develop equivalent strength and lapped in accordance with Table 1 will be permitted.

For box culvert extensions with less than one (1) foot of fill, the existing longitudinal bars shall have a lap with the new bars as shown in Table 1. For extensions with more than one (1) foot of fill, a minimum of six (6) inch lap will be required.

**440.7. Mechanical Couplers.**

**(1) General.** When shown on the plans, mechanical splices may be made in the reinforcing steel bars using one of the following types:

Sleeve-Filler Type
Sleeve-Threaded Type
Sleeve-Swaged Type
Sleeve-Wedge Type

All couplers furnished by the Contractor shall be produced by a prequalified manufacturer. Prequalification shall be in accordance with Departmental Material Specification D-9-4510. Sleeve-wedge type couplers will not be permitted on coated reinforcing.

**(2) Project Samples.** For purposes of sampling couplers for use on an individual project, a lot of couplers shall be defined as 500 couplers, or fraction thereof, for each size and type. Prior to use on the project, three (3) test specimens shall be assembled using couplers selected at random from each lot received on the project. All test specimens shall be assembled from materials consigned to the project and shall be assembled in the presence of the Engineer. A test specimen shall consist of a coupler connecting two (2) 21 inch, or longer, bars using the same splice materials, position, equipment and procedures to be used to make splices in the work. The assembled test specimens shall be submitted to the Division of Materials and Tests for testing. Each lot of couplers shall be identified with tags or markings identifying the lot from which the samples were taken.

**(3) Testing.** Project samples will be tested to 125% of specified yield strength and for total slip requirements. When a test representing a lot of couplers fails to meet the requirements, four (4) additional couplers from that lot will be tested. If all four (4) tests meet the requirements, the lot will be accepted for use in the work. If any of the four (4) tests fail to meet the requirements, that lot of couplers will be rejected and not used in the work.

**(4) Construction Methods.** All coupling devices shall be installed in accordance with the manufacturer's recommendations. Protection of threaded male or female connections shall be provided and the threaded connections shall be clean when making the connection. Damaged threads shall not be repaired.

**(5) Alternate Equivalent Strength.** Alternate equivalent strength arrangements to be accomplished by substituting larger bar sizes, or more bars, will be considered if approved by the Engineer, in writing, prior to the fabrication of the systems.

**440.8. Placing.** Unless otherwise shown on the plans, dimensions shown for reinforcement are to the centers of the bars. Reinforcement shall be placed as near as possible in the position shown on the plans. In the plane of the steel parallel to the nearest surface of concrete, bars shall not vary from plan placement by more than 1/12 of the spacing between bars. In the plane of the steel perpendicular to the nearest surface of concrete, bars shall not vary from plan placement by more than 1/4 inch. Cover of concrete to the nearest surface of steel shall meet the above requirements but shall never be less than one (1) inch.

For bridge slabs, the clear cover tolerance for the top mat of reinforcement shall be -0, + 1/2 inch.

The reinforcement shall be accurately located in the forms, and firmly held in place, before and during concrete placement, by means of bar supports, adequate in strength and number in order to prevent displacement and to keep the steel at the proper distance from the forms. Bars shall be supported by standard bar supports with plastic tips, plastic bar supports approved by the Engineer or precast mortar or concrete blocks when supports are in contact with removable or stay-in-place forms. Bright basic bar supports may be used to support reinforcing steel placed in slab overlays on concrete panels or on existing concrete slabs. Bar supports in contact with soil or subgrade shall be as approved by the Engineer.

For bar supports with plastic tips, the plastic protection shall have a minimum thickness of 3/32 of an inch and extend upward on the wire to a point at least 1/2 inch above the formwork.

All accessories such as tie wires, bar chairs, supports or clips used with epoxy coated reinforcement shall be of steel, fully coated with epoxy or plastic. Plastic supports approved by the

Engineer may also be used with epoxy coated reinforcement.

Mortar or concrete blocks shall be cast to uniform dimensions with adequate bearing area. A suitable tie wire shall be provided in each block for anchoring to the steel. The blocks shall be accurately cast to the thickness required in molds approved by the Engineer. The surface placed adjacent to the form shall be a true plane, free of surface imperfections. The blocks shall be cured by covering with wet burlap or mats for a period of 72 hours. Mortar for blocks shall contain approximately one (1) part portland cement to three (3) parts sand. Concrete for blocks shall contain nine (9) sacks of portland cement per cubic yard of concrete.

Individual bar supports shall be placed in rows at four (4) foot maximum spacing in each direction. Continuous type bar supports shall be placed at four (4) feet maximum spacing. Continuous bar supports will be required when permanent metal deck forms are used.

The exposure of the ends of longitudinals, stirrups and spacers used to position the reinforcement in concrete pipe and precast box culverts or sewers shall not be cause for rejection.

Reinforcing steel for bridge slabs, top slabs of direct traffic culverts and the top slabs of pre-stressed box beams shall be tied at all intersections except that where the spacing is less than one (1) foot in each direction, alternate intersections only need to be tied. For reinforcing steel cages for other structural members, the steel shall be tied at a sufficient number of intersections to provide a rigid cage of steel. Mats of wire fabric shall be fastened securely at the ends and edges.

Before concrete placement, all mortar, mud, dirt, etc., shall be cleaned from the reinforcement. Concrete shall not be placed until authorized by the Engineer.

If the reinforcement is not adequately supported or tied to resist settlement, floating upward, overturning of truss bars, or movement in any direction during concrete placement, concrete placement will be halted until corrective measures are taken.

**440.9 Epoxy Coating of Reinforcing Steel.**

**(1) General.** When shown on the plans, coating with epoxy of reinforcing bars, plain wire, deformed wire or welded wire fabric to be used as reinforcement for concrete shall conform to the requirements herein.

**(2) Surface Preparation.** The reinforcing steel shall be free of surface contaminants such as oil, grease or paint when received at the manufacturer's plant and prior to cleaning and coating. The surface of steel to be coated shall be cleaned by abrasive blast cleaning to near white metal in accordance with the requirements of Item 446, "Cleaning, Paint and Painting," Class A Blast Cleaning. All traces of grit and dust from the blast cleaning shall be removed prior to coating. Other methods of cleaning may be submitted to the Engineer for approval.

**(3) Application of Coating.** The applicator shall notify the Engineer at least 30 days before the date of production. The coating shall be applied as recommended by the manufacturer of the coating material.

The coating shall be applied to the cleaned surface as soon as possible after cleaning and before oxidation of the surface discernible to the unaided eye occurs. The coating shall be a

smooth uniform coat and shall have a thickness of from 7 to 12 mils, after curing. The thickness of the coating shall be measured using magnetic thickness testing gages in accordance with Test Method Tex-728-I.

The coating film shall be fully cured. Sufficient checks shall be made to assure that each coated production lot is supplied in a fully cured condition.

**(4) Continuity of Coating.** The applicator shall check the coating for continuity after curing. The coating shall be free from holes, voids, cracks, contamination and damaged areas discernible to the unaided eye.

For reinforcing bars a 67 1/2 volt D.C. in-line holiday detector, such as Tinker and Rasor Model M-1 or approved equivalent, shall be used to check the coating for holidays. There shall be no more than two (2) holidays (pinholes not visually discernible) in any linear foot of a coated reinforcing bar.

Holiday checks to determine acceptability of wire or welded wire fabric shall be made at the manufacturer's plant with a 67 1/2 volt D.C. holiday detector. For wire, there shall not be more than an average of two (2) holidays per linear foot of wire. For welded wire fabric, there shall not be more than an average of four (4) holidays per linear foot of wire in welded wire fabric when the wire spacings are four (4) inches or more, or six (6) holidays per linear foot of wire when the spacings are less than four (4) inches. Uncoated areas at cut ends shall not be counted, nor shall sharp edges (weld spurs) at intersections be counted as holidays. When measuring the number of holidays, at least 1/2 inch of wire must be included on each side of the intersections being checked.

**(5) Repair of Coating.** Material for repair of the coating shall comply with the requirements in "Epoxy Coating" of this Item. Repairs shall be made in accordance with procedures recommended by the manufacturer of the epoxy coating powder. Areas to be patched shall receive at least the same coating thickness as required for the original coating.

All visible damage to the coating shall be repaired.

Sawed and sheared ends, cuts, breaks and/or other damage shall be repaired promptly before additional oxidation occurs. Areas to be repaired shall be clean and free from surface contaminants. Repairs shall be made in the shop or in the field as required.

The acceptable amount of patched area at the applicator shall not exceed 1/4 inch total length in any linear foot.

**(6) Sampling and Testing.** Sampling and testing of coated reinforcement shall be in accordance with Test Method Tex-739-I.

**(7) Identification and Documentation.** Identification of all reinforcing shall be maintained throughout the coating and fabrication process and until delivery to the project site.

For all production of coated reinforcing steel to be used on Department projects, the manufacturer shall furnish to the Engineer two (2) copies of a written certification that the coated reinforcing steel meets the requirements of this specification and two (2) copies of the manufacturer's control tests.

**(8) Handling.** All systems for handling coated reinforcement shall have padded contact areas. Bundling bands shall be padded or suitable banding shall be used to prevent damage to the coating. Bundles of coated reinforcement shall be lifted with a strong back, spreader bar, multiple supports or a platform bridge. The bundled reinforcement shall be transported with care and stored on protective cribbing. The coated reinforcement shall not be dropped or dragged.

**(9) Construction Methods.** Flame cutting will not be permitted on coated reinforcement. Saw or shear cutting will be permitted with permission of the Engineer. Cut ends shall be coated as specified in "Repair of Coating" of this Item.

Welding or mechanical coupling of coated reinforcing steel will not be permitted except where specifically shown on the plans. The epoxy coating shall be completely removed a minimum of six (6) inches beyond the weld limits prior to welding and two (2) inches beyond the limits of the coupler prior to assembly. After welding or coupling, the steel shall be cleaned of all oil, grease, moisture, dirt, welding contamination (slag and/or acid residue) and rust to a near white finish. The existing epoxy shall be checked for damage. Any damaged or loose epoxy shall be removed back to sound epoxy coating.

After proper cleaning, the splice area shall be coated with epoxy repair material to a thickness of 7 to 12 mils. A second application of repair material shall be applied to the bar and coupler interface to insure complete sealing of the joint.

**440.10. Measurement and Payment.**

Except as specified below, the work performed, materials furnished, and all labor, tools, equipment and incidentals necessary to complete the work under this Item will not be measured or paid for directly, but will be considered subsidiary to the various bid items of the contract.

The quantities of reinforcing steel shown on the plans are estimates and are for the Contractor's information.

Compensation for adjustment of reinforcing steel quantities will be as follows:

(1) When the reinforcing steel quantity for a complete structure element has been erroneously included in or omitted from the quantities shown on the plans, the quantity for that element will be added or deducted for payment. A complete structure element will be the smallest portion of a total structure for which a corresponding quantity of concrete is included on the plans. Additional payment or reduction in payment for quantities revised in this manner will be made accordingly, in accordance with Article 4.3.

(2) When the plan quantity for reinforcing steel for a complete structure element is in error by five (5) percent or more, a recalculation will be made and payment will be increased or reduced accordingly in accordance with Article 4.3.

(3) When quantities for reinforcing steel are revised by a change in design, the change in quantities will be calculated. Additional payment or reduction in payment for quantities revised in this manner will be made accordingly, in accordance with Article 4.3.

The party to the contract requesting the adjustment shall present to the other one (1) copy of the description and location, together with calculations of the quantity for the structure element involved. When this quantity is certified correct by the Engineer, it will become the basis for additional or reduced payment.

*****END OF SECTION*****

# SECTION ITEM 506
# TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

**506.1. Description.** Install, maintain, and remove erosion, sedimentation, and environmental control devices. Remove accumulated sediment and debris.

**506.2. Materials.**

**A. Rock Filter Dams.**

**1. Aggregate.** Furnish aggregate with hardness, durability, cleanliness, and resistance to crumbling, flaking, and eroding acceptable to the Engineer. Provide the following:

• **Types 1, 2, and 4 Rock Filter Dams.** Use 3 to 6 in. aggregate.

• **Type 3 Rock Filter Dams.** Use 4 to 8 in. aggregate.

**2. Wire.** Provide minimum 20 gauge galvanized wire for the steel wire mesh and tie wires for Types 2 and 3 rock filter dams. Type 4 dams require:

• a double-twisted, hexagonal weave with a nominal mesh opening of 2-1/2 in. x 3-1/4 in.;

• minimum 0.0866 in. steel wire for netting;

• minimum 0.1063 in. steel wire for selvages and corners; and minimum 0.0866 in. for binding or tie wire.

**3. Sandbag Material.** Furnish sandbags meeting Section 506.2.I, “Sandbags,” except that any gradation of aggregate may be used to fill the sandbags.

**B. Temporary Pipe Slope Drains.** Provide corrugated metal pipe, polyvinyl chloride (PVC) pipe, flexible tubing, watertight connection bands, grommet materials, prefabricated fittings, and flared entrance sections that conform to the plans. Recycled and other materials meeting these requirements are allowed if approved. Furnish concrete in accordance with Item 432, “Riprap.”

**C. Baled Hay.** Provide hay bales weighing at least 50 lb., composed entirely of vegetable matter, measuring 30 in. or longer, and bound with wire, nylon, or polypropylene string.

**D. Temporary Paved Flumes.** Furnish asphalt concrete, hydraulic cement concrete, or other comparable non-erodible material that conforms to the plans. Provide rock or rubble with a minimum diameter of 6 in. and a maximum volume of 1/2 cu. ft. for the construction of energy dissipaters.

**E. Construction Exits.** Provide materials that meet the details shown on the plans and this Section.

**1. Rock Construction Exit.** Provide crushed aggregate for long and short-term construction exits. Furnish aggregates that are clean, hard, durable, and free from adherent coatings such as salt, alkali, dirt, clay, loam, shale, soft, or flaky materials and organic and injurious matter. Use 4- to 8-in. aggregate for Type 1 and 2- to 4-in. aggregate for Type 3.

**2. Timber Construction Exit.** Furnish No. 2 quality or better railroad ties and timbers for long-term construction exits, free of large and loose knots and treated to control rot. Fasten timbers with nuts and bolts or lag bolts, of at least 1/2 in. diameter, unless otherwise shown on the plans or allowed. For short-term exits, provide plywood or pressed wafer board at least 1/2 in. thick.

**3. Foundation Course.** Provide a foundation course consisting of flexible base, bituminous concrete, hydraulic cement concrete, or other materials as shown on the plans or directed.

**F. Embankment for Erosion Control.** Provide rock, loam, clay, topsoil, or other earth materials that will form a stable embankment to meet the intended use.

**G. Pipe.** Provide pipe outlet material in accordance with Item 556, "Pipe Underdrains," and details shown on the plans.

**H. Construction Perimeter Fence.**

**1. Posts.** Provide essentially straight wood or steel posts that are at least 60 in. long. Furnish soft wood posts with a minimum diameter of 3 in. or use 2 x 4 boards. Furnish hardwood posts with a minimum cross-section of 1-1/2 x 1-1/5 in. Furnish T- or L-shaped steel posts with a minimum weight of 1.3 lb. per foot.

**2. Fence.** Provide orange construction fencing as approved by the Engineer.

**3. Fence Wire.** Provide 12-1/2 gauge or larger galvanized smooth or twisted wire. Provide16 gauge or larger tie wire.

**4. Flagging.** Provide brightly-colored flagging that is fade-resistant and at least 3/4 in. wide to provide maximum visibility both day and night.

**5. Staples.** Provide staples with a crown at least 1/2 in. wide and legs at least 1/2 in. long.

**6. Used Materials.** Previously used materials meeting the applicable requirements may be used if accepted by the Engineer.

**I. Sandbags.** Provide sandbag material of polypropylene, polyethylene, or polyamide woven fabric with a minimum unit weight of 4 oz. per square yard, a Mullen burst-strength exceeding 300 psi, and an ultraviolet stability exceeding 70%.

Use natural coarse sand or manufactured sand meeting the gradation given in Table 1 to fill sandbags. Filled sandbags must be 24 to 30 in. long, 16 to 18 in. wide, and 6 to 8 in. thick.

| **Table 1 – Sand Gradation** | |
|---|---|
| **Sieve Number** | **Retained (% by Weight)** |
| 4 | 3% |
| 100 | 80% |
| 200 | 95% |

**J. Temporary Sediment Control Fence.** Provide a net-reinforced fence using woven geo-textile fabric. Logos visible to the traveling public will not be allowed.

**1. Fabric.** Provide fabric materials in accordance with DMS-6230, "Temporary Sediment Control Fence Fabric."

**2. Posts.** Provide essentially straight wood or steel posts with a minimum length of 48 in., unless otherwise shown on the plans.

Soft wood posts must be at least 3 in. in diameter or nominal 2 x 4 in. Hardwood posts must have a minimum cross-section of 1-1/2 x 1-1/2 in. T- or L-shaped steel posts must have a minimum weight of 1.3 lb. per foot.

**3. Net Reinforcement.** Provide net reinforcement of at least 12-1/2 gauge galvanized welded wire mesh, with a maximum opening size of 2 x 4 in., at least 24 in. wide, unless otherwise
shown on the plans.

**4. Staples.** Provide staples with a crown at least 3/4 in. wide and legs 1/2 in. long.

**5. Used Materials.** Use recycled material meeting the applicable requirements if accepted by the Engineer.

**506.3. Equipment.** Provide a backhoe, front end loader, blade, scraper, bulldozer, or other equipment as required when "Earthwork for Erosion Control" is specified on the plans as a bid item.

**506.4. Construction.**

**A. Contractor Responsibilities.** Implement the Department's Storm Water Pollution Prevention Plan (SWP3) for the project site in accordance with the specific or general storm water permit requirements. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Department's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

**B. General.**

**1. Phasing.** Implement control measures in the area to be disturbed before beginning construction, or as directed. Limit the disturbance to the area shown on the plans or as directed. If, in the opinion of the Engineer, the Contractor cannot control soil erosion and sedimentation resulting from construction operations, the Engineer will limit the disturbed area to that which the Contractor is able to control. Minimize disturbance to vegetation.

**2. Maintenance.** Immediately correct ineffective control measures. Implement additional controls as directed. Remove excavated material within the time requirements specified in the applicable storm water permit.

**3. Stabilization.** Stabilize disturbed areas where construction activities will be temporarily stopped in accordance with the applicable storm water permit. Establish a uniform vegetative
cover. The project will not be accepted until a 70% density of existing adjacent undisturbed areas is obtained, unless otherwise shown on the plans. When shown on the plans, the Engineer may accept the project when adequate controls are in place that will control erosion, sedimentation, and water pollution until sufficient vegetative cover can be established.

**4. Finished Work.** Upon acceptance of vegetative cover, remove and dispose of all temporary control measures, temporary embankments, bridges, matting, falsework, piling, debris, or other obstructions placed during construction that are not a part of the finished work, or as directed.

**5. Restricted Activities.** Do not locate disposal areas, stockpiles, or haul roads in any wetland, water body, or streambed. Do not install temporary construction crossings in or across any water body without the prior approval of the appropriate resource agency and the Engineer. Restrict construction operations in any water body to the necessary areas as shown on the plans or applicable permit, or as directed. Use temporary bridges, timber mats, or other structurally sound and non-eroding material for stream crossings. Provide protected storage area for paints, chemicals, solvents, and fertilizers at an approved location. Keep paints, chemicals, solvents, and fertilizers off bare ground and provide shelter for stored chemicals.

**C. Installation, Maintenance, and Removal Work.** Perform work in accordance with the specific or general storm water permit. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until earthwork construction and permanent erosion control features are in place or the disturbed area has been

adequately stabilized as determined by the Engineer. If a device ceases to function as intended, repair or replace the device or portions thereof as necessary. Remove sediment, debris, and litter. When approved, sediments may be disposed of within embankments, or in the right of way in areas where the material will not contribute to further siltation. Dispose of removed material in accordance with federal, state, and local regulations. Remove devices upon approval or when directed. Upon removal, finish-grade and dress the area. Stabilize disturbed areas in accordance with the permit, and as shown on the plans or directed. The Contractor retains ownership of stockpiled material and must remove it from the project when new installations or replacements are no longer required.

**1. Rock Filter Dams for Erosion Control.** Remove trees, brush, stumps, and other objectionable material that may interfere with the construction of rock filter dams. Place sandbags as a foundation when required or at the Contractor's option. For Types 1, 2, 3, and 5, place the aggregate to the lines, height, and slopes specified, without undue voids. For Types 2 and 3, place the aggregate on the mesh and then fold the mesh at the upstream side over the aggregate and secure it to itself on the downstream side with wire ties, or hog rings, or as directed. Place rock filter dams perpendicular to the flow of the stream or channel unless otherwise directed. Construct filter dams according to the following criteria, unless otherwise shown on the plans:

**a. Type 1 (Non-reinforced).**

**(1) Height.** At least 18 in. measured vertically from existing ground to top of filter dam.

**(2) Top Width.** At least 2 ft.

**(3) Slopes.** At most 2:1.

**b. Type 2 (Reinforced).**

**(1) Height.** At least 18 in. measured vertically from existing ground to top of filter dam.

**(2) Top Width.** At least 2 ft.

**(3) Slopes.** At most 2:1.

**c. Type 3 (Reinforced).**

**(1) Height.** At least 36 in. measured vertically from existing ground to top of filter dam.

**(2) Top Width.** At least 2 ft.

**(3) Slopes.** At most 2:1.

**D. Type 4 (Sack Gabions).** Unfold sack gabions and smooth out kinks and bends. For vertical filling, connect the sides by lacing in a single loop–double loop pattern on 4- to 5-in. spacing. At one end, pull the end lacing rod until tight, wrap around the end, and twist 4 times. At the filling end, fill with stone, pull the rod tight, cut the wire with approximately 6 in. remaining, and twist wires 4 times. For horizontal filling, place sack flat in a filling trough, fill with stone, and connect sides and secure ends as described above. Lift and place without damaging the gabion. Shape sack gabions to existing contours.

**E. Type 5.** Provide rock filter dams as shown on the plans.

**1. Temporary Pipe Slope Drains.** Install pipe with a slope as shown on the plans or as directed. Construct embankment for the drainage system in 8-in. lifts to the required elevations. Hand-tamp the soil around and under the entrance section to the top of the embankment as shown on the plans or as directed. Form the top of the embankment or earth dike over the pipe slope drain at least 1 ft. higher than the top of the inlet pipe

at all points. Secure the pipe with hold-downs or hold-down grommets spaced a maximum of 10 ft. on center. Construct the energy dissipators or sediment traps as shown on the plans or as directed. Construct the sediment trap using concrete or rubble riprap in accordance with Item 432, “Riprap,” when designated on the plans.

**2. Baled Hay for Erosion and Sedimentation Control.** Install hay bales at locations shown on the plans by embedding in the soil at least 4 in. and, where possible, approximately 1/2 the height of the bale, or as directed. Fill gaps between bales with hay.

**3. Temporary Paved Flumes.** Construct paved flumes as shown on the plans or as directed. Provide excavation and embankment (including compaction of the subgrade) of material to the dimensions shown on the plans, unless otherwise indicated. Install a rock or rubble riprap energy dissipater, constructed from the materials specified above to a minimum depth of 9 in. at the flume outlet to the limits shown on the plans or as directed.

**4. Construction Exits.** When tracking conditions exist, prevent traffic from crossing or exiting the construction site or moving directly onto a public roadway, alley, sidewalk, parking area, or other right of way areas other than at the location of construction exits. Construct exits for either long or short-term use.

**a. Long-Term.** Place the exit over a foundation course, if necessary. Grade the foundation course or compacted subgrade to direct runoff from the construction exits to a sediment trap as shown on the plans or as directed. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed.

**(1) Type 1.** Construct to a depth of at least 8 in. using crushed aggregate as shown on the plans or as directed.

**(2) Type 2.** Construct using railroad ties and timbers as shown on the plans or as directed.

**b. Short-Term.**

**(1) Type 3.** Construct using crushed aggregate, plywood, or wafer board. This type of exit may be used for daily operations where long-term exits are not practical.

**(2) Type 4.** Construct as shown on the plans or as directed.

**6. Earthwork for Erosion Control.** Perform excavation and embankment operations to minimize erosion and to remove collected sediments from other erosion control devices.

**a. Excavation and Embankment for Erosion ControlFeatures.** Place earth dikes, swales, or combinations of both along the low crown of daily lift placement, or as directed, to prevent runoff spillover. Place swales and dikes at other locations as shown on the plans or as directed to prevent runoff spillover or to divert runoff. Construct cuts with the low end blocked with undisturbed earth to prevent erosion of hillsides. Construct sediment traps at drainage structures in conjunction with other erosion control measures as shown on the plans or as directed. Where required, create a sediment basin providing 3,600 cu. ft. of storage per acre drained, or equivalent control measures for drainage locations that serve an area with 10 or more disturbed acres at one time, not including offsite areas.

**b. Excavation of Sediment and Debris.** Remove sediment and debris when accumulation affects the performance of the devices, after a rain, and when directed.

**7. Construction Perimeter Fence.** Construct, align, and locate fencing as shown on the plans or as directed.

**a. Installation of Posts.** Embed posts 18 in. deep or adequately anchor in rock, with a spacing of 8 to 10 ft.

**b. Wire Attachment.** Attach the top wire to the posts at least 3 ft. from the ground. Attach the lower wire midway between the ground and the top wire.

**c. Flag Attachment.** Attach flagging to both wire strands midway between each post. Use flagging at least 18 in. long. Tie flagging to the wire using a square knot.

**8. Sandbags for Erosion Control.** Construct a berm or dam of sandbags that will intercept sediment-laden storm water runoff from disturbed areas, create a retention pond, detain sediment, and release water in sheet flow. Fill each bag with sand so that at least the top 6 in. of the bag is unfilled to allow for proper tying of the open end. Place the sandbags with their tied ends in the same direction. Offset subsequent rows of sandbags 1/2 the length of the preceding row. Place a single layer of sandbags downstream as a secondary debris trap. Place additional sandbags as necessary or as directed for supplementary support to berms or dams of sandbags or earth.

**9. Temporary Sediment-Control Fence.** Provide temporary sediment-control fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the fence into erosion-control measures used to control sediment in areas of higher flow. Install the fence as shown on the plans, as specified in this Section, or as directed.

**a. Installation of Posts.** Embed posts at least 18 in. deep, or adequately anchor, if in rock, with a spacing of 6 to 8 ft. and install on a slight angle toward the run-off source.

**b. Fabric Anchoring.** Dig trenches along the uphill side of the fence to anchor 6 to 8 in. of fabric. Provide a minimum trench cross-section of 6 x 6 in. Place the fabric against the side of the trench and align approximately 2 in of fabric along the bottom in the upstream direction. Backfill the trench, then hand-tamp.

**c. Fabric and Net Reinforcement Attachment.** Unless otherwise shown under the plans, attach the reinforcement to wooden posts with staples, or to steel posts with T-clips, in at least 4 places equally spaced. Sewn vertical pockets may be used to attached reinforcement to end posts. Fasten the fabric to the top strand of reinforcement by hog rings or cord every 15 in. or less.

**d. Fabric and Net Splices.** Locate splices at a fence post with a minimum lap of 6 in. attached in at least 6 places equally spaced, unless otherwise shown under the plans. Do not locate splices in concentrated flow areas.

Requirements for installation of used temporary sediment control fence include the following:

- fabric with minimal or no visible signs of biodegradation (weak fibers),
- fabric without excessive patching (more than 1 patch every 15 to 20 ft.),
- posts without bends, and
- backing without holes.

**506.5. Measurement.**

**A. Rock Filter Dams.** Installation or removal of rock filter dams will be measured by the foot or by the cubic yard. The measured volume will include sandbags, when used.

**1. Linear Measurement.** When rock filter dams are measured by the foot, measurement will be along the centerline of the top of the dam.

**2. Volume Measurement.** When rock filter dams are measured by the cubic yard, measurement will be based on the volume of rock computed by the method of average end areas.

**a. Installation.** Measurement will be made in final position.

**b. Removal.** Measurement will be made at the point of removal.

**B. Temporary Pipe Slope Drains.** Temporary pipe slope drains will be measured by the foot.

**C. Baled Hay.** Baled hay will be measured by each bale.

**D. Temporary Paved Flumes.** Temporary paved flumes will be measured by the square yard of surface area. The measured area will include the energy dissipater at the flume outlet.

**E. Construction Exits.** Construction exits will be measured by the square yard of surface area.

**F. Earthwork for Erosion Control.**

**1. Equipment.** Equipment use will be measured by the actual number of hours the equipment is operated.

**2. Volume Measurement.**

**a. In Place.**

**(1) Excavation.** Excavation will be measured by the cubic yard in its original position and the volume computed by the method of average end areas.

**(2) Embankment.** Embankment will be measured by the cubic yard in its final position by the method of average end areas. The volume of embankment will be determined between:

• the original ground surfaces or the surface upon that the embankment is to be constructed for the feature and

• the lines, grades and slopes of the accepted embankment for the feature.

**b. In Vehicles.** Excavation and embankment quantities will be combined and paid for under "Earthwork (Erosion and Sediment Control, In Vehicles)." Excavation will be measured by the cubic yard in vehicles at the point of removal. Embankment will be measured by the cubic yard in vehicles measured at the point of delivery. Shrinkage or swelling factors will not be considered in determining the calculated quantities.

**G. Construction Perimeter Fence.** Construction perimeter fence will be measured by the foot.

**H. Sandbags for Erosion Control.** Sandbags will be measured as each sandbag or by the foot along the top of sandbag berms or dams.

**I. Temporary Sediment-Control Fence.** Temporary sediment-control fence will be measured by the foot.

**506.6. Payment.** The following will not be paid for directly but are subsidiary to pertinent Items:

• erosion-control measures for Contractor project-specific locations (PSLs) inside and outside the right of way (such as construction and haul roads, field offices, equipment and supply areas, plants, and material sources);

• removal of litter;

• repair to devices and features damaged by Contractor operations;

• added measures and maintenance needed due to negligence, carelessness, lack of maintenance, and failure to install permanent controls;

• removal and reinstallation of devices and features needed for the convenience of the Contractor;

• finish grading and dressing upon removal of the device; and
• minor adjustments including but not limited to plumbing posts, reattaching fabric, minor grading to maintain slopes on an erosion embankment feature, or moving small numbers of sandbags.

The Contractor will be reimbursed in accordance with pertinent Items or Article 9.5, "Force Account," for maintenance, repair, or reinstallation of devices and features when the need for additional control measures cannot be attributed to the above, as determined by the Engineer. Stabilization of disturbed areas will be paid for under pertinent Items. Furnishing and installing pipe for outfalls associated with sediment traps and ponds will not be paid for directly but is subsidiary to the excavation and embankment under this Item.

**A. Rock Filter Dams.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid as follows:

**1. Installation.** Installation will be paid for as "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

**2. Removal.** Removal will be paid for as "Rock Filter Dams (Remove)." This price is full compensation for furnishing and operating equipment, proper disposal, labor, materials, tools, and incidentals. When the Engineer directs that the rock filter dam installation or portions thereof be replaced, payment will be made at the unit price bid for "Rock Filter Dams (Remove)" and for "Rock Filter Dams (Install)" of the type specified. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals

**B. Temporary Pipe Slope Drains.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Pipe Slope Drains" of the size specified. This price is full compensation for furnishing materials, removal and disposal, furnishing and operating equipment, labor, tools, and incidentals. Removal of temporary pipe slope drains will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the pipe slope drain installation or portions thereof be replaced, payment will be made at the unit price bid for "Temporary Pipe Slope Drains" of the size specified, which is full compensation for the removal and reinstallation of the pipe drain. Earthwork required for the pipe slope drain installation, including construction of the sediment trap, will be measured and paid for under Section 506.5.F, "Earthwork for Erosion and Sediment Control." Riprap concrete or stone, when used as an energy dissipater or as a stabilized sediment trap, will be measured and paid for in accordance with Item 432, "Riprap."

**C. Baled Hay.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Baled Hay." This price is full compensation for furnishing and placing bales, excavating trenches, removal and disposal, equipment, labor, tools, and incidentals. When the Engineer directs that the baled hay installation (or portions thereof) be replaced, payment will be made at the unit price bid for "Baled Hay," which is full compensation for removal and reinstallation of the baled hay.

**D. Temporary Paved Flumes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Paved Flume (Install)" or "Temporary Paved Flume (Remove)." This price is full compensation for furnishing and placing materials, removal and disposal, equipment, labor, tools, and incidentals. When the Engineer directs that the paved flume

installation or portions thereof be replaced, payment will be made at the unit prices bid for "Temporary Paved Flume (Remove)" and "Temporary Paved Flume (Install)." These prices are full compensation for the removal and replacement of the paved flume and for equipment, labor, tools, and incidentals. Earthwork required for the paved flume installation, including construction of a sediment trap, will be measured and paid for under Section 506.5.F, "Earthwork for Erosion and Sediment Control."

**E. Construction Exits.** Contractor-required construction exits from offright of way locations or on-right of way PSLs will not be paid for directly but are subsidiary to pertinent Items. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" for construction exits needed on right of way access to work areas required by the Department will be paid for at the unit price bid for "Construction Exits (Install)" of the type specified or "Construction Exits (Remove)." This price is full compensation for furnishing and placing materials, excavating, removal and disposal, cleaning vehicles, labor, tools, and incidentals. When the Engineer directs that a construction exit or portion thereof be removed and replaced, payment will be made at the unit prices bid for "Construction Exit (Remove)" and "Construction Exit (Install)" of the type specified. These prices are full compensation for the removal and replacement of the construction exit and for equipment, labor, tools, and incidentals. Construction of sediment traps used in conjunction with the construction exit will be measured and paid for under Section 506.5.F, "Earthwork for Erosion and Sediment Control."

**F. Earthwork for Erosion and Sediment Control.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Excavation (Erosion and Sediment Control, In Place)," "Embankment (Erosion and Sediment Control, In Place)," "Earthwork (Erosion and Sediment Control, In Vehicles)," "Dragline Work (Erosion and Sediment Control)," "Backhoe Work (Erosion and Sediment Control)," "Excavator Work (Erosion and Sediment Control)," "Front End Loader Work (Erosion and Sediment Control)," "Blading Work (Erosion and Sediment Control)," "Scraper Work (Erosion and Sediment Control)," or "Bulldozer Work (Erosion and Sediment Control)." This price is full compensation for excavation including removal of accumulated sediment in various erosion control installations as directed, hauling, and disposal of material not used elsewhere on the project; excavation for construction of erosion-control features; embankments including furnishing material from approved sources and construction of erosion-control features; sandbags; plywood; stage construction for curb inlets involved in curb-inlet sediment traps; and equipment, labor; tools, and incidentals. Earthwork needed to remove and obliterate of erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans. Sprinkling and rolling required by this Item will not be paid for directly, but will be subsidiary to this Item.

**G. Construction Perimeter Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Construction Perimeter Fence." This price is full compensation for furnishing and placing the fence; digging, fence posts, wire, and flagging; removal and disposal; and materials, equipment, labor, tools, and incidentals. Removal of construction perimeter fence will be not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the perimeter fence installation or portions thereof be removed and replaced, payment will be made at the unit price bid for "Construction Perimeter Fence," which is full compensation for the removal and reinstallation of the construction perimeter fence.

**H. Sandbags for Erosion Control.** Sandbags will be paid for at the unit price bid for "Sandbags for Erosion Control" (of the height specified when measurement is by the foot). This price is full compensation for materials, placing sandbags, removal and disposal, equipment, labor, tools, and incidentals. Removal of sandbags will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the sandbag installation or portions thereof be replaced, payment will be made at the unit price bid for "Sandbags for Erosion Control," which is full compensation for the reinstallation of the sandbags.

**I. Temporary Sediment-Control Fence.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Temporary Sediment-Control Fence." This price is full compensation for furnishing and placing the fence; trenching, fence posts, fabric and backfill; removal and disposal; and equipment, labor, tools, and incidentals. Removal of temporary sediment-control fence will not be paid for directly but is subsidiary to the installation Item. When the Engineer directs that the temporary sedimentation control fence installation or portions thereof be replaced, payment will be made at the unit price bid for "Temporary Sediment-Control Fence," which is full compensation for the removal and reinstallation of the temporary sediment-control fence.

*** * END OF SECTION * ***

**Certification**
**Regarding Debarment, Suspension and Ineligibility**

As is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 76, Government-wide Debarment and Suspension, the applicant certifies, to the best of his or her knowledge and belief, that both it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;

b. Have not within a three-year period preceding this bid proposal and/or application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity with commission of any of the offenses enumerated herein; and

d. Have not within a three-year period preceding this bid proposal and/or application had one or more public transactions terminated for cause or default.

Signature:_____
Print Name:_____
Title:_____
Telephone Number:_____
Date:_____

If the bidder is unable to certify to all of the statements in this Certification, such bidder should attach an explanation to this proposal.

Form **W-9**
(Rev. November 2005)
Department of the Treasury
Internal Revenue Service

# Request for Taxpayer Identification Number and Certification

**Give form to the requester. Do not send to the IRS.**

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)

Business name, if different from above

Check appropriate box: ☐ Individual/ Sole proprietor ☐ Corporation ☐ Partnership ☐ Other ▶ ..... ☐ Exempt from backup withholding

Address (number, street, and apt. or suite no.) | Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

**Social security number**
___ ___ ___ – ___ ___ – ___ ___ ___ ___

**or**

**Employer identification number**
___ ___ – ___ ___ ___ ___ ___ ___ ___

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. person (including a U.S. resident alien).

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 4.)

**Sign Here** Signature of U.S. person ▶ Date ▶

## Purpose of Form

A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

**U.S. person.** Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee.

In 3 above, if applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

**Note.** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

For federal tax purposes, you are considered a person if you are:

- An individual who is a citizen or resident of the United States,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, or
- Any estate (other than a foreign estate) or trust. See Regulations sections 301.7701-6(a) and 7(a) for additional information.

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

- The U.S. grantor or other owner of a grantor trust and not the trust, and
- The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

***Example.*** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments (after December 31, 2002). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the Part II instructions on page 4 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate Instructions for the Requester of Form W-9.

Also see *Special rules regarding partnerships* on page 1.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

# Specific Instructions

## Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

**Limited liability company (LLC).** If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, enter the owner's name on the "Name" line. Enter the LLC's name on the "Business name" line. Check the appropriate box for your filing status (sole proprietor, corporation, etc.), then check the box for "Other" and enter "LLC" in the space provided.

**Other entities.** Enter your business name as shown on required federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

**Note.** You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).

## Exempt From Backup Withholding

If you are exempt, enter your name as described above and check the appropriate box for your status, then check the "Exempt from backup withholding" box in the line following the business name, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

**Exempt payees.** Backup withholding is not required on any payments made to the following payees:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),

2. The United States or any of its agencies or instrumentalities,

3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,

4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or

5. An international organization or any of its agencies or instrumentalities.

Other payees that may be exempt from backup withholding include:

6. A corporation,

7. A foreign central bank of issue,

8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,

9. A futures commission merchant registered with the Commodity Futures Trading Commission,

10. A real estate investment trust,

11. An entity registered at all times during the tax year under the Investment Company Act of 1940,

12. A common trust fund operated by a bank under section 584(a),

13. A financial institution,

14. A middleman known in the investment community as a nominee or custodian, or

15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, 1 through 15.

| IF the payment is for . . . | THEN the payment is exempt for . . . |
|---|---|
| Interest and dividend payments | All exempt recipients except for 9 |
| Broker transactions | Exempt recipients 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker |
| Barter exchange transactions and patronage dividends | Exempt recipients 1 through 5 |
| Payments over $600 required to be reported and direct sales over $5,000 [1] | Generally, exempt recipients 1 through 7 [2] |

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees; and payments for services paid by a federal executive agency.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner LLC that is disregarded as an entity separate from its owner (see *Limited liability company (LLC)* on page 2), enter your SSN (or EIN, if you have one). If the LLC is a corporation, partnership, etc., enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at *www.socialsecurity.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer ID Numbers under Related Topics. You can get Forms W-7 and SS-4 from the IRS by visiting *www.irs.gov* or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** *A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.*

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt recipients, see *Exempt From Backup Withholding* on page 2.

**Signature requirements.** Complete the certification as indicated in 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

## What Name and Number To Give the Requester

| For this type of account: | Give name and SSN of: |
|---|---|
| 1. Individual | The individual |
| 2. Two or more individuals (joint account) | The actual owner of the account or, if combined funds, the first individual on the account [1] |
| 3. Custodian account of a minor (Uniform Gift to Minors Act) | The minor [2] |
| 4. a. The usual revocable savings trust (grantor is also trustee) | The grantor-trustee [1] |
| b. So-called trust account that is not a legal or valid trust under state law | The actual owner [1] |
| 5. Sole proprietorship or single-owner LLC | The owner [3] |
| **For this type of account:** | **Give name and EIN of:** |
| 6. Sole proprietorship or single-owner LLC | The owner [3] |
| 7. A valid trust, estate, or pension trust | Legal entity [4] |
| 8. Corporate or LLC electing corporate status on Form 8832 | The corporation |
| 9. Association, club, religious, charitable, educational, or other tax-exempt organization | The organization |
| 10. Partnership or multi-member LLC | The partnership |
| 11. A broker or registered nominee | The broker or nominee |
| 12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments | The public entity |

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or "DBA" name on the second name line. You may use either your SSN or EIN (if you have one). If you are a sole proprietor, IRS encourages you to use your SSN.

[4] List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules regarding partnerships* on page 1.

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, the District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

# HIDALGO COUNTY
# PURCHASING DEPARTMENT
# Bidder/Vendor Application

**Complete in print or type. Please return this application to the Hidalgo County Purchasing Department**
**thru Facsimile: (956) 318-2629 or (956) 292-7612**
**in person or regular mail to: 2812 S. Business Hwy. 281 , Edinburg, Texas 78539**
**or e-mail: purchasing@co.hidalgo.tx.us**

**Company Name:** **Telephone No. ( )**

**dba Name:**

**Legal Name:**

**Mailing Address :** **Fax No. ( )**

**Physical Address:**

**City, State, Zip** **Tax I.D. No.**

**Remit to Address :** **City, State, Zip**

**E-Mail Address:**

**Representative(s) Name(s) & Title(s)**

**Type of Organization (check one):** _____ Individual _____ Partnership _____ Corporation _____Non-Profit
_____ LLC _____ Sole Proprietor _____ Other, Specify

**State Identification No.**_____ (Please attached completed W-9 form with this application)
Federal Identification No. or (if individual) SS No.

**State of Incorporation:** _____ **Date:**_____ **Other:**

**Type of Business (check one):** _____ Manufacturer _____ Wholesaler _____ Retailer _____ Broker
_____ Distributor _____ Service Organization _____ Other, Specify

**Name & Title of Person(s) Authorized to Sign Bids, Proposals, and/or Contracts:**

**Small and/or Disadvantaged Business Information (check application criteria)**

| **Small Business:** | **Disadvantaged Business (At Least 51% Ownership)** | |
|---|---|---|
| ☐ Less than 125,000 annual gross receipt | ☐ Black American | ☐ Native American |
| ☐ Less than 250,000 annual gross receipt | ☐ Hispanic American | ☐ Women |
| ☐ Less than 499,000 annual gross receipt | ☐ Asian Pacific American | ☐ Other |
| ☐ More than 500,000 annual gross receipt | | |

**Have you been certified as a HUB or an MBE/WBE source?:** ☐ Yes ☐ No

**Indicate Certification No.(s):**_____ **or are Certificate(s) attached?:** ☐ Yes ☐ No

**What type of product(s) is/are solicited by your company?:**

**Would you like to be provided with specifications for procurements of such products?:** ☐ Yes ☐ No

**To Be Completed by the County: Rec'd by (Purchasing):**_____ **Date Rec'd by (Purchasing):**

**Date Forwarded Information to Auditor's Office:**_____**Entry Date:** _____ **Vendor No.:**

## HISTORICALLY UNDERUTILIZED BUSINESS (HUB) DECLARATION

The primary objective of the Hidalgo County HUB Program is to ensure Historically Underutilized Businesses receive a fair and equal opportunity for participation in the County's procurement process. This fact holds true for Services (Professional & Non-Professional), Commodities, and Construction contracts and any subcontracts thereto. The program strongly encourages Prime Contractors to provide subcontracting opportunities to Certified Hub Contractors/Vendors. Our goal for HUB contractor/vendor participation, as well as HUB subcontractor participation is 30%. To be considered as a "Certified HUB Contractor/Vendor" the contractor/vendor must have been certified by, and hold a current and valid certification with any of the three agencies listed below.

Have you been Certified as a HUB or an MBE/WBE source?: ☐Yes ☐ No

If yes, by whom?: ☐ Texas Building & Procurement Commission ☐ Other_____

Indicate Certification No(s).:_____ or Are Certificate(s) Attached?: ☐ Yes ☐ No

---

## LIST OF CERTIFIED HUB SUBCONTRACTORS

(Attach additional pages if necessary)

What percentage of the Bid, RFP,or RFQ is to be subcontracted with Certified HUB sources?: _____%
(List HUB Subcontractor information below).

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ☐Texas Building & Procurement Commission ☐ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ☐Texas Building & Procurement Commission ☐ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ☐Texas Building & Procurement Commission ☐ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

## DISCLOSURE OF CONFLICT OF INTEREST

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor, person, consultant or contractor considering doing business with Hidalgo County ("the County") to disclose in the Conflict of Interest Questionnaire (the "CIQ") attached as Exhibit D, the vendor, person, consultant or contractor's affiliation or business relationship that might cause a conflict of interest with the County. By law, the CIQ must be filed with the Hidalgo County Clerk's Office no later than the seventh business day after the date the person becomes aware of facts that require that statement to be filed. The disclosure requirement applies to a person or business who contracts or seeks to contract with Hidalgo County for the sale or purchase of property, goods or service. Any purchase order or contract resulting from this process shall be considered null and void if the successful bidder fails to comply with Texas Local Government Code Chapter 176. Vendors, consultants, contractors and others who desire to conduct business with Hidalgo County are encouraged to refer to Texas Local Government Code Chapter 176 for the details of this law. An offense under Texas Local Government Code Chapter 176 is a Class C Misdemeanor.

**Please Submit completed forms to the Hidalgo County Clerk's Office located at 100 N. Closner, Edinburg, Texas 78539-Hidalgo County Courthouse**

**COMPLETION AND SUBMISSION OF FORM CIQ IS THE SOLE RESPONSIBILITY OF THE PROSPECTIVE BIDDER.**

# CONFLICT OF INTEREST QUESTIONNAIRE

**FORM CIQ**

**For vendor or other person doing business with local governmental entity**

**This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.**

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code.

A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

| OFFICE USE ONLY |
| --- |
| Date Received |

1 **Name of person who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 **Name of local government officer with whom filer has employment or business relationship.**

_____

Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

☐ Yes ☐ No

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ No

D. Describe each employment or business relationship with the local government officer named in this section.

4

_____ _____

Signature of person doing business with the governmental entity Date

Adopted 06/29/2007

# SALES TAX AND LOCAL SALES TAX
# EXEMPTION CERTIFICATE FOR CONTRACTORS

This Contract is to be performed for an exempt organization as defined by Article 20.04 (H) (4) of the Texas Limited Sales, Excise, and Use Tax Act and the undersigned hereby claims an exemption from payment of taxes under Chapter 20, title 122A, revised hereby claims an exemption from payment of taxes under Chapter 20, title 122A, revised civil statues of Texas, and Article 1066 ©, entitle Local Sales and Use Tax, revised civil statues of Texas.

The Contractor performing this Contract may purchase, rent, or lease all materials, supplies, equipment used for consumed in the performance of this Contract by issuing to his retailer an exemption certificate in lieu of the tax, said exemption certificate complying with State Comptroller's Ruling No 95-9.07. Any such exemption certificate issue by the Contractor in lieu of the tax shall be subject to the provisions of the State Comptroller's Ruling No. 95.0.09 as amended to be effective October 2, 1968.

EXECUTED this the _____ day of _____, 20_____.

_____

Contractor

GOVERNMENT CODE

CHAPTER 2258. PREVAILING WAGE RATES

SUBCHAPTER A. GENERAL PROVISIONS

§Sec. 2258.001. DEFINITIONS. In this chapter:

(1) "Locality in which the work is performed" means:

(A) for a contract for a public work awarded by the state, the political subdivision of the state in which the public work is located:

(i) which may include a county, municipality, county and municipality, or district, except as provided by Subparagraph (ii); and

(ii) which, in a municipality with a population of 500,000 or more, may only include the geographic limits of the municipality; or

(B) for a contract for a public work awarded by a political subdivision of the state, the geographical limits of the political subdivision.

(2) "Public body" means a public body awarding a contract for a public work on behalf of the state or a political subdivision of the state.

(3) "Worker" includes a laborer or mechanic.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995. Amended by Acts 2001, 77th Leg., ch. 1422, Sec. 14.04, eff. Sept. 1, 2001.

§Sec. 2258.002. APPLICABILITY OF CHAPTER TO PUBLIC WORKS. (a) This chapter applies only to the construction of a public work, including a building, highway, road, excavation, and repair work or other project development or improvement, paid for in whole or in part from public funds, without regard to whether the work is done under public supervision or direction.

(b) This chapter does not apply to work done directly by a public utility company under an order of a public authority.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.003. LIABILITY. An officer, agent, or employee of a public body is not liable in a civil action for any act or omission implementing or enforcing this chapter unless the action was made in bad faith.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

SUBCHAPTER B. PAYMENT OF PREVAILING WAGE RATES

§Sec. 2258.021. RIGHT TO BE PAID PREVAILING WAGE RATES. (a) A worker employed on a public work by or on behalf of the state or a political subdivision of the state shall be paid:

(1) not less than the general prevailing rate of per diem wages for work of a similar

character in the locality in which the work is performed; and

(2) not less than the general prevailing rate of per diem wages for legal holiday and overtime work.

(b) Subsection (a) does not apply to maintenance work.

(c) A worker is employed on a public work for the purposes of this section if the worker is employed by a contractor or subcontractor in the execution of a contract for the public work with the state, a political subdivision of the state, or any officer or public body of the state or a political subdivision of the state.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995. Amended by Acts 1997, 75th Leg., ch. 165, Sec. 18.01, eff. Sept. 1, 1997.

§Sec. 2258.022. DETERMINATION OF PREVAILING WAGE RATES.

(a) For a contract for a public work awarded by a political subdivision of the state, the public body shall determine the general prevailing rate of per diem wages in the locality in which the public work is to be performed for each craft or type of worker needed to execute the contract and the prevailing rate for legal holiday and overtime work by:

(1) conducting a survey of the wages received by classes of workers employed on projects of a character similar to the contract work in the political subdivision of the state in which the public work is to be performed; or

(2) using the prevailing wage rate as determined by the United States Department of Labor in accordance with the Davis-Bacon Act (40 U.S.C. Section 276a et seq.), and its subsequent amendments.

(b) This subsection applies only to a public work located in a county bordering the United Mexican States or in a county adjacent to a county bordering the United Mexican States. For a contract for a public work awarded by the state, the public body shall determine the general prevailing rate of per diem wages in the locality in which the public work is to be performed for each craft or type of worker needed to execute the contract and the prevailing rate for legal holiday and overtime work as follows. The public body shall conduct a survey of the wages received by classes of workers employed on projects of a character similar to the contract work both statewide and in the political subdivision of the state in which the public work is to be performed. The public body shall also consider the prevailing wage rate as determined by the United States Department of Labor in accordance with the Davis-Bacon Act (40 U.S.C. Section 276a et seq.), and its subsequent amendments, but only if the survey used to determine that rate was conducted within a three-year period preceding the date the public body calls for bids for the public work. The public body shall determine the general prevailing rate of per diem wages in the locality based on the higher of:

(1) the rate determined from the survey conducted in the political subdivision;

(2) the arithmetic mean between the rate determined from the survey conducted in the political subdivision and the rate determined from the statewide survey; and

(3) if applicable, the arithmetic mean between the rate determined from the survey conducted in the political subdivision and the rate determined by the United States Department of Labor.

(c) The public body shall determine the general prevailing rate of per diem wages as a sum certain, expressed in dollars and cents.

(d) A public body shall specify in the call for bids for the contract and in the contract itself the wage rates determined under this section.

(e) The public body's determination of the general prevailing rate of per diem wages is final.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995. Amended by Acts 1997, 75th Leg., ch. 165, Sec. 18.02, eff. Sept. 1, 1997; Acts 2001, 77th Leg., ch. 1422, Sec. 14.05, eff. Sept. 1, 2001.
Amended by: Acts 2007, 80th Leg., R.S., Ch. 728, Sec. 1, eff. September 1, 2007.

§Sec. 2258.023. PREVAILING WAGE RATES TO BE PAID BY CONTRACTOR AND SUBCONTRACTOR; PENALTY.

(a) The contractor who is awarded a contract by a public body or a subcontractor of the contractor shall pay not less than the rates determined under Section 2258.022 to a worker employed by it in the execution of the contract.

(b) A contractor or subcontractor who violates this section shall pay to the state or a political subdivision of the state on whose behalf the contract is made, $60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body awarding a contract shall specify this penalty in the contract.

(c) A contractor or subcontractor does not violate this section if a public body awarding a contract does not determine the prevailing wage rates and specify the rates in the contract as provided by Section 2258.022.

(d) The public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.

(e) A municipality is entitled to collect a penalty under this section only if the municipality has a population of more than 10,000.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.024. RECORDS.

(a) A contractor and subcontractor shall keep a record showing:

(1) the name and occupation of each worker employed by the contractor or subcontractor in the construction of the public work; and

(2) the actual per diem wages paid to each worker.

(b) The record shall be open at all reasonable hours to inspection by the officers and agents of the public body.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.025. PAYMENT GREATER THAN PREVAILING RATE NOT PROHIBITED. This chapter does not prohibit the payment to a worker employed on a public work an amount greater than the general prevailing rate of per diem wages.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.026. RELIANCE ON CERTIFICATE OF SUBCONTRACTOR. A contractor is entitled to rely on a certificate by a subcontractor regarding the payment of all sums due those working for the subcontractor until the contrary has been determined.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

SUBCHAPTER C. ENFORCEMENT; CIVIL AND CRIMINAL PENALTIES

§Sec. 2258.051. DUTY OF PUBLIC BODY TO HEAR COMPLAINTS AND WITHHOLD PAYMENT. A public body awarding a contract, and an agent or officer of the public body, shall:

(1) take cognizance of complaints of all violations of this chapter committed in the execution of the contract; and

(2) withhold money forfeited or required to be withheld under this chapter from the payments to the contractor under the contract, except that the public body may not withhold money from other than the final payment without a determination by the public body that there is good cause to believe that the contractor has violated this chapter.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.052. COMPLAINT; INITIAL DETERMINATION.

(a) On receipt of information, including a complaint by a worker, concerning an alleged violation of Section 2258.023 by a contractor or subcontractor, a public body shall make an initial determination as to whether good cause exists to believe that the violation occurred.

(b) A public body must make its determination under Subsection (a) before the 31st day after the date the public body receives the information.

(c) A public body shall notify in writing the contractor or subcontractor and any affected worker of its initial determination.

(d) A public body shall retain any amount due under the contract pending a final determination of the violation.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.053. ARBITRATION REQUIRED FOR UNRESOLVED ISSUE.

(a) An issue relating to an alleged violation of Section 2258.023, including a penalty owed to a public body or an affected worker, shall be submitted to binding arbitration in accordance with the Texas General Arbitration Act (Article 224 et seq., Revised Statutes) if the contractor or subcontractor and any affected worker do not resolve the issue by agreement before the 15th day after the date the public body makes its initial determination under Section 2258.052.

(b) If the persons required to arbitrate under this section do not agree on an arbitrator before the 11th day after the date that arbitration is required under Subsection (a), a district court shall appoint an arbitrator on the petition of any of the persons.

(c) A public body is not a party in the arbitration.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.054. ARBITRATION AWARD; COSTS. (a) If an arbitrator determines that Section 2258.023 has been violated, the arbitrator shall assess and award against the contractor or subcontractor:

(1) penalties as provided by Section 2258.023 and this section; and

(2) all amounts owed to the affected worker.

(b) An arbitrator shall assess and award all reasonable costs, including the arbitrator's fee, against the party who does not prevail. Costs may be assessed against the worker only if the arbitrator finds that the claim is frivolous. If the arbitrator does not find that the claim is frivolous and does not make an award to the worker, costs are shared equally by the parties.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.055. ARBITRATION DECISION AND AWARD FINAL. The decision and award of the arbitrator is final and binding on all parties and may be enforced in any court of competent jurisdiction.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.056. PAYMENT BY PUBLIC BODY TO WORKER; ACTION TO RECOVER PAYMENT.

(a) A public body shall use any amounts retained under this chapter to pay the worker the difference between the amount the worker received in wages for labor on the public work at the rate paid by the contractor or subcontractor and the amount the worker would have received at the general prevailing wage rate as provided in the arbitrator's award.

(b) The public body may adopt rules, orders, or ordinances relating to the manner in which a reimbursement is made.

(c) If the amounts retained by a public body under this chapter are not sufficient for the public body to pay the worker the full amount owed, the worker has a right of action against the contractor or subcontractor and the surety of the contractor or subcontractor to recover the amount owed, reasonable attorney's fees, and court costs.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.057. WITHHOLDING BY CONTRACTOR.

(a) A contractor may withhold from a subcontractor sufficient money to cover an amount withheld from the contractor by a public body because the subcontractor violated this chapter.

(b) If the contractor has made a payment to the subcontractor, the contractor may withhold money from any future payments owed to the subcontractor or sue the subcontractor or the subcontractor's surety for the amount withheld from the contractor by a public body because of the subcontractor's violation.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

§Sec. 2258.058. CRIMINAL OFFENSE.

(a) An officer, agent, or representative of the state or of a political subdivision of the state commits an offense if the person wilfully violates or does not comply with a provision of this chapter.

(b) A contractor or subcontractor of a public work under this chapter, or an agent or representative of the contractor or subcontractor, commits an offense if the person violates Section 2258.024.

(c) An offense under this section is punishable by:

(1) a fine not to exceed $500;

(2) confinement in jail for a term not to exceed six months; or

(3) both a fine and confinement.

Added by Acts 1995, 74th Leg., ch. 76, Sec. 5.49(a), eff. Sept. 1, 1995.

## Prevailing Wage Rates
## Certification Statement

**Date** _____

**Project Name** _____ **CSJ#** _____

**Contractor** _____ **Application#** _____

**I,** _____ **do hereby state:**
**(Name of Project Director)**

1. That a payroll (form WH-347 or similar form) was submitted for contract work Performed for the period covered by the attached application.
2. That a statement of compliance(form WH-347 or similar form) was submitted with the payroll.
3. The certified payroll complies with the classifications and minimum wage rates Stipulated in the contract.
4. That a minimum of one interview was conducted with laborers using Form HUD-11 or similar.

_____
Signature

General Decision Number: TX140008 01/03/2014 TX8

Superseded General Decision Number: TX20130008

State: Texas

Construction Types: Heavy and Highway

Counties: Cameron, Hidalgo and Webb Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

| Modification Number | Publication Date |
|---|---|
| 0 | 01/03/2014 |

* SUTX2011-003 08/02/2011

| | Rates | Fringes |
|---|---|---|
| CEMENT MASON/CONCRETE FINISHER (Paving & Structures) | $ 12.46 | |
| FORM BUILDER/FORM SETTER (Structures) | $ 12.30 | |
| FORM SETTER (Paving & Curb) | $ 12.16 | |
| LABORER | | |
| Asphalt Raker | $ 10.61 | |
| Flagger | $ 9.10 | |
| Laborer, Common | $ 9.86 | |
| Laborer, Utility | $ 11.53 | |
| Pipelayer | $ 11.87 | |
| Work Zone Barricade Servicer | $ 12.88 | |
| POWER EQUIPMENT OPERATOR: | | |
| Asphalt Distributor | $ 13.48 | |
| Asphalt Paving Machine | $ 12.25 | |
| Broom or Sweeper | $ 10.33 | |
| Crane, Lattice Boom 80 Tons or Less | $ 14.39 | |
| Crawler Tractor | $ 16.63 | |
| Excavator, 50,000 lbs or less | $ 12.56 | |
| Excavator, over 50,000 lbs | $ 15.23 | |
| Foundation Drill, Truck Mounted | $ 16.86 | |
| Front End Loader Operator, Over 3 CY | $ 13.69 | |
| Front End Loader, 3 CY or less | $ 13.49 | |
| Loader/Backhoe | $ 12.77 | |
| Mechanic | $ 15.47 | |
| Milling Machine | $ 14.64 | |
| Motor Grader Operator, | | |

```
     Rough.....................$ 14.62
     Motor Grader, Fine Grade....$ 16.52
     Scraper...................$ 11.07

Servicer.....................$ 12.34

Steel Worker (Reinforcing).......$ 14.07

TRUCK DRIVER
     Lowboy-Float..............$ 13.63
     Single Axle...............$ 10.82
     Single or Tandem Axle Dump..$ 14.53
     Tandem Axle Tractor with
     Semi Trailer..............$ 12.12

WELDER.......................$ 14.02
```

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

---

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

---

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

# CHANGE ORDER NUMBER ONE(1) **SAMPLE**

Project: _____

DATE OF ISSUANCE: _____ EFFECTIVE DATE: _____

OWNER: _____
OWNER'S CONTRACT NO: _____

CONTRACTOR: _____ ENGINEER: _____

_____ _____

_____ _____

You ar directed to make the following changes in the Contract Documents.

Description:
1.
2.
3.
4.
5.
6.

Reason for Change Order:
1.
2.
3.
4.
5.
6.

Attachments:

DRAFT

| CHANGE IN CONTRACT PRICE: | CHANGE IN CONTRACT TIME: |
|---|---|
| Original Contract Price<br>$ 0.00 | Original Contract Time for<br>Substantial Completion: 0 calendar days or dates |
| Net Changes from previous Change Order<br>$ 0.00 | Net Change from previous Change Orders<br>0 calendar days |
| Contract Price prior to this Change Order<br>$ 0.00 | Contract Time prior to this Change Order<br>Substantial Completion: 0 calendar days or dates |
| Net Increase(decrease) of this Change Order<br>$ 0.00 | Net Increase(decrease) of this Change Order<br>0 calendar days |
| Contract Price with all approved Change Orders<br>$ 0.00<br>Net % increase(decrease)from original contract price.<br>#DIV/0! % | Contract Time with all approved Change Orders<br>Substantial Completion: 0 calendar days or dates |

**RECOMMENDED:**

By: _____
Enigineer (Authorized Signature)

Date: _____

**APPROVED:**

By: _____
Owner (Authorized Signature)

Date: _____

**ACCEPTED:**

By: _____
Contractor (Authorized Signature)

Date: _____

**Exhibit E-B**

# SAMPLE --APPLICATION FOR PAYMENT NO.

To: _____ (OWNER)
From: _____ (CONTRACTOR)
Contract: _____
Project: _____
Owner's Contract No. _____ Engineer's Project No. _____
For Work accomplished through the date of: _____

| | |
|---|---|
| 1. Original Contract Price: | _____ |
| 2. Net change by Change Order and Written Agreements(+or-): | _____ |
| 3. Current Contract Price (1 plus 2): | _____ |
| 4. Total completed and stored to date: | _____ |
| 5. Retainage (per Agreement): | |
| ___10%___ of completed Work: _____ | |
| _____ of stored material _____ | |
| Total Retainage: | _____ |
| 6. Total completed and stored to date less retainage (4 minus 5) | _____ |
| 7. Less previous Application for Payments: | _____ |
| 8. AMOUNT DUE THIS APPLICATION (6 MINUS 7) | _____ |

**Accompanying Documentation:**

**CONTRACTOR'S Certification:**
The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR'S legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through __2__ inclusive: (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payments is in accordance with the Contract Documents and not defective.

DRAFT

Date _____

_____
CONTRACTOR

By: _____

State of _____
County of _____
Subscribed and sworn to before me this _____
day of _____

_____
Notary Public
My Commission expires: _____

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Date _____

_____
ENGINEER

By: _____

**Exhibit E-C**

**Estimate Quantity Update Worksheet** Date:

Colonia:
Roadway:
Control:
Project No:
County:
Est. No: 1

Contractor:
Contract Price:
Work Done this Mo.:
% Complete: #DIV/0!

Date Began: ?
Contract Time: 120
Time Charged: 90
% Time Used: 75.00%

Work Type: Paving & Drainage
Limits:
From:
To:

| | | | | | | FIRST MONTH | | | SECOND MONTH | | | THIRD MONTH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ITEM NO. | DESCRIPTION | UNIT | PROJECT QTY | Unit Price | Project Amount | MONTHLY QUANTITY | QTY to Date | Item Cost (Monthly) | MONTHLY QUANTITY | QTY to Date | Item Cost (Monthly) | MONTHLY QUANTITY | QTY to Date | Item Cost (Monthly) |
| | (901)ADMINISTRATIVE | | | | | | | | | | | | | |
| | (902) PRELIMINARY ENGINEERING | | | | | | | | | | | | | |
| | (903) CONSTRUCTION ENGINEERING | | | | | | | | | | | | | |
| | (904) RIGHT-OF-WAY | | | | | | | | | | | | | |
| | (905) ROADWAY CONSTRUCTION | | | | | | | | | | | | | |
| 100 | PREP ROW | Sta. | 1.100 | $1,800.00 | $1,980.00 | 1.000 | 1.000 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 110 | BACKFILL (TY A) | Sta. | 1.000 | $600.00 | $600.00 | 0.000 | | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 247 | FLEX BASE (RDWY DEL)(TY D GR 6 CL 4) | CY | 76.000 | $28.00 | $2,128.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 260 | LIME (TY A SLURRY) OR (TY B) | TON | 1036.000 | $2.00 | $2,072.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 260 | LIME TREAT SUBGR (DC)(12") | SY | 0.000 | $6,000.00 | $0.00 | 0.000 | | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 262 | LIME (TY A SLURRY) OR (TY B) | TON | 7.800 | $3,000.00 | $23,400.00 | 0.000 | | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 262 | LME TRT FOR BS CRS (NEW/EXT BS)(DC)(6") | SY | 1277.800 | $6.00 | $7,666.80 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 310 | ASPH MATRL (MC-30) | GAL | 246.7 | $6.00 | $1,480.20 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 500 | MOBILIZATION | LS | 1.000 | $3,000.00 | $3,000.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 502 | BARRICADES, SIGNS, AND TRAF HANDLE | MO | 1.000 | $1,000.00 | $1,000.00 | 0.000 | | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 529 | CONC CURB AND GUTTER (TY A)(BARRIER) | LF | 600.000 | $7.50 | $4,500.00 | 0.000 | | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 644 | SMALL RDSD SGN ASSM (TY A) | EA | 2.000 | $300.00 | $600.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 644 | SMALL RDSD SGN ASSM (TY F) | EA | 2.000 | $500.00 | $1,000.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 658 | DEL ASM TY A (D-SY) | EA | 4.000 | $100.00 | $400.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 666 | REFL PAV MRK TY I (Y)(SLD)(4") | LF | 400.000 | $2.50 | $1,000.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 666 | REFL PAV MRK TY I (Y)(BRK)(4") | LF | 140.000 | $2.50 | $350.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 672 | RAIS PAV MRKR CL B (REFL)(TY II-A-A) | EA | 24.000 | $3.50 | $84.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 3146 | HOT MIX (TY D) | TON | 105.5 | $34.00 | $3,587.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 5249 | TEMP SEDMT CONT FENCE | LF | 70.000 | $3.00 | $210.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| | | | | | | | 0 | | | 0 | $0.00 | | 0 | 0.00 |
| | (906) DRAINAGE | | | | | | | | | | | | | |
| 464 | RC PIPE (CL III)(18") | LF | 404.000 | $25.00 | $10,100.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 464 | RC PIPE (CL III)(24") | LF | 120.000 | $30.00 | $3,600.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 465 | INLET (COMPL)(TY A) | EA | 2.000 | $2,000.00 | $4,000.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 465 | INLET (COMPL)(TY C) | EA | 2.000 | $1,500.00 | $3,000.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 465 | MANH (COMPL)(TYM) | EA | 1.000 | $2,000.00 | $2,000.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 465 | INLET EXT. | EA | 2.000 | $700.00 | $1,400.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 467 | SET (TY II)(18")(RCP)(1:6) | EA | 4.000 | $550.00 | $2,200.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |
| 467 | SET (TY II)(24")(RCP)(1:6) | EA | 1.000 | $650.00 | $650.00 | 0.000 | 0 | $0.00 | | 0 | $0.00 | | 0 | 0.00 |

| | | | |
|---|---|---|---|
| Monthly Totals: | $0.00 | $0.00 | 0.00 |
| ADMINISTRATIVE (901) | | | |
| PRELIMINARY ENGINEERING (902) | | | |
| CONSTRUCTION ENGINEERING (903) | | | |
| RIGHT-OF-WAY (904) | | | |
| Roadway (905): | $0.00 | $0.00 | 0.00 |
| Drainage (906): | $0.00 | $0.00 | 0.00 |

Total to Date

| | |
|---|---|
| Roadway (905): | $0.00 |
| Drainage (906): | $0.00 |
| Total | $0.00 |

Prepared and Checked By: Signature: _____ Date: _____

DRAFT

Printed Name:

DRAFT

SAMPLE

_____ Contractor Name
_____ Starting Date
_____ Project Ending Date
_____ Retainage Percent

Application No.: _____
Application Date: _____
Period To: _____
Engineer Firm: _____

| Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CSJ# | PROJECT NAME | Original Schedule Value | Revised Schedule Value | Payment Application No 1 | Payment Application No 2 | Payment Application No 3 | Total To Date | Balance To Finish | Retainage | Net | Payment To Date | Payment Due |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |

DRAFT

Texas Department of Transportation

*Form 252 (Rev. 12/82)*
*Page* 1 of 1
(GSD-EPC Word 97)

# Contract Time Statement

ESTIMATE NO. 0 CONTRACTOR _____

PROJECT NO. _____ COUNTY _____ DATE WORK BEGAN _____

TIME COMPUTED FROM _____ DATE WORK COMPLETED _____

| MONTH | DATE OR DAYS | WORKING DAYS CHARGED | | DAYS CREDITED AND REASONS THEREFORE |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

(Company Letterhead)

(Date)

County of Hidalgo
Attn.: Mr. Raul E. Sesin, P.E.
1304 S. 25th St.
Edinburg, TX 78539

RE: Hidalgo County Precinct No. 2
Alamo Road Crossing Drainage Improvements
Contract No.: C-10-032-___-___

Mr. Sesin:

The following is the list of suppliers used in the above mentioned projects as per the County's request:

Rio Valley Pipe 7301 W. Exp. 83 Mission, TX 78572 (956)-584-5770

If you have any questions, please call me at (956) 607-0741

Best regards,

_____
(name)_____, Manger

DRAFT

(Company Letterhead)

(Date)

County of Hidalgo
Attn.: Mr. Raul E. Sesin, P.E.
1304 S. 25th St.
Edinburg, TX 78539

RE: Hidalgo County Precinct No. 2
Gearhart Drive Paving & Drainage Improvements
Contract No.: C-14-032-xx-xxx

Mr. Sesin:

The following is the list of suppliers used in the above mentioned projects as per the County's request:

Hidalgo County Pipe 2605 US Exp. 281 Edinburg, TX 78542 (956)318-2840

If you have any questions, please call me at (956) 607-0741

Best regards,

_____
(name) , Manger

DRAFT

# PARTIAL/FINAL WAIVER OF LIEN

THE STATE OF TEXAS

COUNTY OF_____

The undersigned contracted with _____
_____to furnish_____
in connection with certain improvements to real property located in_____
County, Texas, and owned by_____
Which improvements are described as follows:

_____
_____
_____

In consideration of Pay Estimate No _____in the amount of_____
_____DOLLAR($_____)and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged and confessed, the undersigned does hereby waive and release any mechanic's lien or materialmen's lien or claims of lien that the undersigned has or hereafter has on the above mentioned real property on account of any labor performed or materials furnished or to be furnished or labor performed and materials furnished by the undersigned pursuant to the above-mentioned contract or any constitutional lien that the undersigned may have.

Undersigned hereby guarantees that all bids for labor performed and/or materials furnished in the erection and construction of such improvements on the Property have been fully paid and satisfied and Undersigned does further guarantee that if for any reason a lien or liens are filed for material or labor against said Property arising out of any bills for material or labor in connection with the erection or construction of said improvements thereon, Undersigned will obtain a settlement of such lien or liens and a proper release thereof shall be obtained.

_____
SUPPLIER

BY:_____
TITLE

SWORN TO AND SUBSCRIBED BEFORE ME, on this the_____day of_____,20__to certify which witness my hand and seal of office.

_____
NOTARY PUBLIC in and for the State of Texas

My Commission Expires: _____

## *CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS*

**PROJECT:** **PROJECT NO.**
**OWNER:**
**CONTRACTOR:**
**ENGINEER:**

The Contractor, in accordance with the Contract Documents, and in consideration for the full and final payment to the Contractor for all services in connection with the project, does hereby waive and release any and all liens, or any and all claims to liens which the Contractor may have on or affecting the project as a result of its contract(s) for the Project or for performing labor and/or furnishing materials in any way connected with the construction of any aspect of the project. The Contractor further certifies and warrants that all subcontractors of labor and/or materials for the Project, except as listed below, have been paid in full for all labor and/or materials supplied to, for through or at the direct or indirect request of the Contractor prior to, through and including the date of this affidavit.

**EXCEPTIONS:** (If none, write "NONE". The Contractor shall furnish a bond acceptable to the Owner for each exception.)

**CONTRACTOR**

By

Title

Subscribed and sworn to before me this day of

Notary Public:

My Commission Expires:

Form L

## Prevailing Wage Rates
## Certification Statement

**Date** _____

**Project Name** _____ **CSJ#** _____

**Contractor** _____ **Application#** _____

**I,** _____ **do hereby state:**
**(Name of Project Director)**

1. That a payroll (form WH-347 or similar form) was submitted for contract work Performed for the period covered by the attached application.
2. That a statement of compliance(form WH-347 or similar form) was submitted with the payroll.
3. The certified payroll complies with the classifications and minimum wage rates Stipulated in the contract.
4. That a minimum of one interview was conducted with laborers using Form HUD-11 or similar.

_____
Signature

# CERTIFICATE OF CONSTRUCTION COMPLETION

THIS IS TO CERTIFY THAT ON _____ DAY OF _____A FINAL INSPECTION was made of the project herein described.

CONTRACT

CONTRACT DATE: _____
OWNER: _____
CONSTRUCTION CONTRACTOR: _____
OF THE CITY OF _____ STATE OF _____

PROJECT DESCRIPTION

CONSTRUCTION OF _____

CONTRACT NO: _____
Located in or near the City/Precinct Of _____

THIS IS TO CERTIFY"

1. That the work has been completed in accordance with the plans and specifications and all addenda, change orders, supplemental agreements thereto, and with the following exceptions:

   _____

2. That the sum of _____, deducted from the final payment of the Contractor is a fair and equitable settlement for the foregoing except work.

3. That the contractor has presented a "Certificate of Release" starting under oath, that all claims arising out of the performance of work have been fulfilled, and the Owner is released from all claims arising under or by virtue of said contract.

4. That the CONTRACTOR has presented in behalf of itself and its sureties, satisfactory evidence that it is bound to repair, replace, and make good any faulty workmanship and/or materials discovered in the work within a period of one year from this date, as provided in said contract.

5. Amount of Original Contract _____
   Present Amount of Contract _____
   Total Amount of earned to Date _____
   Less: previous payments _____
   Balance _____
   Authorized deductions _____
   AMOUNTY OF FINAL PAYMENT _____

6. That the final payment in the amount of _____ _____ is now due and payable.

_____
Engineer's Signature

**CONCURRED BY:**

_____
Contractor's Name

By:_____

Title: _____

**CONCURRED BY:**

_____
City/Precinct

By:_____

Title: _____

## *CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS*

**PROJECT:** **PROJECT NO.**
**OWNER:**
**CONTRACTOR:**
**ENGINEER:**

The Contractor, in accordance with the Contract Documents, and in consideration for the full and final payment to the Contractor for all services in connection with the project, does hereby waive and release any and all liens, or any and all claims to liens which the Contractor may have on or affecting the project as a result of its contract(s) for the Project or for performing labor and/or furnishing materials in any way connected with the construction of any aspect of the project. The Contractor further certifies and warrants that all subcontractors of labor and/or materials for the Project, except as listed below, have been paid in full for all labor and/or materials supplied to, for through or at the direct or indirect request of the Contractor prior to, through and including the date of this affidavit.

**EXCEPTIONS:** (If none, write "NONE". The Contractor shall furnish a bond acceptable to the Owner for each exception.)

**CONTRACTOR**

By

Title

Subscribed and sworn to before me this day of

Notary Public:

My Commission Expires:

Form L

_____ Contractor Name
_____ Starting Date
_____ Project Ending Date
_____ Engineer's / County Project Description

Application No.: _____
Application Date: _____
Period To: _____
Engineer's / County Project No.: _____

| No. | Item Code | Description | Unit | Original Schedule Value: Original Rates | Original Schedule Value: Quan | Original Schedule Value: Dollars | Revised Rates | Value: Quan | Value: Dollars | First Month: Monthly Quan | First Month: QTY to Date | First Month: Item Cost (Monthly) | Second Month: Monthly Quan | Second Month: QTY to Date | Second Month: Item Cost (Monthly) | Third Month: Monthly Quan | Third Month: QTY to Date | Third Month: Item Cost (Monthly) | Total to Date | Balance To Finish: Quan | Balance To Finish: Dollars |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (905) ROADWAY | | | | | | | | | | | | | | | | | | | |
| 1 | 100 | Preparation of Right-of-Way | Sta | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 2 | 152 | 6" road Grader Work(Dens Cont.) Subgrade | SY | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 3 | 247 | 6" FL BS(Compl in Plac) | S.Y. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 4 | 310 | Asph. Matrl. (MC-30) | Gal | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 5 | 340 | Asph. Conc. Ty D | S.Y. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 6 | 500 | Mobilization | L.S. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 7 | 502 | Barricades, Signs and Traffic Handling | Mo | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 8 | 530 | Turnouts | Ea | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 9 | 5249 | Tem Sedmt Cont Fence (Installed) | L.F. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 10 | 5249 | Tem Sedmt Cont Fence Handling (Removed) | L.F. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | | 0 | - | - | - | - | - | 0.0 | 0.0 |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | Total Roadway | | | | - | | | - | | | - | | | - | | | - | - | 0.0 | 0.0 |
| | | | | | | | | | | | | | | | | | | | | | |
| | | (906) DRAINAGE | | | | | | | | | | | | | | | | | | | |
| 11 | 530 | Drvwys (Asph Conc Pav) (PRB) | S.Y. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 12 | 247 | Drvwys Flexible Base | S.Y. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 13 | 556 | 8" Storm Drain | L.F. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 14 | 556 | 18" RCP Storm Drain | L.F. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 15 | 465 | Ty "A" Inlets | Ea. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 16 | 465 | Concrete Manhole | Ea. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 17 | | 15" R.C.P. | L.F. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 18 | | Ty "A" Inlets | Ea. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 19 | | Manhole | Ea | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| 20 | | 6.0" Valley Gutter | L.F. | $ - | 0.0 | - | $ - | 0.0 | - | 0 | 0 | - | 0 | 0 | - | - | - | - | - | 0.0 | 0.0 |
| | | Total Drainage | | | | - | | | - | | | - | | | - | | | - | - | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | TOTAL BASE AMOUNTS: | | | | - | | | - | | | - | | | - | | | - | - | 0.0 | 0.0 |

_____ Print Name

_____ Date

_____ Signature

**Exhibit E-O**

# CONSTRUCTION IDENTIFICATION SIGN:

Size, 4' – 0" X 8' – 0"
Letters to be brown with beige background

Construction Identification Signs To Be Erected Prior To Beginning of Actual Construction

Wood for Signs Shall Be ¾" Waterproofing Resin Bonded Exterior Grade Plywood (Douglas Fir Plywood Association or Equal)

Payment for Furnishing, Erecting, Maintenance and Removing Construction Identification Signs Will Not Be made Directly. Such Costs Shall be Included in the Overall Bid Submitted.

To Be Erected as Indicated on title Sheet.

Precinct Logo

# Your Tax Dollars at Work
# Hidalgo County Pct. 2
Hector "Tito" Palacios, Commissioner

## Gearhart Drive
## Paving and Drainage Improvements

Hidalgo County Commissioner's Court

| | |
|---|---|
| Ramon Garcia | County Judge |
| A.C. Cuellar, Jr. | Commissioner Pct #1 |
| Hector "Tito" Palacios | Commissioner Pct #2 |
| Joe M. Flores | Commissioner Pct #3 |
| Joseph Palacios | Commissioner Pct #4 |

**Project Contractor:** _____ **Project Engineer:** Raul E. Sesin, P.E.

**AI-43355** **Purchasing Department** **15. C. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Comm. Joe Flores, Pct. #3 **Submitted By:** Vangie Garcia, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

Acceptance and approval of the following claims/invoices with Safehouse Security Systems for the provision of security monitoring services at the Penitas Landfill-Precinct 3 with the authority for the County Treasurer to issue payment/check after review, audit and processing procedures are completed by the County Auditor:

Invoice #120532-**$20.00**-01/01/14-01/31/14
Invoice #121024-**$20.00**-02/01/14-02/28/14

### BACKGROUND

Due to lack of cooperation by current vendor (Safehouse Security), Purchasing Department has proceeded in the direction of establishing an agreement with Superior Alarms thru AI#42932 for March 6 Court date for the approval of a security monitoring services to be provided at the Penitas Landfill.

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-432-00-123-001-0-413

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funds available through REQ# 249151, as of 2/28/14.

## Attachments

INVOICES

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/27/2014 11:42 AM |
| Budget & Management | Debbie Tamez | 02/27/2014 11:46 AM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 11:28 AM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Vangie Garcia Started On: 02/26/2014 04:41 PM

Final Approval Date: 02/28/2014

SAFEHOUSE SECURITY SYSTEMS INC. I N V O I C E 12-23-13 120532
P.O. BOX 4452
MCALLEN, TX 78502

Terms : NET 10 DAYS

956-971-0123

2559
SERVICE ADDRESS :

PENITAS LAND FIELD
HIDALGO COUNTY PRECINCT #3
P. O. BOX 607
MISSION TX 78573

PENITAS LAND FIELD
HIDALGO COUNTY PRECINCT #3
1/4 MI W.FM 1427 MILITARTY
NEW OFFICE BUILDING
PENITAS TX 78576
956-519-3756

| QUAN | PART # | DESCRIPTION | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1 | MONITORING | ALARM MONITORING SERV.<br>01-01-14 - 01-31-14 | 20.00 | 20.00 |

mail
RECEIVED
JAN 03 2014
By pct3

WE APPRECIATE
YOUR BUSINESS!
PLEASE TEST YOUR
SYSTEM REGULARLY!

| | | |
|---|---|---|
| SUB-TOTAL | $ | 20.00 |
| SALES TAX | $ | 0.00 |
| T O T A L | $ | 20.00 |

========== OUTSTANDING INVOICES ==========

| 1-29 Days | 30 Days | 60 Days | 90+ Days |
|---|---|---|---|
| 20.00 | 0.00 | 0.00 | 0.00 |

SAFEHOUSE SECURITY SYSTEMS INC.

==========
T O T A L
D U E $ 40.00
==========

SAFEHOUSE SECURITY SYSTEMS INC. I N V O I C E 01-27-14 121024
P.O. BOX 4452
MCALLEN, TX 78502 Terms : NET 10 DAYS

956-971-0123

2559
SERVICE ADDRESS :

PENITAS LAND FIELD
HIDALGO COUNTY PRECINCT #3
P. O. BOX 607
MISSION TX 78573

PENITAS LAND FIELD
HIDALGO COUNTY PRECINCT #3
1/4 MI W.FM 1427 MILITARTY
NEW OFFICE BUILDING
PENITAS TX 78576
956-519-3756

| QUAN | PART # | DESCRIPTION | UNIT PRICE | TOTAL |
|---|---|---|---|---|
| 1 | MONITORING | ALARM MONITORING SERV. 02-01-14 - 02-28-14 | 20.00 | 20.00 |

Mail
RECEIVED
JAN 31 2014
By

WE APPRECIATE
YOUR BUSINESS!
PLEASE TEST YOUR
SYSTEM REGULARLY!

| | | |
|---|---|---|
| SUB-TOTAL | $ | 20.00 |
| SALES TAX | $ | 0.00 |
| T O T A L | $ | 20.00 |

========== OUTSTANDING INVOICES ==========

| 1-29 Days | 30 Days | 60 Days | 90+ Days |
|---|---|---|---|
| 20.00 | 0.00 | 0.00 | 0.00 |

SAFEHOUSE SECURITY SYSTEMS INC.

T O T A L D U E $ 40.00

**AI-43390** **Purchasing Department 15. D. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Nielda Cavazos,
PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

A. Requesting exemption from competitive bidding requirements under the Texas Local Government Code, Section 262.024 (A) (4) a professional appraisal services.

B. Presentation of scoring grid (for the purpose of ranking by CC) of the firms graded and evaluated through the County's approved "pool" of professional appraisal services for (as needed basis) for Fair Market Appraisal for County Owned Property located within Hidalgo County Precinct No. 4.

| evaluators | HLH Appraisal Services | Intrega Realty Resources | Leonel Garza Jr., & Associates |
|---|---|---|---|
| Evaluator | 93 | 91 | 96 |
| Ranking | | | |

C. Authority for the Purchasing Department to negotiate a professional appraisal services contract with the No. 1 ranked firm of _____ for: (as needed basis) for Fair market Appraisal for County Owned Property located within Hidalgo County Precinct No. 4.

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 41200431001240070339

**FUNDS AVAILABLE Y/N?:** y **MATCHING FUNDS Y/N?:**

**BUDGETARY IMPACT:**

4-1200-431-00-124-007-0-339

## Attachments

grid

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Nielda Cavazos | 02/28/2014 11:13 AM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:04 PM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 05:00 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Nielda Cavazos Started On: 02/28/2014 10:54 AM

Final Approval Date: 02/28/2014

HIDALGO COUNTY PRECINCT NO 4
FOR
Appraisal Services

(On call as needed) for Fair Market Appraisal for County Owned Property located within Hidalgo County Pct 4

# Scoring & Evaluation GRID

**Appraisal Services**

| Total Scores | HLH Appraisal Services | Intrga Realty Resources | Leonel Garza JR., & Associates |
|---|---|---|---|
| Evaluator 1 | 93 | 91 | 96 |
| RANKING | | | |

*Scoring & Evaluation was completed by Pct No 4 *

**AI-43376** **Purchasing Department 15. D. 2.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Comm. Joseph Palacios, Pct. #4 **Submitted By:** Moises Salazar, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

**CAPTION**

Requesting authority to advertise the construction with approval of plans and specifications developed/drafted by project architect, Mata-Garcia Architects, L.L.P. for Hidalgo County Precinct No. 4 -Construction of The Linn - San Manuel Emergency Service Facility . RFB No. 2014-067-04-02-MSS.

**BACKGROUND**

Proposed Schedule of Events:

| No. | Event | Date |
|---|---|---|
| 1 | Advertisements | 03/15/14 & 03/22/14 |
| 2 | Pre-Bid Conference | 3/24/14 @ 3PM |
| 3 | **Bid Openings** | **04/02/14 @ 3PM** |

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1200-431-00-124-007-0-540

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Advertisement P.O. 702522

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1301-419-40-124-136-0-720

**FUNDS AVAILABLE Y/N?:** **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funding will be appropriated once final bid is selected.

## Attachments

1

2

3

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/28/2014 02:11 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:13 PM |
| Glinda Pacheco | Glinda Pacheco | 02/28/2014 02:43 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Moises Salazar Started On: 02/27/2014

Final Approval Date: 02/28/2014

# Linn-San Manuel Emergency Services Facility

## Hidalgo County Precinct No. 4

HIDALGO COUNTY PRECINCT 4
JOSEPH PALACIOS, COMMISSIONER
1051 NORTH DOOLITTLE ROAD
EDINBURG, TEXAS 78542

INDEX OF DRAWINGS


| | | | | | |
|---|---|---|---|---|---|
| 0.0 | COVER SHEET | 4.3 | ROOM FINISH, DOOR AND WINDOW SCHEDULES | E-3.0 | ELECTRICAL GENERAL LEGEND AND DETAILS |
| 0.1 | TEXAS ACCESSIBILITY STANDARD GUIDELINES | 4.4 | HEAD, JAMB, SILL DETAILS & CUSTOM DOORS | E-4.0 | ELECTRICAL LIGHTING CONTROL RISERS |
| 0.2 | TEXAS ACCESSIBILITY STANDARD GUIDELINES | 4.5 | EXTERIOR ELEVATIONS | E-4.1 | ELECTRICAL LIGHTING CONTROL RISERS |
| | | 4.6 | ELEVATION DETAILS | E-5.0 | ELECTRICAL PANEL SCHEDUELS AND TELECOMMUNICATION RACK DETAILS |
| 1.0 | SITE PLAN AND DETAILS | 4.7 | PLAN DETAILS | | |
| 1.1 | ENLARGED PLAN AND CANOPY DETAILS | | | E-5.1 | ELECTRICAL RISER AND ONE-LINE DIAGRAMS |
| 1.2 | PURGOLA PLAN AND DETAILS | 5.1 | ROOF PLAN AND DETAILS | | |
| | | 5.2 | ROOFING DETAILS | P-1.0 | PLUMBING SEWER PLAN |
| 2.0 | EXIST. CONDITION AND SURVEY CONTROL PLAN | 5.3 | ROOFING DETAILS | P-1.1 | PLUMBING WATER PLAN |
| 2.1 | PAVING AND DIMENSIONAL CONTROL PLAN | 5.4 | BUILDING SECTIONS | P-2.0 | PLUMBING DETAILS |
| 2.2 | GRADING AND DRAINAGE PLAN | 5.5 | WALL SECTIONS | P-3.0 | PLUMBING RISERS AND SCHEDULES |
| 2.3 | UTILITY LAYOUT | 5.6 | WALL SECTIONS | | |
| 2.4 | SEPTIC TANK PLAN AND DETAILS | 5.7 | WALL SECTIONS | | |
| 2.5 | SUGGESTED EROSION CONTROL PLAN | 5.8 | WALL SECTIONS | | |
| 2.6 | MISCELLANEOUS DETAILS | 5.9 | WALL SECTIONS | | |
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| S1.0 | STRUCTURAL GENERAL NOTES | 5.11 | SECTION DETAILS | | |
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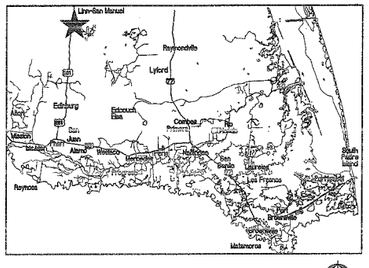
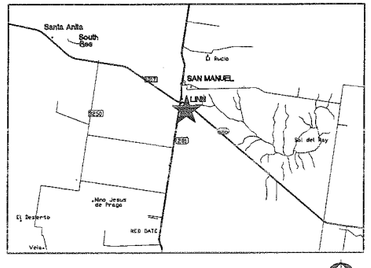
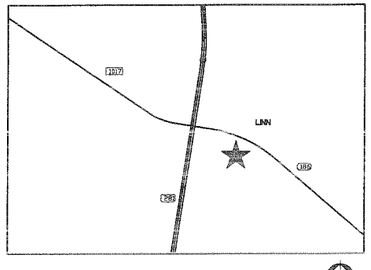
| S1.3 | ROOF UPLIFT PLAN | 6.1 | REFLECTED CEILING PLAN AND DETAILS | | |
| S2.0 | FOOTING SCHEDULE AT STEEL COLUMNS & DETAILS | | | | |
| S2.1 | LINTEL SCHEDULE AND CMU DETAILS | 7.1 | FIXTURE PLAN | | |
| S2.2 | FASTENING SCHEDULE AND DETAILS | 7.2 | INTERIOR ELEVATIONS | | |
| S3.0 | FOUNDATION PLAN | | | | |
| S4.0 | CMU WALL PLAN / STUD WALL PLAN | MEP-1.0 | MEP GENERAL LEGEND | | |
| S5.0 | FRAMING PLAN | M-1.0 | MECHANICAL PLAN AND MECHANICAL ROOM SECTION | | |
| S6.0 | FOOTING DETAILS | M-2.0 | MECHANICAL DETAILS | | |
| S6.1 | FRAMING DETAILS | M-3.0 | MECHANICAL SCHEDULES | | |
| S6.2 | SECTIONS | | | | |
| S6.3 | SECTIONS | E-1.0 | ELECTRICAL SITE PLAN AND ELEVATIONS | | |
| | | E-1.1 | ELECTRICAL LIGHTING PLAN AND DETAILS | | |
| 4.1 | ARCHITECTURAL FLOOR PLAN | E-1.2 | ELECTRICAL POWER AND SPECIAL SYSTEMS PLAN | | |
| 4.2 | RESTROOM & KITCHEN PLANS AND ELEVATIONS | E-2.0 | ELECTRICAL DETAILS | | |

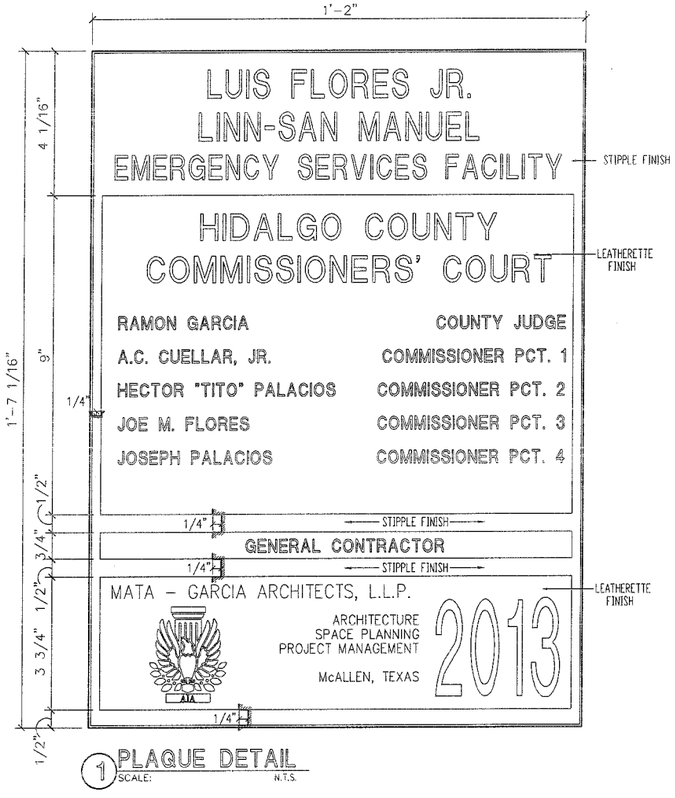

REGION MAP NORTH




CITY MAP NORTH




STREET MAP NORTH




1 PLAQUE DETAIL
SCALE: N.T.S.

## PROJECT DATA

BUILDING CODE: INTERNATIONAL BUILDING CODE 2009

INTERPRETATION
1. PROJECT DESCRIPTION: NEW COMMERCIAL CONSTRUCTION
2. AREAS:
   AREA 1 - GROUP B
   CONSTRUCTION TYPE VB - SPRINKLERED
   ALLOWABLE AREA = 9,000 SQ.FT ACTUAL AREA = 3,231 SQ.FT
   AREA 2 - GROUP S-1
   CONSTRUCTION TYPE IIB - SPRINKLERED
   ALLOWABLE AREA = 17,500 SQ.FT ACTUAL AREA = 3,689 SQ.FT
   AREA 3 - GROUP U (ACCESSORY BUILDING)
   CONSTRUCTION TYPE IIB - UNSPRINKLERED
   ALLOWABLE AREA = 8,500 SQ.FT ACTUAL AREA = 2,156 SQ.FT
3. ACCESSIBILITY: TEXAS ACCESSIBILITY STANDARDS 2012


ARCHITECT:
Mata-Garcia Architects
1314 Ivy Ave.
McAllen, Texas 78501
TEL. (956) 631-1945
FAX (956) 631-1968

STRUCTURAL/CIVIL:
Chanin Engineering, LLC
400 Nolana, Suite N2
McAllen, Texas 78504
TEL. (956) 687-9421
FAX. (956) 687-3211

MECHANICAL/ELECTRICAL/PLUMBING:
Sigma HN Engineers, PLLC
701 S. 15th Street
McAllen, Texas 78501
TEL. (956) 279-0624
FAX. (956) 687-5561


PROJECT #: 201310
DATE:
DRAWN BY: CRC
CHECKED BY: H.R.G.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4
PROJECT: LINN-SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

HECTOR R. GARCIA 13962
LICENSE EXPIRES 03/31/2014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Mata & Garcia
ARCHITECTS L.L.P.
architecture
project management
interior design
Fernando Mata A.I.A., Partner
Hector Rene Garcia R.A., Partner
1314 West Ivy Avenue McAllen, Texas 78501
Tel: (956) 631-1945 Fax: (956) 631-1968



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SHEET: 0.0

## 4.2 SPACE ALLOWANCES AND REACH RANGES

TAS SECTIONS 4.2.1 – WHEELCHAIR PASSAGE WIDTH

A. The minimum clear width for single wheelchair passage shall be 32" at a point and 36" continuously

TAS SECTIONS 4.2.2 – WIDTH FOR WHEELCHAIR PASSING

A. The minimum clear width for two wheelchairs to pass is 60"

TAS SECTIONS 4.2.4.1 – SIZE AND APPROACH

A. Minimum clear floor space for a wheelchair and occupant shall be 30" wide x 48" long. Clear floor space shall be centered on the element it serves.

## 4.3 ACCESSIBLE ROUTE

TAS SECTIONS 4.3.2 – LOCATION

A. At least one accessible route shall be provided from public transportation stops, accessible parking and loading zones, and public streets or sidewalks to the accessible building entrance.

TAS SECTIONS 4.3.3 – WIDTH

A. The minimum clear width of an accessible route shall be 36" except at doors.

TAS SECTIONS 4.3.4 – PASSING SPACE

A. If an accessible route is less than 60" in width, then passing spaces of at least 60"x60" shall be provided at 200' max. spacing.

TAS SECTIONS 4.3.5 – HEAD ROOM

A. Accessible routes shall have 80" min. clear head room.

TAS SECTIONS 4.3.7 – SLOPE

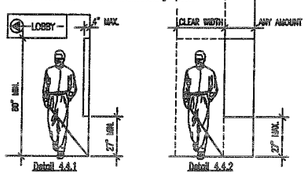
A. Running slope shall not exceed 1:20. (If slope exceeds 1:20, refer to section 4.8)

B. Cross slope shall not exceed 1:50

## 4.4 PROTRUDING OBJECTS (REFERENCE DETAIL 4.4.1 & 4.4.2)

TAS SECTIONS 4.4.1 – GENERAL

A. Objects projecting from walls (for example, telephones) with their leading edges between 27"–80" above the finished floor shall protrude no more than 4" into walks, halls, corridors, passageways, or aisles. Objects mounted with their leading edges at or below 27" above the finished floor may protrude any amount. Free-standing objects mounted on posts or pylons may overhang 12" maximum from 27"–80" above the ground or finished floor. Protruding objects shall not reduce the clear width of an accessible route or maneuvering space.



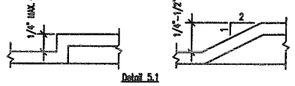

Detail 4.4.1 Detail 4.4.2

## 4.5 GROUND AND FLOOR SURFACES

TAS SECTIONS 4.5.2 – CHANGES IN LEVEL (REFERENCE DETAIL 5.1)

A. Changes in level up to 1/4" may be vertical and without edge treatment

B. Changes in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2.




Detail 5.1

TAS SECTIONS 4.5.3 – CARPET

A. Carpet provided on a floor surface shall be securely attached; have a firm pad or backing, or no pad; and have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Maximum pile thickness shall be 1/2". Exposed edges of carpet shall be fastened to floor surfaces and have trim along the exposed edges.

TAS SECTIONS 4.5.4 – GRATINGS

A. If gratings are located in walking surfaces or along accessible routes, then they shall have spaces no greater than 1/2" wide in one direction.

B. If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

## 4.6 PARKING AND PASSENGER LOADING ZONES

TAS SECTIONS 4.6.3 – PARKING SPACES

A. Accessible parking shall be at least 96" wide.

B. Parking access aisles shall be 60" wide.
Van accessible access aisles shal be 96" wide.

C. Surface slope shall not exceed 1:50 in all directions
(Note : no built up curb ramp may be located in an accessible parking access aisle.)

TAS SECTIONS 4.6.4 – SIGNAGE

A. Each accessible parking space must have individual vertically mounted or suspended sign. Required van accessible spaces must be designatred.

A. Characters and symbols on such signs shall be located 60" minimum above the ground.

B. Signage located within an accessible route shall be located 80" min. above the walking surface.

TAS SECTIONS 4.6.5 – VERTICAL CLEARANCE

A. Provide minimum vertical clearance of 114" at accessible passenger loading zones and along at least one vehicle access route from site entrances and exits.

TAS SECTIONS 4.6.6 – PASSENGER LOADING ZONE

A. Passenger loading zones shall provide an access aisle at least 60" wide and 20 ft long adjacent and parallel to the vehicle pull-up space. If there are curbs between the access aisle and the vehicle pull-up space, then a curb ramp complying with 4.7 shall be provided. Vehicle standing spaces and access aisles shall be level with surface slopes not exceeding 1:50 in all directions.

## 4.7 CURB RAMPS

TAS SECTIONS 4.7.2 – SLOPE (REFERENCE DETAIL 4.7)

A. Slopes of curb ramps shall comply with 4.8.2.

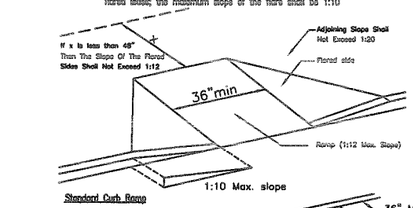
B. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.

TAS SECTIONS 4.7.3 – WIDTH (REFERENCE DETAIL 4.7)

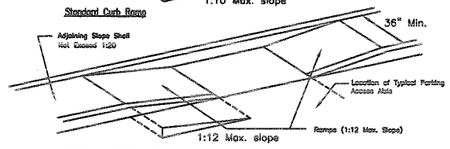
A. The minimum width of a curb ramp shall be 36", exclusive of flared sides.

TAS SECTIONS 4.7.5 – SIDES OF CURB RAMPS (REFERENCE DETAIL 4.7)

A. If a curb ramp is located where pedestrians must walk across the ramp or where it is not protected by handrails or guardrails, it shall have flared sides; the maximum slope of the flare shall be 1:10




Standard Curb Ramp




Curb Ramp Parallel to Curb

Detail 4.7

TAS SECTIONS 4.7.10 – DIAGONAL CURB RAMPS

A. If diagonal curb ramps have returned curbs or other wall-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48" minimum clear space. If diagonal curb ramps are provided at marked crossings, the 48" clear space shall be within the markings. If diagonal curb ramps have flared sides, they shall also have at least a 24" long segment of straight curb located on each side of the curb ramp and within the marked crossing.

TAS SECTIONS 4.7.11 – ISLANDS

A. Any raised islands in crossings shall be cut through level with the street or curb ramps at both sides and a level area at least 48" long between the curb ramps in the part of the island intersected by the crossings.

## 4.8 RAMPS

TAS SECTIONS 4.8.1 – GENERAL

A. Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp and shall comply with 4.8

TAS SECTIONS 4.8.2 – SLOPE AND RISE

A. The least possible slope shall be used for any ramp. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any run shall be 30".

TAS SECTIONS 4.8.3 – CLEAR WIDTH

A. The minimum clear width of a ramp 30 ft or less in length shall be 36". Ramps more than 30 ft in length shall have a minimum clear width of 44".

TAS SECTION 4.8.4 – LANDINGS

A. Level landings required at top and bottom of each run, with the following features:
1. Minimum Width: Equal to width of ramp
2. Length: Minumum 60" clear
3. At change of direction landing shal be 60" x 60" min.

TAS SECTION 4.8.5 – HANDRAILS

A. Handrails are required at all ramps with > 6" rise.

B. Height: 34–38" above ramp surface

C. The clear space between the handrail and the wall shall be 1–1/2".

TAS SECTIONS 4.8.7 – EDGE PROTECTION

A. Ramps and landings with drop offs shall have curbs, walls, railings, or projecting surfaces that prevent slipping off the ramp. Curbs shall be a minimum of 2" high.

## 4.9 STAIRS

TAS SECTIONS 4.9.2 – TREADS AND RISERS

A. All steps on a flight of stairs shall have uniform riser heights and tread widths

1. Minimum tread depth shall be 11", measured from riser to riser (not including nosing)
2. Open risers are not permitted

TAS SECTION 4.9.4 – HANDRAILS

A. Non-continuous handrails shall extend 12" beyond the top riser and 12" plus the width of one tread beyond the bottom riser. At the top, the extension shall be parallel to the floor. At the bottom, the handrail shall continue to slope for a distance of one tread width (11"); the remaining extension shall be horizontal.

B. Height: 34" – 38", measured from the stair nosing.

## 4.10 ELEVATORS

TAS SECTIONS 4.10.3 – HALL CALL BUTTONS

A. Shall be centered 42" above floor

TAS SECTIONS 4.10.4 – HALL LANTERNS

A. Visible signals shall have the following features:
1. Fixtures shall be mounted with centerline at least 72" above the lobby floor
2. Visual elements shall be at least 2–1/2" in the smallest dimension

TAS SECTIONS 4.10.5 – RAISED AND BRAILLE CHARACTERS ON HOISTWAY ENTRANCES

A. All elevator hoistway entrances shall have raised and Braille floor no. designations provided on both jambs. Centerline of the characters shall be 60" above the floor. Characters shall be 2" high.

TAS SECTIONS 4.10.6 – DOOR PROTECTIVE AND REOPENING DEVICE

A. Elevator doors shall open and close automatically. They shall be provided with a reopening device that will stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

TAS SECTIONS 4.10.12 – CAR CONTROLS

A. All floor buttons shall be:
1. All control buttons shall be at least 3/4" in their smallest dim. They shall be flush or raised.
2. All control buttons shall be designated by Braille and by raised standard alphabet characters for letters, arabic characters for numerals. The call button for the main entry floor shall be designated by a raised star at the left of the floor designation.
3. Maximum 54" above floor where side approach is provided
4. Maximum 48" where forward approach is provided

B. Emergency Controls:
1. Shall have centerlines 35" minimum above floor
2. Shall be grouped at bottom of panel

C. The emergency communication system shall not require voice communication.

## 4.11 PLATFORM LIFTS

NOTE : REQUIRES A VARIANCE FROM THE T.D.L.R. TO USE IN LIEU OF AN ELEVATOR

TAS SECTIONS 4.11.2, 4.27.3 – OTHER REQUIREMENTS
CONTROLS AND OPERATING SYSTEMS

A. Heights permitted:
Controls and operating mechanisms shall be located for either a forward or side approach from any direction of travel. They shall be located 25" min. and 48" maximum above the floor. They shall be operable with one hand. There shall be at least one handrail complying with 4.26. Wheelstops and guardrails shall be provided where necessary.

## 4.13 DOORS

TAS SECTION 4.13.4 – DOUBLE – LEAF DOORWAYS

A. Doorways with two independently operated leaves shall have at least one active leaf that meets the requirements in 4.13.5 and 4.13.8.

TAS SECTION 4.13.5 – CLEAR WIDTH

A. Doorways shall provide a clear opening of 32" minimum, with the door open 90°.
1. Clear opening shall be measured between the face of the door and opposite stop.
2. Openings more than 24" in depth shall provide a clear opening of 36" minimum.
Exception: Doors not requiring full user passage, such as shallow closets, shall have a clear opening of 20" minimum.

TAS SECTION 4.13.6 – MANEUVERING CLEARANCES AT DOORS

Provide level (1:50 max. slope) and clear maneuvering area at doors as follows:

A. Front approach pull side – 60" min. width & 18" min. beside strike edge
Front approach push side – 48" min width & 0" beside strike edge
(12" @ strike if door has both a closer and a latch)

B. Hinge side approach pull side – 60" min. width; 36" min. beside strike edge or – 54" min. width; 42" min. beside strike edge
Hinge side approach push side – 42" min. width & 18" min. beside hinge edge
(48"min. width if door has both a closer and a latch)

C. Latch side approach pull side – 46" min. width and 24" min. beside strike edge
(54"min. width if door has a closer)
Latch side approach push side – 42" min. width and 24" min. beside strike edge
(48"min. width if door has a closer)

TAS SECTIONS 4.13.8 – THRESHOLDS AT DOORWAYS

A. Maximum threshold height: 1/2" (3/4" at exterior sliding doors). Raised thresholds and floor level changes shall be beveled with a slope no greater than 1:2.

TAS SECTION 4.13.9 – DOOR HARDWARE

A. Handles, pulls, latches, locks, and other operating devices shall have a shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate.

1. Lever-operated mechanisms, push-type mechanisms, and U-shaped handles are acceptable designs.

2. When sliding doors are fully open, operating hardware shall be exposed and usable from both sides.

3. Hardware required for accessible door passage shall be mounted no higher than 48" above finished floor.

TAS SECTION 4.13.10 – DOOR CLOSERS

A. If a door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70°, the door will take at least 3 seconds to move to a point 3" from the latch, measured to the leading edge of the door.

TAS SECTION 4.13.11 – DOOR OPENING FORCE

A. The maximum force for pushing or pulling open a door shall be as follows:

1. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.

2. Other doors
a. Exterior hinged doors: no requirement.
b. Interior hinged doors: 5.0 lbf.
c. Sliding or folding doors: 5.0 lbf.
These forces do not apply to the force required to retract latch bolts or disengage other devices that may hold the door in a closed position.

## 4.15 DRINKING FOUNTAINS

TAS SECTION 4.15.2 – SPOUT HEIGHT (REFERENCE DETAIL 4.15 for accessible unit)

A. Accessible spouts shall be no higher than 36", measured from the floor or ground surface to the spout outlet.

B. In addition to accessible unit, at least one drinking fountain shall be at standard height (may be 'high/low' type if located in one location).

TAS SECTION 4.15.3 – SPOUT LOCATION

A. Spouts shall be located at the front of the unit and shall direct the water flow in a trajectory that is parallel or nearly parallel to the front of the unit.

1. The spout shall provide a flow of water at least 4" high.
2. If the fountain has a round or oval bowl, the spout must be positioned so the flow of water is within 3" of the front edge of the fountain.

TAS SECTION 4.15.4 – CONTROLS

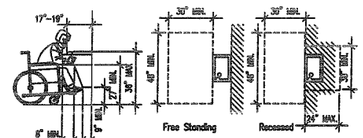
A. Unit controls shall be front mounted or side mounted near the front edge.

TAS SECTION 4.15.5 – CLEARANCES (REFERENCE DETAIL 4.15).

A. Wall and post mounted cantilever fountains shall have clear knee space as follows:

1. Minimum 27" high (from apron bottom to floor) minimum 30" wide, and 17" – 19" deep.
2. A minimum 30" by 48" clear floor space allowing a forward approach to the unit shall be provided.

B. Free standing or built-in units not having a clear knee space shall have a minimum 30" by 48" clear floor space allowing a parallel approach to the unit.



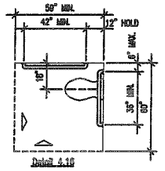

Detail 4.15

## 4.16 WATER CLOSETS

TAS SECTION 4.16.2 – CLEAR FLOOR SPACE

A. Clear floor space for water closets not in stalls shall be provided as follows:
Front approach – 48" min. wide x 66" min. long
Side approach – 56" min. to front of toilet x 48" min. wide
Both approach – 60" min. wide x 56" min. long (Reference Detail 4.16)

B. No doorswings are allowed in clear floor area.




Detail 4.16

TAS SECTION 4.16.3 – HEIGHT (REFERENCE DETAIL 4.16.2)

A. The height to the top of the toilet seat shall be 17" – 19" above floor.

1. Seats shall not be sprung to return to a lifted position.

TAS SECTIONS 4.16.4, 4.26 – GRAB BARS (REFERENCE DETAILS 4.16.1, 4.16.2 & 4.16.3)

A. For water closets not located in toilet stalls, the following grab bars shall be provided, 33" – 36" above the finish floor:

1. Side wall: 42" long minimum, hold 12" min. from back wall.
2. Back wall: 36" long minimum, 12" minimum each side of water closet centerline.

Refer to 4.26 Grab Bars for size and structural elements.

TAS SECTIONS 4.16.5, 4.27.4 – FLUSH CONTROLS (REFERENCE DETAIL 4.16.3)

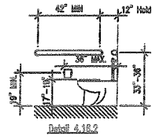
A. Controls shall be 44" maximum above the finish floor.

1. Lever controls or flush valves shall be mounted on the wide side of toilet areas.
2. Controls shall be hand operated or automatic.
3. Controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.
4. The force required to activate controls shall be no greater than 5lbf.

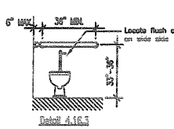
TAS SECTION 4.16.6 – DISPENSERS (REFERENCE DETAIL 4.16.2)

A. Toilet paper dispensers shall be installed on the side wall, a minimum 19" above the floor, and a maximum 36" from the rear wall.

1. Dispensers that control delivery or do not permit continuous paper flow shall not be used.




Detail 4.16.2




Detail 4.16.3

## 4.17 TOILET STALLS

TAS SECTION 4.22.4 – WHERE APPLICABLE

A. If toilet stalls are provided in a toilet room or bathroom, then at least one shall be a "standard" accessible toilet stall (for wheelchair users) complying with this section. (REFERENCE DETAIL 4.17.1)

B. If 6 or more toilet stalls are provided in a toilet room or bathroom in addition to the 'standard' accessible stall required; an additional 'alternate A' accessible stall 36" wide (for ambulatory persons with disabilities) complying with this section shall be provided. (REFERENCE DETAIL 4.17.2)

C. Alterations/Existing Conditions: in alteration work, where provision of a 'standard' accessible stall is technically infeasible, or where plumbing code requirements prevent combining existing stalls to provide space, either 'alternate' stall (A or B) complying with this section may be provided in lieu of the standard stall. (Note :requires a variance from T.D.L.R.)

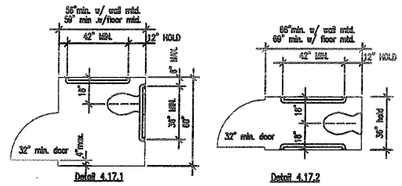
TAS SECTION 4.17.3 – SIZE AND ARRANGEMENT (REFERENCE DETAIL 4.17)

A. Toilet stalls may be arranged to provide either a left or a right handed approach. Accessible toilet stalls shall have the following dimensions:

1. 'Standard' Accessible Stall
60" minimum width.
59" minimum depth, with floor mounted water closet
56" minimum depth, with wall mounted water closet
Door: outward swinging (if door swings into stall, depth shall be increased by 36". Stall doors must have 18" on pull strike jamb.

2. 'Alternate A' Accessible Stall (required when more than 6 stalls provided, permitted in lieu of standard stall only with a variance from T.D.L.R.)
36" width – hold this dim.
69" minimum depth, with floor mounted water closet.
66" minimum depth with wall mounted water closet
Door: outward swinging.

3. 'Alternate B' Accessible Stall (permitted in lieu of standard stall only with variance from T.D.L.R.)
48" minimum width.
54" minimum depth.
Door : outward swinging.




Detail 4.17.1 Detail 4.17.2

TAS SECTION 4.17.4 – TOE CLEARANCES

A. In 'Standard' accessible stalls, the front partition and at least one side partition shall provide a toe clearance of at least 9" above the floor.

B. If the depth of the stall is greater than 60", the toe clearance is not required.

TAS SECTION 4.17.5 – DOORS

A. Toilet stall doors, including hardware, shall comply with 4.13 DOORS

B. If toilet stall approach is from the latch side of the stall door, clearance between the door side of the stall and any obstruction shall be 42" minimum. ( This is an exception from typical door manouvering clearances)

TAS SECTION 4.17.6 – GRAB BARS (REFERENCE DETAILS 4.16.2, 4.16.3, 4.17.1 & 4.17.2)

A. Grab Bars shall be mounted 33" – 36" above the floor.

Refer to 4.26 Grab Bars for size and structural requirements.

## 4.18 URINALS

TAS SECTION 4.18.2 – HEIGHT (REFERENCE DETAIL 12.3.1)

A. Urinals shall be stall-type or wallhung with a tapered, elongated rim at 17" maximum above the finished floor.
The rim shall extend a minimum of 14" from the wall.

TAS SECTION 4.18.3 – CLEAR FLOOR SPACE (REFERENCE DETAIL 4.18.1)

A. A clear floor space 30" wide by 48" deep minimum shall be provided in front of urinal to allow forward approach.

1. This space shall adjoin or overlap an accessible route.

2. Urinal shield that do not extend beyond the front edge of the urinal rim may be provided with 29" clearance between them.

3. Urinals installed in alcoves deeper than 24" require a manouvering area of at least 36" minimum wide, centered on fixture.

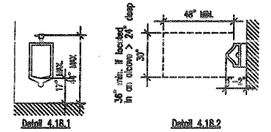
TAS SECTION 4.18.4 – FLUSH CONTROLS (REFERENCE DETAIL 4.18.2)

A. Controls shall be 44" maximum above the finished floor.

1. Controls shall be hand operated or automatic.

2. Controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

3. The force required to activate controls shall be no greater than 5 lfb.




Detail 4.18.1 Detail 4.18.2

## 4.19 LAVATORIES & MIRRORS

TAS SECTION 4.19.2 – HEIGHT & CLEARANCES (REFERENCE DETAIL 4.19.1 & 4.19.2)

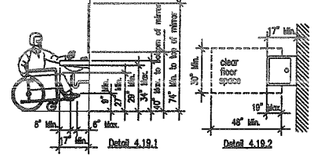
A. Lavatories shall be mounted with the rim or counter surface no higher than 34" above the finished floor.

1. Lavatories shall extend 17" minimum from the wall.

2. Clearance of 29" minimum shall be provided from the finished floor to bottom of apron.

3. Knee clearance of 27" minimum shall extend 8" minimum under the edge of the lavatory.

4. Toe clearance of 9" minimum shall be provided for the full depth of the lavatory.




PROJECT # 20130
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DRAWN BY:
CHECKED BY: H.R.G.
REVISION:
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LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN-SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

HECTOR R. GARCIA 13962
LICENSE EXPIRES: 03/31/2014

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ACCESSIBILITY GUIDELINES (TAS)

SHEET: A0.1

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TAS SECTION 4.19.4 – EXPOSED PIPES AND SURFACES

A. Hot water and drain pipes under lavatories shall be insulated or otherwise configured to protect against contact.

B. There shall be no sharp or abrasive surfaces under lavatories.

TAS SECTIONS 4.19.5, 4.27.6 – FAUCETS

A. Controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

B. The force required to activate controls shall be no greater than 5 lbf.

C. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs.

D. If self-closing valves are used the faucet shall remain open for at least 10 seconds.

TAS SECTION 4.19.6 – MIRRORS (REFERENCE DETAIL 4.19.1)

A. Mirrors shall be mounted with the bottom edge of the reflecting surface 40" maximum above the finished floor.

B. The top edge of the reflecting surface must be at least 74" AFF.

## 4.20 BATHTUBS

TAS SECTION 4.20.2 – FLOOR SPACE

A. Clear floor space shall be provided in front of bathtubs as follows:
30" wide x 80" long beside the bathtub for side approach
48" wide x 80" long beside the bathtub for front approach

with seat at head of tub – 30" wide x 75" long beside tub

TAS SECTION 4.20.3 – SEAT

A. An in-tub seat or a seat at the head end of the tub shall be provided. Seats shall be mounted securely and shall not slip during use.

TAS SECTIONS 4.20.4 – GRAB BARS

A. Heights permitted:

1. With in Tub Seat:
Foot Control wall: 24" long minimum, from outside wall, 33–36" above floor
Back wall: 2 bars, 24" long minimum, 12" maximum from foot wall, 24" maximum from head wall; one 33–36" above floor, one 9" above the tub
Head wall: 12" minimum, from outside wall, 33–36" above floor

2. With Seat at Head of Tub:
Control wall: 24" long minimum, from outside wall, 33–36" above floor
Back wall: 2 bars, 48" long minimum, 12" maximum from foot end, 15" maximum from head end; one 33–36" above floor, one 9" above the tub
Head wall: none

TAS SECTION 4.20.5

A. Controls must be located up front to the open side of tub

TAS SECTION 4.20.6 – SHOWER UNIT

A. A shower spray unit with a hose at least 60" long shall be provided that they can be used both as fixed and hand held.

## 4.21 SHOWER STALLS

TAS SECTION 4.21.2 – SIZE AND CLEARANCES

A. Shower stalls shall be either 36"x36" clear inside dimension (min) at transfer type or 30" min. x 60" min. clear inside dimension at roll in type.

TAS SECTIONS 4.21.3 – SEAT

A. Seat is required in 36"x 36" stalls, and shall have the following features:

1. Shall be 17"–19" above bathroom floor
2. Shall extend the full depth of the stall
3. Shall be located on the wall opposite control wall
4. Maximum space between wall and seat edge shall be 1–1/2"
5. Shall project 16" maximum into stall width, except at the rear 15" maximum of the stall, where the seat may project 23"
6. Where a seat is provided in a roll in type shower it must be the fold-up type.

TAS SECTIONS 4.21.4 – GRAB BARS

A. Grab bars shall be mounted 33–36" above floor

TAS SECTIONS 4.21.5 – CONTROLS

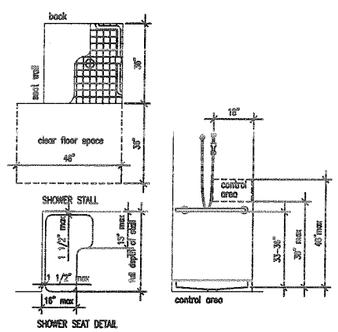
A. All shower controls shall be located 38" minimum and 48" maximum above the floor, up front on the open side.

TAS SECTION 4.21.6 – SHOWER UNIT

A. A shower spray unit with a hose at least 60" long that can be used both as a fixed shower head and as a hand held shower shall be provided. The mounting device shall comply with the requirements for Forward Reach.

TAS SECTIONS 4.21.7 – CURBS

A. If provided, curbs on transfer showers shall be no higher than 1/2" roll-in showers shall not have curbs




## 4.22 TOILET ROOMS

TAS SECTIONS 4.22.2 – DOORS

A. All doors to accessible toilet rooms shall comply with 4.13. Doors shall not swing into clear floor space required for any fixture. Clear floor turning space may overlap door swings.

TAS SECTIONS 4.22.3 – CLEAR FLOOR SPACE

A. The accessible fixtures and controls required in 4.22.4, 4.22.5, 4.22.6 4.22.7 shall be on an accessible route. An unobstructed turning space complying with 4.2.3 shall be provided within an accessible toilet room. The clear floor space of fixtures and controls, the accessible route, and the turning space may overlap, however, the only turning space provided shall not be located within a stall.

TAS SECTIONS 4.22.4 – WATER CLOSETS

A. If toilet stalls are provided, then at least one shall be a standard toilet stall complying with 4.17; where 6 or more stalls are provided in addition to the stall complying with 4.17.3, at least one stall 36" wide with an outward swinging, self-closing door and parallel grab bars shall be provided. Water closets in such stalls shall comply with 4.16.

TAS SECTIONS 4.22.5 – URINALS

A. If urinals are provided, then at least one shall comply with 4.18.

TAS SECTIONS 4.22.6 – LAVATORIES AND MIRRORS

A. If lavatories and mirrors are provided, then at least one of each shall comply with 4.19. Accessible lavatories and mirrors shall not be located within toilet stalls unless other accessible lavatories and mirrors are provided in the toilet room.

TAS SECTIONS 4.22.7 – CONTROLS AND DISPENSERS

A. If controls, dispencers, receptacles, or other equipment are provided, then at least one of each shall be on an accessible route and shall comply with 4.27 – (Controls & Operating Mechanisms).

## 4.23 – BATHROOMS, BATHING FACILITIES, AND SHOWER ROOMS

TAS SECTION 4.23.8 – BATHING AND SHOWER FACILITIES

A. In addition to the requirements of 4.22. toilet rooms :
If tubs and showers are provided, then at least one accessible tub that complies with 4.20 or at least one accessible shower that complies with 4.21 shall be provided

## 4.24 – SINKS

TAS SECTION 4.24.2 – HEIGHT

A. Sinks shall be mounted with the rim or counter surface no higher than 34" above the finished floor.

TAS SECTIONS 4.24.3 – KNEE CLEARANCE

A. Knee clearance of 27" high minimum, 30" wide minimum, and 10" deep minimum shall be provided underneath sinks.

TAS SECTION 4.24.4 – DEPTH

A. Each sink shall be a maximum of 6–1/2" deep.

TAS SECTION 4.24.6 – EXPOSED PIPES AND SURFACES

A. Hot water and drain pipes under sinks shall be insulated or otherwise configured to protect against contact.

B. There shall be no sharp or abrasive surfaces under sinks.

TAS SECTION 4.24.7, 4.27.4 – FAUCETS

A. Controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

B. The force required to activate controls shall be no greater than 5 lbf.

C. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs.

D. If self-closing valves are used the faucet shall remain open for at least 10 seconds.

## 4.25 – STORAGE

TAS SECTION 4.25.1 – DEPTH (REFERENCE DETAIL 4.25.1)

A. Storage areas may be 36" in depth or less. If more than 36" in depth then area must allow 60" diameter of clear floor space for turning.

TAS SECTION 4.25.2 – CLEAR FLOOR SPACE: (REFERENCE DETAIL 4.25.2)

TAS SECTION 4.25.3 – HEIGHT (REFERENCE DETAIL 14.3 AND 4.25.3 & 4.25.4)

A. Where a forward reach is required, accessible storage spaces shall be 48" maximum and 15" minimum above the floor. If the forward reach is over an obstruction (with knee space equal to or greater than reach distance) 20"–25" deep, the maximum height shall be 44"; If the obstruction is less than 20", maximum height shall be 48".

B. Where a side reach is provided, accessible storage spaces shall be 54" maximum and 9" minimum above the floor. Maximum height shall be 46" for side reach over an obstruction 34" maximum high and 24" maximum deep.

C. Clothes rods or shelves shall be a maximum 54" above floor where a side reach is required.

D. Where the distance from the wheelchair to the clothes rod or shelf exceeds 10" (as at closets with inaccessible doors) the following criteria shall be met:

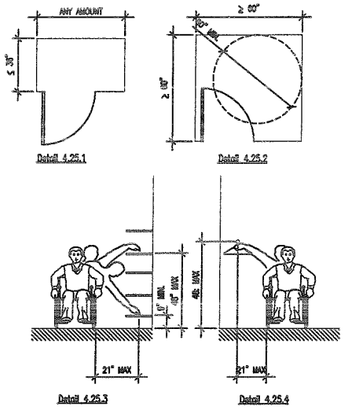
1. Shelves: Reach: 21" maximum; height: 48" maximum, 9" minimum.

2. Clothes rods: reach 21" maximum; height: 48" maximum.

TAS SECTIONS 4.25.4, 4.27.4 – HARDWARE

A. Hardware for accessible storage facilities shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.

B. The force required to activate the hardware shall be no greater than 5 lbf




## 4.26 – GRAB BARS

TAS SECTION 4.26.2 – SIZE AND SPACING

A. Diameter or width of gripping surface shall be 1–1/4" to 1–1/2", or the shape shall provide an equivalent gripping surface.

1. The space between grab bars and adjacent walls shall be 1–1/2"

TAS SECTION 4.26.3 – STRUCTURAL STRENGTH

A. Grab bars and mounting devices shall meet the following requirements:

1. Bending stress induced by maximum bending moment from application of 250 lbf shall be less than allowable stress for material used.

2. Shear stress induced by application of 250 lbf shall be less than allowable shear stress for material used. If connection between grab bar and mounting bracket is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.

3. Shear force induced in a fastener or mounting device from application of 250 lbf shall be less than allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.

4. Tensile force induced in a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal load between the fastener and the supporting structure.

5. Grab bars shall not rotate within their fittings.

TAS SECTION 4.26.4 – ELIMINATING HAZARDS

A. Grab bars and adjacent wall surfaces shall be free of sharp or abrasive surfaces.

B. Edges shall have a radius of 1/8" minimum.

## 4.27 – CONTROLS AND OPERATING MECHANISMSS

TAS SECTION 4.27.3 – HEIGHT (REFERENCE DETAIL 4.30.3)

A. Front approach – 48" max. to 15" min.
Controls located in an alcove >24" deep must have 36" clear floor width.

B. Side approach – 54" max. to 9" min., except per below.

C. Electrical & communication system receptacls shall be mounted no less than 15" above the floor.

## 4.28 – ALARMS

TAS SECTION 4.28.1 – GENERAL

A. When required, visual alarms shall be provided in each of the following areas, as a minimum: restrooms and any other general usage areas (e.g., meeting rooms), hallways, lobbies, and any other area for common use.

TAS SECTION 4.28.2 – AUDIBLE ALARMS

A. If provided, audible alarms shall produce a sound that exceeds the prevailing equivalent sound level in the room or space by at least 15 dba or exceeds any maximum sound level with a duration of 60 seconds by 5 dba, whichever is louder.

B. Sound levels for alarm signals shall not exceed 120 dba.

TAS SECTION 4.28.3 – VISUAL ALARMS

A. Visual alarm signal appliances shall be integrated into the building or facility alarm system. If single station audible alarms are provided then single station visual alarm signals shall be provided.

Visual Alarm appliances shall have the following features:

1. The lamp shall be a xenon strobe type or equilavent.

2. The color shall be clear or nominal white (i.e. unfiltered or clear filtered white light).

3. The maximum pulse duration shall be two-tenths of one second with a maximum duty cycle of 40%. (The pulse duration is defined as the time interval between initial and final points of 10% of max signal)

4. The intensity shall be a minimum of 75 candela.

5. The flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz

6. The appliance shall be placed 80" above the highest floor level within the space or 6" below the ceiling, whichever is lower.

7. In general, no place in any room or space shall be more than 50' from the signal (measured in a horizontal plane).

a. In large rooms and spaces exceeding 100' across, without obstructions 6' above the finished floor, such as auditoriums, devices may be place around the perimeter, spaced a maximum 100' apart, in lieu of suspending appliances from the ceiling.

8. No place in common corridors or hallways shall be more than 50' from the signal.

## 4.30 – SIGNAGE

TAS SECTIONS 4.1.2(7), 4.1.3(16)(a) – WHERE APPLICABLE

A. Signs which designate permanent rooms and spaces shall comply with the requirements listed below for:

1. Raised and Braille Characters, and Pictograms

2. Finish and Contrast

Exception: Employee name signs are not required to comply.

TAS SECTIONS 4.1.2(7), 4.1.3(16)(b) – WHERE APPLICABLE

A. Signs which provide direction to, or information about, functional spaces of the building shall comply with the requirements listed below for:

1. Character Proportion

2. Character Height

3. Finish and Contrast

Exception: Building directories, menus, and all other signs which are temporary are not required to comply.

TAS SECTION 4.1.2(7) – WHERE APPLICABLE (REFERANCE DETAIL 4.30.1)

A. Element and spaces of accessible facilities which shall be identified by the International Symbol of Accessibility are:

1. Parking spaces designated as reserved for persons with disabilities.

2. Accessible passenger loading zones.

3. Accessible entrances when not all are accessible (inaccessible entrances shall have directional signage to indicate route to nearest accessible entrance).

4. Accessible toilet and bathing facilities when not all are accessible.

TAS SECTION 4.30.2 – CHARACTER PROPORTION (REFERENCE DETAIL 4.30.2)

A. Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1, and a stroke-width-to-height ratio between 1:5 and 1:10.

TAS SECTION 4.30.3 – OVERHEAD SIGNS

A. Characters and numbers on overhead signs shall be sized according to the viewing distance from which they are to be read.

1. For signs higher than 80" above the finished floor, character size shall be 3" minimum.

2. The minimum height is measured using an upper case X.

3. Lower case letters are permitted.

TAS SECTION 4.30.4 – RAISED AND BRAILLE CHARCTERS AND PICTOGRAMS

A. Letter and numerals shall be raised 1/32", upper case, sans serif and shall be accompanied by grade 2 Braille.

1. Raised character height: 5/8" minimum, 2" high maximum

2. Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram.

3. The border dimension of the pictogram shall be 6" minimum

TAS SECTION 4.30.5 – FINISH AND CONTRAST

A. The character and background of the signs shall be eggshell, matte, or other non-glare finish. Characters and symbols shall contrast with their background (either light characters on a dark background or dark characters on a light background).

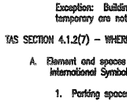
TAS SECTION 4.30.6 – MOUNTING LOCATION AND HEIGHT (REFERENCE DETAIL 4.30.3)

A. Where permanent identification is provided for rooms and spaces, signs shall be installed on the wall adjacent to the latch side of the door.

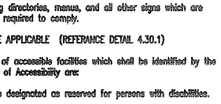
B. Where there is no wall space to the latch side of the door, including at double-leaf doors, signs shall be placed on the nearest adjacent wall.

C. Mounting height shall be 60" above the finished floor to the centerline of the sign.

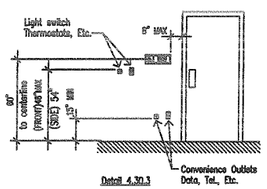
D. Mounting location for such signage shall be so that a person may approach within 3" of signage without encountering protruding objects or standing within the swing of a door.




Detail 4.30.1




Detail 4.30.2




Detail 4.30.3

## 4.31 – PUBLIC TELEPHONES

TAS SECTION 4.1.3(17)(a) – WHERE APPLICABLE

A. If public pay telephones, public closed circuit telephones, or other public telephones if provided, then they shall comply with this section in the quantities below:

1. If one or more single unit of a type of public telephone is provided on a floor, then at least one of those phones shall comply with this section.

2. If one bank (defined as two or more adjacent public telephones, often installed as a unit) of a type of telephone is provided on a floor, then at least one of the telephones at the bank shall comply with this section.

3. If two or more banks of a type of public telephone are provided on a floor, then at least one telephone per bank shall comply with this section. The accessible unit may be installed as a single unit in proximity (either visible or with signage) to the bank. At least one public telephone per floor shall meet the requirements for a forward reach telephone.

Additional public telephones may be installed at any height.

Unless otherwise specified, accessible telephones may be either forward or side reach telephones.

TAS SECTION 4.1.3(17)(b) – WHERE APPLICABLE

A. All telephones required to be accessible shall be equipped with a volume control.

B. In addition, 25%, but never less than one, of all other public telephones provided shall be equipped with a volume control and shall be dispersed all type of telephones, including closed circuit telephones, throughout the building or facility.

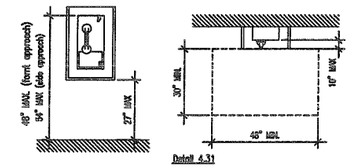
C. Signage displaying the International Symbol of Access for Hearing Loss shall be provided at each telephone equipped with a volume control.

TAS SECTION 51.3 – MOUNTING HEIGHT (REFERENCE DETAIL 4.31)

A. The highest operable part of the telephone shall be 48" maximum above the floor where a forward reach is required, and 54" maximum where a side reach is required.

B. If the forward reach is over an obstruction (with knee space equal to or greater than reach distance) 20"–25" deep the maximum height shall be 44"; If the obstruction is less than 20", maximum height shall be 48"

C. Maximum height shall be 48" for side reach over an obstruction 34" maximum high and 24" maximum deep.




Detail 4.31

## 4.32 – SEATING AND TABLES

TAS SECTION 4.32.2 – SEATING

A. If seating spaces for people in wheelchairs are provided at fixed tables or counters, clear floor space of 30" x 48" shall be provided. Floor space shall not overlap required knee space by more than 19"

TAS SECTION 4.32.3 – KNEE SPACE

B. If seating for people in wheelchairs is provided at fixed tables or counters, knee space at least 27" high, 30" wide and 19" deep shall be provided.

TAS SECTION 4.32.4 – HEIGHT OF TABLES OR COUNTER

C. The tops of accessible tables and counters shall be 28" minimum, and 34" maximum, above the finished floor.

## 4.34 – AUTOMATIC TELLER MACHINES

TAS SECTIONS 4.34.2 – CLEAR FLOOR SPACE

A. Floor space shall comply with 4.2.4 to allow a forward, parallel approach or both.

TAS SECTIONS 4.34.3 – REACH RANGES

A. Forward approach only: controls within forward approach specified in 4.2.5.

B. Parallel approach: controls within unobstructed reach range from clear floor space at protrusion of teller machine surround per table as follows:

| Reach Depth | Maximum Height | Reach Depth | Maximum Height | Reach Depth | Maximum Height |
|---|---|---|---|---|---|
| in inches | in inches | in inches | in inches | in inches | in inches |
| 10 or less | 54 | 15 | 51 | 20 | 48 1/2 |
| 11 | 53 1/2 | 16 | 50 1/2 | 21 | 47 1/2 |
| 12 | 53 | 17 | 50 | 22 | 47 |
| 13 | 52 1/2 | 18 | 49 1/2 | 23 | 46 1/2 |
| 14 | 51 1/2 | 19 | 49 | 24 | 46 |

Note : above does not apply to drive up machines.

## 4.35 DRESSING AND FITTING ROOMS

TAS SECTIONS 4.35.2

A. Clear floor area with a 60" dia. wheelchair turnaround is required. The turnaround area must be clear of door swings.

TAS SECTIONS 4.35.4 – BENCH

A. Every accessible dressing room shall have a 24"x 48" bench fixed to the wall along the larger dimension. The bench shall be mounted 17" to 19" above the finish floor.

TAS SECTIONS 4.35.5 – MIRROR

A. A full-length mirror, measuring at least 18" wide by 54" high, shall be mounted in a position affording a view to a person on the bench as well as to a person in a standing position.

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PRECINCT NO. 4

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ACCESSIBILITY GUIDELINES (TAS)

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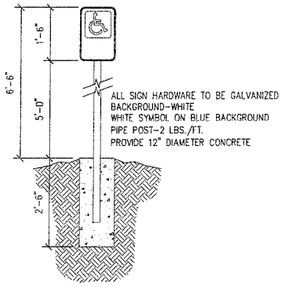


## 2 SIGNAGE DETAIL
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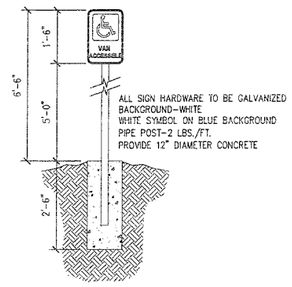


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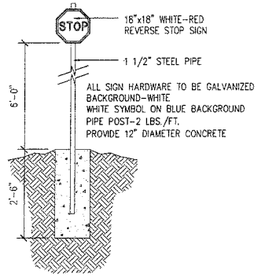


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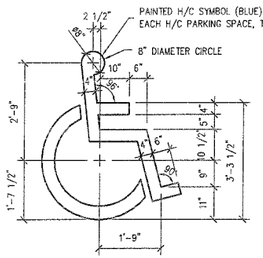


## 5 HANDICAP SIGN
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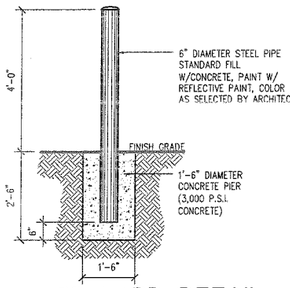
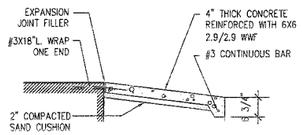



## 6 BOLLARD DETAIL
SCALE: 1/2" = 1'-0"




## 7 RAMP SECTION
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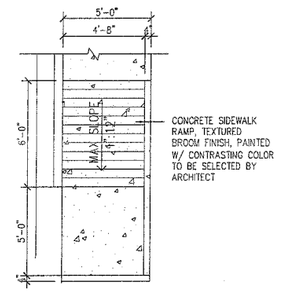
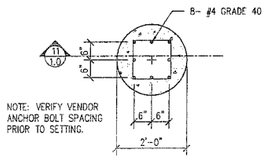
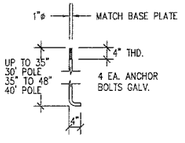


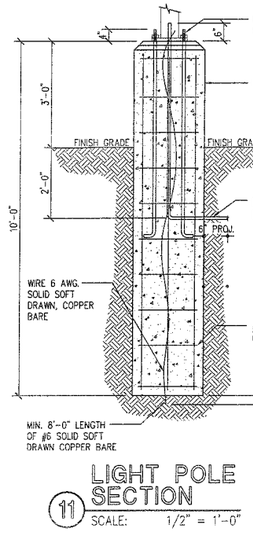

RE:
## 8 WHEELCHAIR RAMP
SCALE: 1/4"=1'-0"




## 9 LIGHT POLE PLAN DETAIL
SCALE: 1/2" = 1'-0"




## 10 ANCHOR BOLT
SCALE: 1/2" = 1'-0"




## 11 LIGHT POLE SECTION
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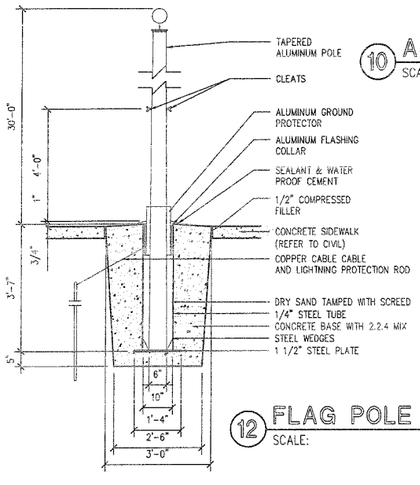


## 12 FLAG POLE SECTION
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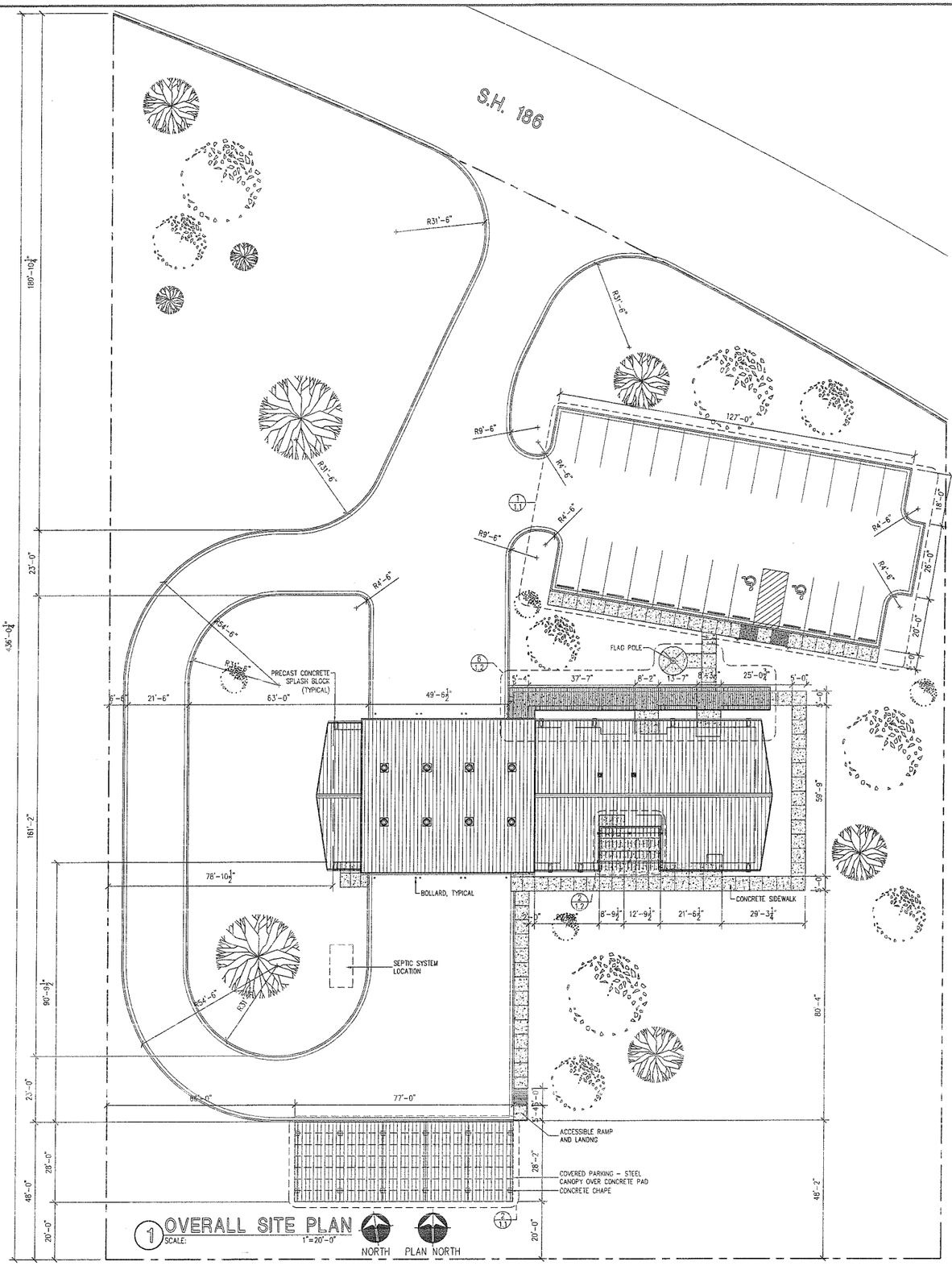


## 1 OVERALL SITE PLAN
SCALE: 1"=20'-0"

NORTH PLAN NORTH

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LINN - SAN MANUEL
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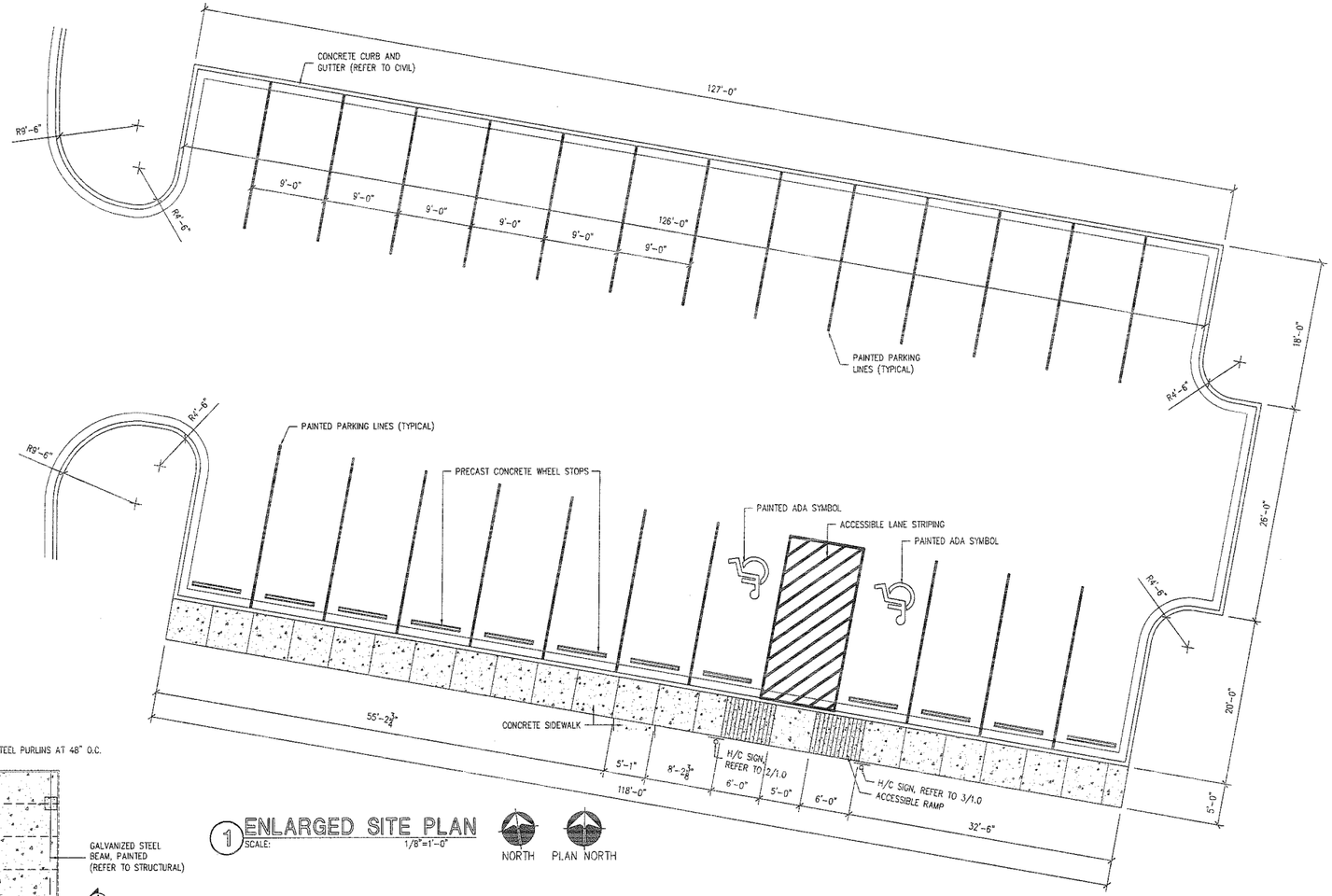
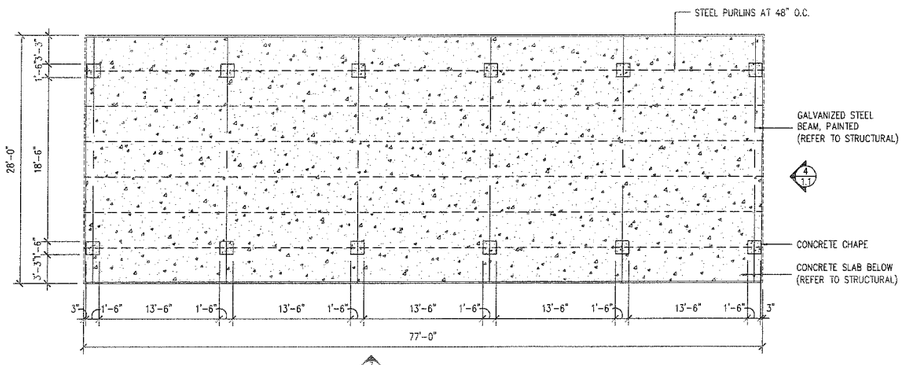


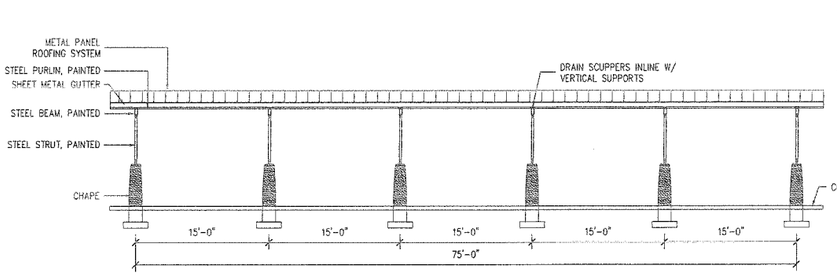

## 1 ENLARGED SITE PLAN
SCALE: 1/8"=1'-0"

NORTH PLAN NORTH

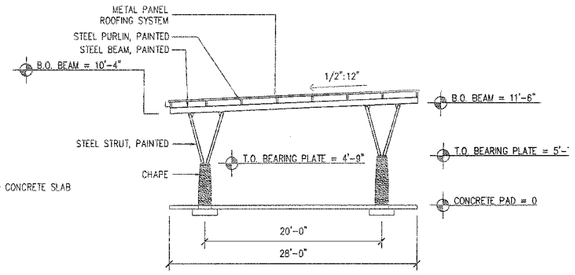



## 2 PARKING CANOPY PLAN
SCALE: 1/8"=1'-0"

NORTH PLAN NORTH




## 3 PARKING CANOPY ELEVATION
SCALE: 1/8"=1'-0"




## 4 PARKING CANOPY ELEVATION
SCALE: 1/8"=1'-0"

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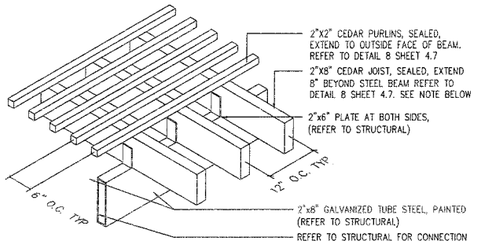


NOTE: OFFSET FIRST CEDAR JOIST 10" O.C. FROM CENTER LINE OF STEEL TUBE.

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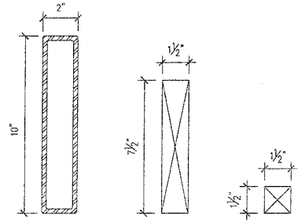
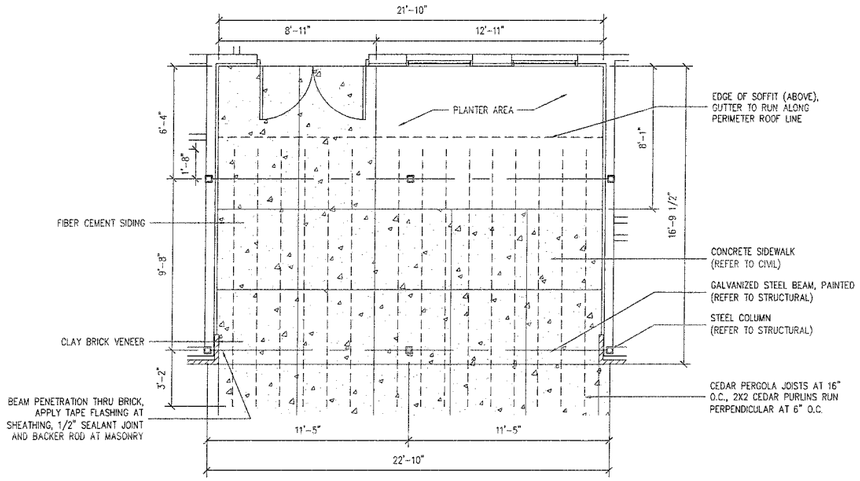
SCALE: 3/4"=1'-0"




## 2 PURGOLA PLAN DETAIL
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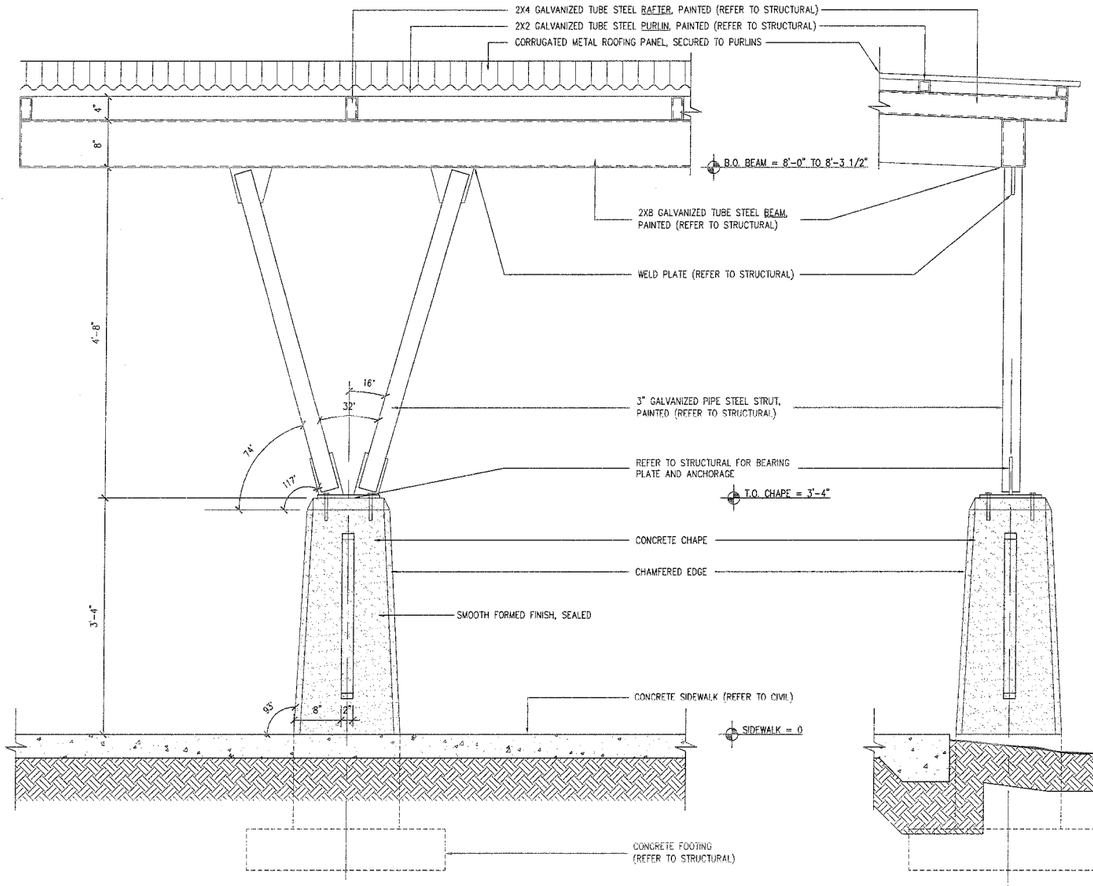


## 3 WALKWAY CANOPY ELEVATION DETAIL
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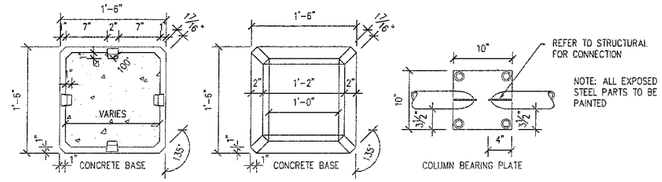


## 4 CHAPE PLAN DETAIL
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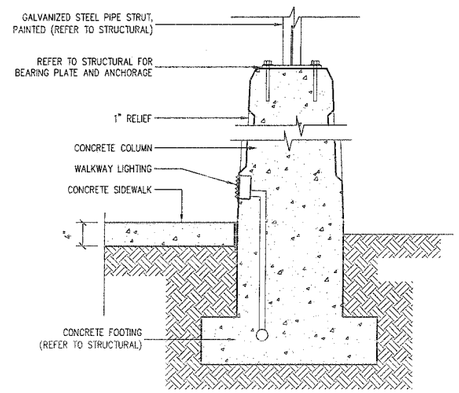


## 5 CHAPE SECTION DETAIL
SCALE: 1"=1'-0"

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# GENERAL NOTES

## GENERAL

1. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, SHORING FOR THE EARTH BANKS, FORMS, SCAFFOLDING, PLANNING, SAFETY NETS, SUPPORT AND BRACING FOR CRANES, GIN POLES, ETC. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

2. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

3. EQUIPMENT FRAMING LOADS, OPENINGS AND STRUCTURE IN ANY WAY RELATED TO HVAC, PLUMBING, OR ELECTRICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. EXACT WEIGHTS AND LOCATIONS OF MECHANICAL EQUIPMENT SHALL BE COORDINATED BY CONTRACTOR. IF THE FINAL LOCATION VARIES FROM THAT SHOWN ON THE PLANS, CONTRACTOR TO NOTIFY ARCHITECT AND ENGINEER FOR APPROVAL BEFORE INSTALLATION.

4. SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THESE STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.

5. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND SHALL BE RESPONSIBLE FOR CONDITIONS OF ALL WORK AND MATERIALS.

6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS AND ELEVATIONS. CONTRACTOR SHALL REPORT ANY DISCREPANCIES IN WRITING TO THE ARCHITECT. ANY CONFLICT BETWEEN THE DRAWING AND SPECIFICATIONS OF THE VARIOUS TRADES INVOLVED SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER.

7. DETAILS SHOWN ON DRAWINGS APPLY AT SIMILAR CONDITIONS.

8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL STANDARDS AND TO ALL APPLICABLE PROVISIONS OF THE GOVERNING BUILDING CODE.

9. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED IN WRITING WHEN WORK COMMENCES.

10. CONTRACTOR SUBSTITUTIONS: ANY MATERIALS OR PRODUCTS THAT ARE SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIALS OR PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS WILL ONLY BE CONSIDERED IF THE FOLLOWING CRITERIA ARE SATISFIED.
    A) A COST SAVING TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST
    B) THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO) AND THE ICBO REPORT IS SUBMITTED WITH THE REQUEST.

## STRUCTURAL OBSERVATION

1. THE PROFESSIONAL ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE SHALL CONDUCT ALL STRUCTURAL OBSERVATIONS. STRUCTURAL OBSERVATIONS SHALL BE FOR THE PURPOSE OF ASCERTAINING GENERAL COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. HOWEVER, SUCH OBSERVATION VISITS SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OBLIGATIONS AND RESPONSIBILITIES TO THE CONSTRUCTION DOCUMENTS.

2. ITEMS THAT REQUIRE A STRUCTURAL OBSERVATION ARE AS FOLLOWS:
    A. STEEL REINFORCEMENT IN SLAB OR FOUNDATION
    B. CMU WALL REINFORCING BEFORE POURING
    C. FRAMING OF ROOF STRUCTURE

3. NOTIFY ENGINEER 24 HOURS IN ADVANCE WHEN A STRUCTURAL OBSERVATION IS REQUIRED.

## DESIGN CRITERIA

1. DESIGN LOADS, STRUCTURAL ANALYSIS AND PREPARATIONS OF STRUCTURAL MEMBERS ARE BASED ON THE FOLLOWING CRITERIA:

2. CODE: ..... IBC 2012
3. VERTICAL LOADS
    A. DEAD LOAD: (METAL ROOF & STEEL FRAME)..... 25 PSF
    B. DEAD LOAD: (METAL ROOF & WOOD FRAMING)..... 20 PSF
    C. LIVE LOAD ROOF (REDUCIBLE): ..... 20 PSF
    D. UPLIFT LOAD ..... SEE ROOF UPLIFT PLAN
    E. MECHANICAL LOAD:
        THE GENERAL CONTRACTOR SHALL SUBMIT ACTUAL WEIGHTS AND LOCATIONS OF EQUIPMENT TO BE USED IN THE PROJECT TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOADS USED IN THE DESIGN AT LEAST TWO WEEKS PRIOR TO FABRICATION AND CONSTRUCTION OF THE SUPPORTING STRUCTURE.

4. LATERAL LOADS
    A. WIND SPEED (VULT): ..... 141 MPH
    B. WIND SPEED (VASD): ..... 110 MPH
    C. EXPOSURE CATEGORY: ..... C
    D. IMPORTANCE FACTOR: ..... 1.00
    E. BUILDING CATEGORY: ..... IV
    F. SEISMIC DESIGN CATEGORY: ..... A
    G. SITE CLASS: ..... E

5. GEOTECHNICAL ENGINEERING REPORT:
    PROVIDED BY: L&G ENGINEERING LABORATORY, LLC
    PROJECT NUMBER: GL13032
    DATED: 1/7/14
    FOUNDATION DESIGN BASED ON THE FOLLOWING PARAMETERS
    A. EFFECTIVE PI: ..... 15
    B. CLIMATIC RATING (Cw): ..... 15
    C. MINIMUM BEAM DEPTH: ..... 24 IN
    D. MINIMUM BEAM WIDTH: ..... 12 IN
    E. GRADE BEAM ALLOWABLE BEARING CAPACITY ): ..... 2500 PSF
    F. SPREAD FOOTING ALLOWABLE BEARING CAPACITY : ..... 3000 PSF
    G. EXISTING PVR: ..... 0.6 IN

## SHOP DRAWINGS & SUBMITTALS

1. SUBMITTAL THAT WILL BE REQUIRED FOR APPROVAL INCLUDE:
    A. CONCRETE MIX DESIGN
    B. CURING COMPOUND FOR CONCRETE
    C. REINFORCING STEEL INCLUDING CMU WALL REINFORCING
    D. STRUCTURAL STEEL
    E. STEEL JOIST
    F. STEEL METAL DECK
    G. PRE-MANUFACTURED WOOD TRUSSES INCLUDING REACTIONS
    H. CMU WALL COMPONENTS

2. ALLOW (2) WEEKS MINIMUM FOR REVIEW OF SHOP DRAWINGS.

3. PRIOR TO ISSUING THE SUBMITTALS TO THE ENGINEER, THE CONTRACTOR SHALL REVIEW THE SHOP DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSION WITH ARCHITECTURAL PLANS.

4. REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS FOR GENERAL CONFORMANCE TO THE STRUCTURAL DRAWINGS. APPROVAL OF THE SHOP DRAWINGS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR FOR ANY ERRORS IN DIMENSIONS OR MATERIAL INDICATED ON THE SHOP DRAWINGS.

## CONCRETE

1. ALL CONCRETE WORK SHALL BE EXECUTED IN ACCORDANCE WITH ACI 318 AND ACI 301 LATEST EDITION.

2. CEMENT SHALL CONFORM TO ASTM CI50 TYPE I AGGREGATE SHALL CONFORM TO ASTM C33.

3. CONCRETE SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH AS FOLLOWS:

| MEMBER TYPE | STRENGTH | SLUMP | MAX AGG. |
|---|---|---|---|
| FOUNDATION AND SLAB | 3000 PSI | 4" -6" | 1.5 IN. |
| PIERS | 3000 PSI | 4" -6" | 1.5 IN. |
| TILT-UP WALLS | 4000 PSI | 4" -6" | 1.5 IN. |
| COLUMNS | 4000 PSI | 4" -6" | 1.5 IN. |
| C.I.P. BEAMS AND LINTELS | 4000 PSI | 4" -6" | 1.5 IN. |

4. INSTALL 10 MIL VAPOR RETARDER UNDER SLABS ON GRADE AND ALONG SIDE OF TRENCHES IN ACCORDANCE WITH ASTM E1643. LAP JOINTS MINIMUM OF 12 INCHES.

5. PLACE CONCRETE CONTINUOUSLY BETWEEN PRE-DETERMINED EXPANSION AND CONSTRUCTION JOINTS.

6. ALL CONSTRUCTION JOINT LOCATIONS TO BE APPROVED BY ARCHITECT AND STRUCTURAL ENGINEER.

7. HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE PERMITTED.

8. CURE CONCRETE IN ACCORDANCE WITH ACI 308.1

9. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR LOCATIONS OF ALL DEPRESSIONS, OPENINGS, ACCESSORIES, ETC.

10. CONDUIT AND PLUMBING LINES SHALL BE PLACED BELOW SLAB REINFORCING AND SHALL BE NO BIGGER THAN 1 INCH.

11. FLYASH MAY BE USED TO REPLACE A PORTION OF THE PORTLAND CEMENT. THE RATIO OF FLYASH TO THE TOTAL OF THE FLYASH AND CEMENT IN A MIX SHALL NOT EXCEED 20%. FLYASH SHALL CONFORM TO ASTM C618, TYPE C OR F.

12. ALL FLOORS SHALL BE CONSTRUCTED WITH A MINIMUM FLATNESS FF=35 AND A MINIMUM LEVELNESS OF FL=25

13. CONTRACTION JOINTS TO BE INSTALLED WITHIN 12 HOURS OF POURING FOUNDATION.

14. TESTING OF CONCRETE SHALL BE DONE AS FOLLOWS:
    1) SETS SHALL CONSIST OF 3 CYLINDERS
        ONE TESTED AT 7 DAYS
        TWO TESTED AT 28 DAYS
    2) ONE SET SHALL BE TAKEN FOR EACH 150 CY AND FOR EVERY 5000 SF OF SURFACE AREA AND AT LEAST ONCE PER DAY OF POURING
    3) A MINIMUM OF 3 SETS SHALL BE TAKEN FOR EACH CLASS OF CONCRETE

15. NO WATER SHALL BE ADDED TO THE CONCRETE AT THE JOBSITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE CONCRETE SUPPLIER TO ENSURE A PUMPABLE AND WORKABLE MIX WITHOUT THE ADDITION OF WATER AT THE JOBSITE. THE USE OF PLASTICIZERS, RETARDANTS AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES. THE USE OF CALCIUM CHLORIDE OR OTHER CHLORIDE BEARING SALTS SHALL NOT BE PERMITTED.

16. PLACE CONCRETE IN A MANNER SO AS TO PREVENT SEGREGATION OF THE MIX. DELAY FLOATING AND TROWELING OPERATIONS UNTIL CONCRETE HAS LOST SURFACE WATER SHEEN OR ALL FREE WATER. DO NOT SPRINKLE FREE CEMENT ON THE SLAB SURFACE. FINISHING OF SLAB SURFACES SHALL COMPLY WITH THE RECOMMENDATIONS OF AC1 302.1 AND 304.

17. UNLESS SPECIFIED, CONCRETE MUST REACH THE FOLLOWING PERCENTAGES OF ITS 28-DAY COMPRESSIVE STRENGTH (F'c), BEFORE FORMS MAY BE REMOVED.

    WALL, COLUMNS, & BEAM SIDES.....40%
    JOIST PANS & BEAM BOTTOMS (IF RESHORED).....70%
    SHORING FOR FLOOR SYSTEMS (IF NOT RESHORED).....85%

18. NO CONCRETE SHALL BE PLACED OUTSIDE OF THESE SPECIFICATIONS WITHOUT THE OWNER'S PRIOR APPROVAL. ANY ITEMS NOT IN COMPLIANCE WITH THE OUTLINED SPECIFICATION SHALL BE REPORTED TO THE OWNER AND STRUCTURAL ENGINEER WITHIN 24 HOURS.

19. CONSTRUCTION VEHICLE LOADS SHALL NOT BE PERMITTED ON ELEVATED SLABS AT ANY TIME.

20. ALL RETAINING WALLS TO BE SHORED UNTIL UPPER SLAB IS IN PLACE AND HAS REACHED 70% OF ITS DESIGN STRENGTH OR THE RETAINING WALL HAS REACHED 100% OF ITS DESIGN STRENGTH. PROVIDE GRANULAR BACKFILL AND PERFORATED DRAIN PIPE CONNECTED TO SITE DRAINAGE, RE: CIVIL PLAN.

## STEEL REINFORCING

1. ALL REINFORCEMENT SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60.

2. REINFORCING STEEL SHALL BE DESIGNED, DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL (SP-66) AND CSRI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE, (ACI #315) LATEST EDITIONS.

3. BARS SCHEDULED OR DETAILED "CONT" SHALL BE SPLICED AT POINTS OF MINIMUM STRESS AND WITH A MINIMUM LAP AS FOLLOWS:
    A. HORIZONTAL BARS w/ MORE THAN 12" OF CONCRETE COVER
        #6 BARS AND SMALLER - 57 BAR DIAMETERS
        #7 BARS AND BIGGER - 72 BAR DIAMETERS
    B. OTHER BARS
        #6 BARS AND SMALLER - 44 BAR DIAMETERS
        #7 BARS AND BIGGER - 55 BAR DIAMETERS

4. CORNER REINFORCING BARS SHALL BE USED AT ALL CORNERS AND INTERSECTIONS.

5. EXTEND THE SLAB REINFORCING STEEL PERPENDICULAR TO EXTERIOR GRADE BEAM TO THE TOP OUT SIDE REINFORCING BAR OF BEAM.

6. SPACE REINFORCING BARS WITH MINIMUM CLEAR SPACING IN ACCORDANCE WITH ACI 318 OF ONE BAR DIAMETER, BUT NOT LESS THAN 1 INCH. FOR COMPRESSION MEMBERS, SPACE AT A MINIMUM OF 1.5 INCHES OR 1.5 BAR DIAMETERS, WHICHEVER IS GREATER.

7. WHERE REINFORCING BARS ARE PLACED IN MULTIPLE LAYERS, PLACE UPPER BARS DIRECTLY ABOVE LOWER BARS.

8. MAINTAIN CONCRETE COVER AROUND REINFORCEMENT IN ACCORDANCE WITH ACI 318 AND AS FOLLOWS:
    A. FOOTING AND CONCRETE CAST AGAINST EARTH - 3 INCHES
    B. EXPOSED TO EARTH OR WEATHER
        #6 BARS AND BIGGER - 2 INCHES
        #5 BARS AND SMALLER - 1.5 INCHES
    C. BEAMS AND COLUMNS - 1.5 INCHES
    D. SLABS AND WALLS - 1 INCH

9. REPAIR ANY DAMAGE TO VAPOR RETARDER PER MANUFACTURER SPECIFICATIONS.

10. ADDITIONAL REINFORCING TO BE PROVIDED ON SITE FOR USE AS DIRECTED BY STRUCTURAL ENGINEER.
    #4 BARS - 100 FT.
    #5 BARS - 100 FT.
    #6 BARS - 100 FT.

## STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE TO AISC SPECIFICATIONS.

2. MATERIALS USED SHALL BE AS FOLLOWS=
    A. STRUCTURAL W-SHAPES - ASTM A992 GRADE 50
    B. STRUCTURAL M-SHAPES AND S-SHAPES - ASTM A36
    C. STRUCTURAL T-SHAPES - CUT FROM W-SHAPES
    D. CHANNELS AND ANGLES - ASTM A36
    E. ROUND HOLLOW STRUCTURAL SECTIONS - ASTM A500 GRADE B
    F. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS - ASTM A500 GRADE B
    G. STRUCTURAL PLATES - ASTM A36
    H. STRUCTURAL BARS - ASTM A36
    I. HIGH STRENGTH BOLTS - ASTM A325
    J. ELECTRODES - SERIES E70

3. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY SPECIFICATIONS.

4. CONNECTIONS NOT DETAILED AND OR SCHEDULED ON STRUCTURAL DRAWINGS SHALL BE DETAILED BY FABRICATOR AND MARKED FOR ENGINEERS APPROVAL. CONNECTIONS TO BE DESIGNED TO AISC SPECIFICATIONS AND SHALL BE CAPABLE OF SUPPORTING 55% OF THE MAXIMUM UNIFORM LOAD CAPACITY FOR THE SPAN SPECIFIED, SHOWN IN THE TABLES OF UNIFORM CONSTANTS OF THE AISC MANUAL OF STEEL CONSTRUCTION.

5. REFER TO ARCHITECTURAL PLANS FOR ANY MISCELLANEOUS STEEL. MISCELLANEOUS STEEL AND CONNECTIONS SHALL BE DESIGNED BY STEEL FABRICATOR.

6. HOT DIP GALVANIZE, IN ACCORDANCE WITH ASTM A123 AND ASTM A153, STRUCTURAL STEEL AND FASTENERS PERMANENTLY EXPOSED TO THE WEATHER.

7. STEEL SUPPORTING OR CONNECTED TO HVAC AND OTHER EQUIPMENT AS SHOWN ON THE DRAWINGS IS SHOWN FOR BIDDING PURPOSES ONLY CONTRACTOR SHALL COORDINATE EXACT LOCATION AND SIZE BEFORE COMMENCING WORK.

8. STRUCTURAL STEEL SHALL BE PAINTED WITH ONE COAT OF RUST INHIBITIVE PAINT.

9. STRUCTURAL DRAWINGS SHALL NOT BE REPRODUCED IN WHOLE OR IN PART FOR SHOP DRAWING SUBMITTALS.

10. PROVIDE 1 TON OF RED IRON ALLOWANCE TO BE USED AS DIRECTED BY STRUCTURAL ENGINEER. INCLUDE LABOR COSTS IN THE ALLOWANCE. ANY UNUSED ALLOWANCE SHALL BE CREDITED BACK TO OWNER AT A COST OF $3500 PER TON.

11. ALL WELDED CONNECTIONS SHALL BE MADE WITH A 1/4" FILLET WELD U.N.O.

12. PROVIDE 1/2" GAP AT ANY PENETRATIONS THROUGH CMU WALL AND INFILL WITH ELASTOMERIC MATERIAL.

13. STEEL FABRICATOR SHALL BE CERTIFIED BY ONE OF THE FOLLOWING: AISC/ IBC/ IAS-ICC

## WOOD FRAMING NOTES

1. ALL FRAMING LUMBER SHALL BE #2 SOUTHERN PINE OR BETTER.

2. PROVIDE SOLID BLOCKING BETWEEN ROOF RAFTERS, CEILING JOISTS AND FLOOR JOISTS AT BEARING LOCATIONS AND AT MID SPAN OF SPANS GREATER THAN 8'-0" OR AS NOTED. SIZE SHALL MATCH FRAMING MEMBER.

3. LAP FRAMING MEMBERS WHICH BEAR ON 2x4 STUDS OR PLATES TO PROVIDE FULL BEARING FOR EACH MEMBER.

4. ALL EXTERIOR STUD WALLS SHALL BE 2x6 AT 16" O.C. AND INTERIOR LOAD BEARING STUD WALLS TO BE 2x4 AT 16" O.C. PROVIDE WIND BRACING AS SHOWN ON PLANS. REFER TO ARCHITECTURAL PLANS FOR NON-LOAD BEARING STUD WALLS.

5. ALL STUD WALLS TO BE CONNECTED TO FOUNDATION WITH 5/8" DIAMETER x 0'-6" "J" BOLTS SPACED AT 3'-2" O.C. MAXIMUM. PROVIDE TWO AT EACH CORNER.

6. ALL EXTERIOR STUD WALLS TO HAVE HORIZONTAL BLOCKING AT 4'-0" O.C. VERTICALLY OF SIZE EQUAL TO STUDS AT PANEL JOINTS.

7. ALL HEADERS TO (2) 2x8 MINIMUM UNLESS NOTED OTHERWISE OR ON SCHEDULE OR PLANS.

8. PROVIDE 4'x8'x5/8" STRUCTURAL I PLYWOOD SHEET AT EACH CORNER OF BUILDING, U.N.O. ON PLANS.

9. SILL PLATES IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED WOOD.

10. MINIMUM NAILING OF WOOD SHALL BE PER TABLE 2304.9.1 OF IBC 2006 UNLESS NOTED OTHERWISE ON DRAWINGS.

11. EACH ANCHOR BOLT SHALL HAVE A WASHER WITH A MINIMUM 1-3/8 INCH DIAMETER AND MINIMUM 1/8 INCH THICKNESS.

## WOOD SHEATHING

1. SHEATHING FOR ROOF TO BE TYPE CDX EXT., STRUCTURAL I-APA RATED, 5/8" THICK, (32/16).

2. PLACE ROOF SHEATHING WITH END JOINTS STAGGERED. SECURE SHEETS OVER FIRM BEARING WITH 10D COMMON NAILS AT 6" O.C. AT PANEL EDGES, AT 6" O.C. AT INTERMEDIATE SUPPORTS. ALL SHEATHING TO BE PLACED PERPENDICULAR TO FRAMING MEMBERS.

3. SHEATHING FOR EXTERIOR WALLS SHALL BE STRUCTURAL I-APA RATED, 1/2" THICK, (32/16).

4. PLACE WALL SHEATHING WITH END JOINTS STAGGERED. SECURE SHEETS OVER FIRM BEARING WITH 10D COMMON NAILS AT 6" O.C. AT PANEL EDGES, AT 6" O.C. AT INTERMEDIATE SUPPORTS. ALL SHEATHING TO BE PLACED PERPENDICULAR TO FRAMING MEMBERS.

## WOOD TRUSSES

1. DESIGN ACCORDING TO LOADS SHOWN ON DESIGN CRITERIA.

2. TRUSSES SHALL BE DESIGNED UNDER THE DIRECT SUPERVISION OF A TEXAS LICENSED PROFESSIONAL ENGINEER.

3. SHOP DRAWINGS SHALL INDICATE SIZES AND SPACING OF TRUSSES AND ASSOCIATED COMPONENTS, WEB AND CHORD SIZES, PLATE SIZES, FASTENER DESCRIPTIONS AND SPACINGS, LOADS AND TRUSS CAMBERS, FRAMED OPENINGS, AND END REACTIONS.

4. SHOP DRAWINGS SHALL INCLUDE DESIGN CALCULATIONS SIGNED AND SEALED BY A TEXAS LICENSED PROFESSIONAL ENGINEER.

5. FABRICATE BOTTOM AND TOP CHORD EXTENSIONS AS REQUIRED.

6. SEE MEP DRAWINGS TO COORDINATE ANY OPENINGS REQUIRED IN WEB OF TRUSSES.

7. DO NOT FIELD CUT OR ALTER TRUSS MEMBERS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

## MASONRY

1. MATERIALS:
    A. CONCRETE BLOCK: MEDIUM WEIGHT ASTM C90 (HOLLOW) ASTM C145 (SOLID) MINIMUM COMPRESSIVE STRENGTH: 1900 PSI
    B. MORTAR: ASTM C270 TYPE S, MINIMUM COMPRESSIVE STRENGTH: 1800 PSI
    C. GROUT: MINIMUM COMPRESSIVE STRENGTH: 3000 PSI
    D. JOINT REINFORCING: MILL GALVANIZED FINISH, 9 GAGE MINIMUM SIDE WIRES AND CROSS WIRES (DUR-O-WALL).
    E. BAR REINFORCING: ASTM A615, GRADE 60 (UNLESS NOTED OTHERWISE).
    F. TYPICAL CMU WALL REINFORCING SHALL BE #5 (V) AT 48" O.C. AND #5 (H) AT 8'-0" O.C. U.N.O. ON DRAWINGS.

2. REINFORCED MASONRY, WHERE VERTICAL BARS ARE TO BE GROUTED INTO CORES, THE FOLLOWING REQUIREMENTS APPLY:
    A. PROVIDE DOWELS FROM WALL, SAME SIZE AND SPACING AS WALL BARS. LAP 48 BAR DIAMETERS MINIMUM WITH WALL BAR.
    B. PROVIDE A CONTINUOUS VERTICAL CAVITY, AT LEAST 2" x 3" IN SIZE, FREE OF MORTAR DROPPINGS.
    C. PROVIDE REBAR ALIGNMENT DEVICES AT A MAXIMUM SPACING OF 96 BAR DIAMETERS (MINIMUM OF 2 PER BAR).
    D. AT SPLICES IN VERTICAL BARS, PROVIDE MECHANICAL COUPLERS OR 48 BAR DIAMETER LAP.
    E. ALL REINFORCEMENT MUST BE INSTALLED AND SECURELY ANCHORED IN PLACE PRIOR TO PLACEMENT OF GROUT.
    F. MAXIMUM HEIGHT OF GROUT LIFT = 4'-0'. UNLESS HIGH LIFT GROUTING PROCEDURES ARE EMPLOYED IN ACCORDANCE WITH ASI 530-99

3. MISCELLANEOUS:
    A. FILL CORE SOLID AROUND ANCHOR BOLTS.
    B. PROVIDE SOLIDLY FILLED HOLLOW BLOCKS AT ALL EMBED ANCHOR LOCATIONS.
    C. SET WELD PLATES IN BOND BEAMS AFTER THE GROUT IS PLACED, BUT WHILE IT IS STILL PLASTIC.
    D. HOLLOW MASONRY UNITS TO BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS SHALL ALSO BE BEDDED IN ALL COURSES OF PIERS, COLUMNS, AND PILASTERS, AND IN THE STARTING COURSE ON FOOTING, AND WHEN ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH CONCRETE OR GROUT. SOLID UNITS TO BE LAID WITH FULL HEAD AND BED JOINTS.
    E. PROVIDE JOINT REINFORCING AT 16 INCHES, EXCEPT AS NOTED.
    F. LAP JOINT REINFORCING 6 INCHES FOR STANDARD, 15 INCHES FOR HEAVY WEIGHT.
    G. VERTICAL CONTROL JOINTS SHALL BE PROVIDED FULL HEIGHT OF MASONRY WALLS AS LOCATED ON THE DRAWINGS. THE JOINT SHALL BE PROVIDED AS A CONTINUOUS HEAD JOINT WITH MORTAR RAKED BACK 3/4" AT BOTH FACES AND 50% OF THE HORIZONTAL JOINT REINFORCING CUT AT THE JOINT. AFTER THE MORTAR IS SET, THE JOINT SHALL BE CAULKED.
    H. FILL ALL VOIDS AND CELLS WITHIN 12" EITHER SIDE OF CENTERLINE OF BEAM AND/OR COLUMN BEARING LOCATIONS WITH A #4 REINFORCING BAR AND GROUT U.N.O.
    I. ALL CMU WALLS MUST HAVE SPECIAL INSPECTION PER IBC CODE 2006 TABLE 1704.5.1 AND SECTION 1704.5.3 "MASONRY CONSTRUCTION" ON CHAPTER 17-"STRUCTURAL TEST & SPECIAL INSPECTION". THE CONTRACTOR MUST PROVIDE REPORTS OF THESE "SPECIAL INSPECTIONS".
    J. BARS SCHEDULED "CONTINUOUS" SHALL BE SPLICED AS FOLLOWS:

| REINFORCING BAR SIZE | MIN. LAP SPLICE LENGTH |
|---|---|
| #5 | 30" |
| #6 | 36" |
| #7 | 42" |
| #8 | 48" |
| #9 | 54" |
| #10 | MECHANICAL CONNECTOR |
| #11 | |

4. STABILITY AND BRACING:
    ALL MASONRY WALLS SHOWN ON THE CONTRACT DRAWINGS HAVE BEEN DESIGNED TO RESIST THE REQUIRED CODE VERTICAL AND LATERAL FORCES APPLIED TO THEM IN THEIR FINAL CONSTRUCTED POSITION ONLY ASSUMING FULL BRACING AT TOP, BOTTOM, AND/ OR SIDES AS INDICATED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT CONSTRUCTION RESIST ANY ERECTION VERTICAL OR LATERAL LOADS THAT COULD BE IMPOSED ON THE WALLS PRIOR TO CONSTRUCTION COMPLETION.

5. GENERAL CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH STRUCTURAL ENGINEER AND MASONRY CONTRACTOR BEFORE MASONRY WORK COMMENCES.

## CONTRACTOR NOTE

THE STRUCTURAL SYSTEM FOR THIS PROJECT SHALL NOT BE CONSTRUCTED BY USING THE STRUCTURAL DRAWINGS ALONE. THESE DRAWINGS WERE DEVELOPED FROM DATA DERIVED PRIMARILY FROM THE ARCHITECTURAL DRAWINGS AND SECONDARILY FROM MEP, CIVIL AND OTHER DISCIPLINES' DOCUMENTS. IT IS INTENDED THAT CONSTRUCTION PROCEED BY UTILIZING ALL OF THE INFORMATION CONTAINED IN THE ENTIRE SET OF CONSTRUCTION DOCUMENTS TAKEN AS A WHOLE; FAILURE TO DO SO WILL RESULT IN ERRORS WHICH SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.


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STATE OF TEXAS — MIGUEL CHANIN — 93127 — LICENSED PROFESSIONAL ENGINEER — 2-25-14

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL EMERGENCY SERVICE FACILITY PRECINCT NO. 4
PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY


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SHEET: S1.0

# GENERAL NOTES

## STEEL JOISTS

1. ALL STEEL JOISTS AND JOIST GIRDERS SHALL BE DETAILED, FABRICATED AND ERECTED PER AISC AND SJI SPECIFICATIONS FOR OPEN-WEB STEEL JOISTS.
2. STEEL JOISTS SHALL BE WELDED TO SUPPORTING MEMBERS UNLESS NOTED OTHERWISE.
3. JOIST BEARING SHALL BE A MINIMUM OF 2 1/2 INCHES WITH A MINIMUM 2 INCH LONG FILLET WELD EACH SIDE OF BEARING.
4. JOISTS AT COLUMN LOCATIONS OR CLOSEST JOIST TO COLUMN SHALL BE BOLTED.
5. PROVIDE BRIDGING IN ACCORDANCE WITH SJI SPECIFICATIONS. BRIDGING SHALL BE CONTINUOUS THROUGH STRUCTURAL STEEL MEMBERS, AND SHALL BE ANCHORED TO SPANDREL MEMBERS OR WALLS. PROVIDE ADDITIONAL BRIDGING WHERE REQUIRED FOR UPLIFT.
6. BOTTOM CHORD EXTENSIONS TO BE PROVIDED AS REQUIRED BY ARCHITECTURAL PLANS.
7. JOISTS SUPPORTING MECHANICAL UNITS TO BE DESIGNED FOR UNIT WEIGHT IN ADDITION TO GRAVITY LOADS SHOWN IN DESIGN CRITERIA.
8. REFER TO MECHANICAL ENGINEERING PLANS FOR EXACT UNIT WEIGHT AND LOCATIONS.
9. MECHANICAL EQUIPMENT SHALL BE SUPPORTED BY TOP CHORD OF JOIST ONLY.
10. PROVIDE SUPPORT ANGLES AROUND ANY OPENINGS IN ROOF DECK.
11. JOISTS AND ACCESSORIES SHALL BE PAINTED WITH ONE COAT OF RUST INHIBITIVE PAINT.
12. JOISTS TO BE DESIGNED PER LOADS SHOWN IN DESIGN CRITERIA.
13. DESIGN JOISTS FOR A 500 LB CONCENTRATED LOAD AT MIDSPAN TO ACT CONCURRENTLY WITH OTHER LOADS IN DESIGN CRITERIA.
14. JOIST MANUFACTURER SHALL DESIGN BOTTOM CHORDS OF ALL OPEN WEB JOISTS AND JOIST GIRDERS TO SUPPORT A 50 lb LOAD LOCATED ANYWHERE ALONG THE LENGTH OF THE CHORD.
15. HANGERS FOR MECHANICAL EQUIPMENT WITH REACTIONS IN EXCESS OF 50 lbs MUST BE LOCATED AT THE PANEL POINTS OF THE JOISTS. PROVIDE JOIST REINFORCING IN ACCORDANCE WITH THE TYPICAL DETAILS WHERE HANGERS ARE REQUIRED TO BE LOCATED MORE THAN 4 INCHES FROM THE JOIST PANEL POINTS.
16. PROVIDE FLAT BEARING FOR ALL JOISTS AND JOIST GIRDERS. BEAR JOISTS AND JOIST GIRDERS ON SUPPORTS IN ACCORDANCE WITH SJI SPECIFICATIONS.
17. PROVIDE 1/2" GAP AT ANY PENETRATIONS THROUGH CMU WALL AND INFILL WITH ELASTOMERIC MATERIAL.
18. STEEL JOISTS TO BE DESIGNED BY TEXAS REGISTERED PROFESSIONAL ENGINEER.
19. STEEL JOIST SHOP DRAWINGS SHALL BE SEALED BY A TEXAS REGISTERED PROFESSIONAL ENGINEER.

## METAL ROOF DECK

1. SHEET STEEL: ASTM A653 GRADE 33 STRUCTURAL QUALITY WITH G90 GALVANIZED COATING CONFORMING TO ASTM A525
2. DECK PROFILE - B
   PROFILE DEPTH - 1.5 IN.
   GAGE - 22
3. METAL DECK ATTACHMENT SHALL BE:
   AT SUPPORTS: #12 TEK SCREWS AT A 36/4 PATTERN
   AT SIDELAPS: #10 TEK SCREWS, 4 PER SPAN
4. WELDING OF METAL DECKING SHALL NOT BE ALLOWED
5. ALL METAL DECK PANELS SHALL SPAN ACROSS A MINIMUM OF FOUR JOISTS OR BEAMS
6. DECK ENDS SHALL BE LAPPED OVER SUPPORTS

## STRUCTURAL TESTS AND SPECIAL INSPECTION

1. THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THIS SECTION.
2. THE FOLLOWING TERMS AND PHRASES SHALL HAVE THE MEANINGS SHOWN BELOW AS IT PERTAINS TO THIS SECTION,
   A. APPROVED AGENCY- AN ESTABLISHED AND RECOGNIZED AGENCY REGULARLY ENGAGED IN CONDUCTING AND FURNISHING SPECIAL INSPECTION SERVICES.
   B. APPROVED FABRICATOR - AN ESTABLISHED AND QUALIFIED FIRM APPROVED BY BUILDING OFFICIAL. SPECIAL INSPECTIONS ARE NOT REQUIRED WHEN WORK IS PERFORMED ON THE PREMISES OF AN APPROVED FABRICATOR.
   C. SPECIAL INSPECTION, CONTINUOUS- THE FULL TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION.
   D. SPECIAL INSPECTION, PERIODIC - THE PART TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION.
3. SPECIAL INSPECTORS SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED THEY SHALL BE BROUGHT TO THE ATTENTION OF THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
4. THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION.

**TABLE 1704.3**
**REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION**

| VERIFICATION AND INSPECTION | CONTINUOUS | PERIODIC | REFERENCED STANDARD[a] | IBC REFERENCE |
|---|---|---|---|---|
| 1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS: | | | | |
| a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. | —— | X | APPLICABLE ASTM MATERIAL SPECIFICATIONS; AISC 360, SECTION A3.3 | —— |
| b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. | —— | X | —— | —— |
| 2. INSPECTION OF HIGH-STRENGTH BOLTING: | | | | |
| a. BEARING-TYPE CONNECTIONS. | —— | X | AISC 360, SECTION M2.5 | 1704.3.3 |
| b. SLIP-CRITICAL CONNECTIONS. | X | X | | |
| 3. MATERIAL VERIFICATION OF STRUCTURAL STEEL: | | | | |
| a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS. | —— | —— | ASTM A 6 OR ASTM A 568 | 1708.4 |
| b. MANUFACTURERS' CERTIFIED MILL TEST REPORTS. | —— | —— | ASTM A 6 OR ASTM A568 | |
| 4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS: | | | | |
| a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS. | —— | —— | AISC 360, SECTION A3.5 | —— |
| b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED. | —— | —— | —— | —— |
| 5. INSPECTION OF WELDING: | —— | —— | | |
| a. STRUCTURAL STEEL: | | | | |
| 1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS. | X | —— | AWS D1.1 | 1704.3.1 |
| 2) MULTIPASS FILLET WELDS. | X | —— | | |
| 3) SINGLE-PASS FILLET WELDS > 5/16" | X | —— | | |
| 4) SINGLE-PASS FILLET WELDS ≤ 5/16" | —— | X | | |
| 5) FLOOR AND ROOF DECK WELDS. | —— | X | AWS D1.3 | —— |
| b. REINFORCING STEEL: | —— | —— | AWS D1.4<br>ACI 318: 3.5.2 | —— |
| 1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706. | —— | X | | |
| 2) REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL REINFORCED CONCRETE SHEAR WALLS AND SHEAR REINFORCEMENT. | X | —— | | |
| 3) SHEAR REINFORCEMENT. | X | —— | | |
| 4) OTHER REINFORCING STEEL. | —— | X | | |
| 6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS:<br>a. DETAILS SUCH AS BRACING AND STIFFENING.<br>b. MEMBER LOCATIONS.<br>c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION. | ——<br>——<br>—— | X<br>——<br>—— | —— | 1704.3.2 |

**TABLE 1704.4**
**REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION**

| VERIFICATION AND INSPECTION | CONTINUOUS | PERIODIC | REFERENCED STANDARD[b] | IBC REFERENCE |
|---|---|---|---|---|
| 1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT. | —— | X | ACI 318: 3.5, 7.1-7.7 | 1913.4 |
| 2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1704.3, ITEM 5b. | —— | —— | AWS D1.4<br>ACI 318: 3.5.2 | —— |
| 3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED. | X | —— | —— | 1911.5 |
| 4. VERIFYING USE OF REQUIRED DESIGN MIX. | —— | X | ACI 318: Ch. 4, 5.2-5.4 | 1904.2.2, 1913.2, 1913.3 |
| 5. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. | X | —— | ASTM C 172<br>ASTM C 31<br>ACI 318: 5.6, 5.8 | 1913.10 |
| 6. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. | X | —— | ACI 318: 5.9, 5.10 | 1913.6, 1913.7, 1913.8 |
| 7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. | —— | X | ACI 318: 5.11-5.13 | 1913.9 |
| 8. INSPECTION OF PRESTRESSED CONCRETE:<br>a. APPLICATION OF PRESTRESSING FORCES.<br>b. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM. | X<br>X | —— | ACI 318: 18.20<br>ACI 318: 18.18.4 | —— |
| 9. ERECTION OF PRECAST CONCRETE MEMBERS. | —— | X | ACI 318: Ch.16 | —— |
| 10. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS. | —— | X | ACI 318: 6.2 | —— |
| 11. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. | —— | X | ACI 318: 6.1.1 | —— |

**TABLE 1704.5.1**
**LEVEL 1 SPECIAL INSPECTION**

| INSPECTION TASK | FREQUENCY OF INSPECTION | | REFERENCE FOR CRITERIA | | |
|---|---|---|---|---|---|
| | CONTINUOUS DURING TASK LISTED | PERIODICALLY DURING TASK LISTED | IBC SECTION | ACI 530/ ASCE 5/ TMS 402[a] | ACI 530.1/ ASCE 6/ TMS 602[a] |
| 1. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE: | | | | | |
| a. PROPORTIONS OF SITE-PREPARED MORTAR. | —— | X | —— | —— | Art. 2.6A |
| b. CONSTRUCTION OF MORTAR JOINTS. | —— | X | —— | —— | Art. 3.3B |
| c. LOCATION OF REINFORCEMENT , CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES. | —— | X | —— | —— | Art. 3.4, 3.6A |
| d. PRESTRESSING TECHNIQUE. | —— | X | —— | —— | Art. 3.6B |
| e. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES. | —— | X | —— | —— | Art. 2.4B, 2.4H |
| 2. THE INSPECTION PROGRAM SHALL VERIFY: | | | | | |
| a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS. | —— | X | —— | —— | Art. 3.3G |
| b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION. | —— | X | —— | Sec. 1.2.2(e), 2.1.4, 3.1.6 | —— |
| c. SPECIFIED SIZE, GRADE AND TYPE OF REINFORCEMENT | —— | X | —— | Sec. 1.13 | Art. 2.4, 3.4 |
| d. WELDING OF REINFORCING BARS. | X | —— | —— | Sec. 2.1.10.7.2, 3.3.3.4(b) | —— |
| e. PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F). | —— | X | Sec. 2104.3, 2104.4 | —— | Art. 1.8C, 1.8D |
| f. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE. | —— | X | —— | —— | Art. 3.6B |
| 3. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE: | | | | | |
| a. GROUT SPACE IS CLEAN. | —— | X | —— | —— | Art. 3.2D |
| b. PLACEMENT OF REINFORCEMENT AND CONNECTORS AND PRESTRESSING TENDONS AND ANCHORAGES. | —— | X | —— | Sec. 1.13 | Art. 3.4 |
| c. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS. | —— | X | —— | —— | Art. 2.6B |
| d. CONSTRUCTION OF MORTAR JOINTS. | —— | X | —— | —— | Art. 3.3B |
| 4. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS. | X | —— | —— | —— | Art. 3.5 |
| a. GROUTING OF PRESTRESSING BONDED TENDONS. | X | —— | —— | —— | Art. 3.6C |
| 5. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED. | X | —— | Sec. 2105.2.2, 2105.3 | —— | Art. 1.4 |
| 6. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED. | —— | X | —— | —— | Art. 1.5 |

**TABLE 1704.7**
**REQUIRED VERIFICATION AND INSPECTION OF SOILS**

| VERIFICATION AND INSPECTION TASK | CONTINUOUS DURING TASK LISTED | PERIODICALLY DURING TASK LISTED |
|---|---|---|
| 1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. | —— | X |
| 2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. | —— | X |
| 3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS. | —— | X |
| 4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL. | X | —— |
| 5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY. | —— | X |


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STATE OF TEXAS
MIGUEL CHANIN
93127
LICENSED PROFESSIONAL ENGINEER
2-25-14

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL EMERGENCY SERVICE FACILITY PRECINCT NO. 4
PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY


Mata & Garcia
architecture | project management | interior design
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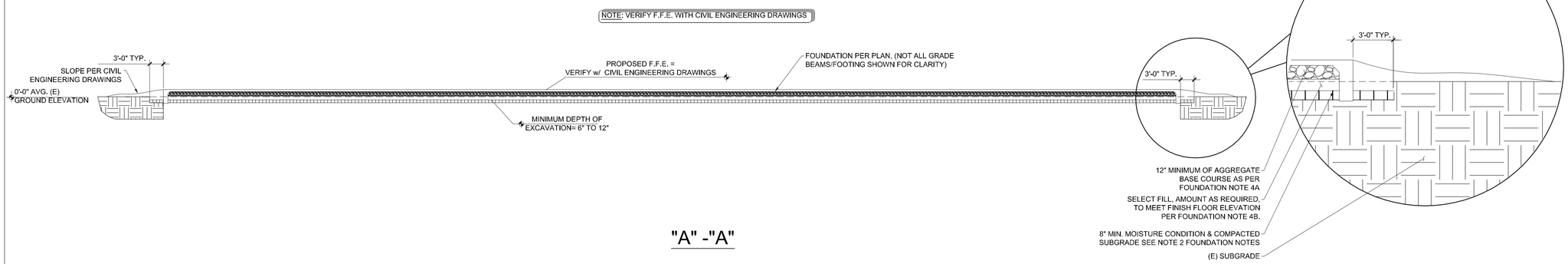


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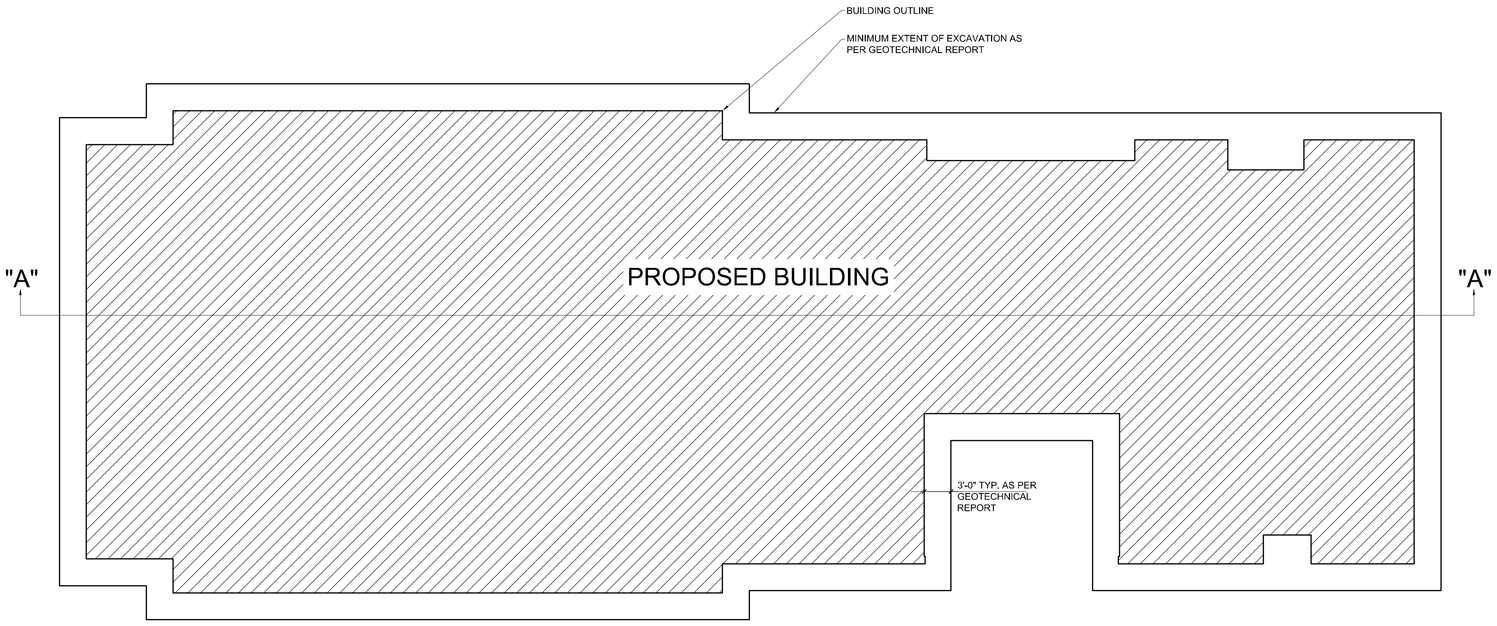
PROFILE
SCALE:N.T.S.




## FOUNDATION NOTES

1. CONSTRUCTION AREAS REMOVE AT LEAST 6 TO 12 INCHES OF TOP SOIL, VEGETATION, DEBRIS, ETC., FROM THE PROPOSED BUILDING AREA TO A DISTANCE OF 3'-0" OUTSIDE THE BUILDING LINE PROPOSED.

2. EXPOSED SUBGRADE SHOULD BE THOROUGHLY PROOF ROLLED WITH A 20 TON PNEUMATIC ROLLER OR A FULLY LOADED DUMP TRUCK IN ORDER TO LOCATE AND DENSIFY ANY WEAK, COMPRESSIBLE ZONES. WEAK OR SOFT AREAS IDENTIFIED DURING PROOF ROLLING SHOULD BE REMOVED AND REPLACED WITH A SUITABLE, COMPACTED SELECT FILL IN ACCORDANCE WITH THE REQUIREMENTS BELOW. PRIOR TO FILL PLACEMENT, THE EXPOSED SUBGRADE SHOULD BE MOISTURE CONDITIONED BY SCARIFYING TO A MINIMUM DEPTH OF 8" AND RECOMPACTING TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED FROM THE ASTM D698 COMPACTION TEST. THE MOISTURE CONTENT SHOULD BE MAINTAINED WITHIN -2 TO +2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT.

3. FILL BACK TO REQUIRED GRADE (A MINIMUM OF 12" OF SELECT FILL IS REQUIRED. REFER TO CIVIL PLANS FOR FINISHED FLOOR ELEVATION TO DETERMINE ADDITIONAL AMOUNT OF SELECT FILL NEEDED) WITH MATERIAL SELECTED AND COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS BELOW.

4. SELECT FILL, WHEN PROPERLY SLAKED AND TESTED BY STANDARD LABORATORY METHODS, SHALL MEET THE FOLLOWING REQUIREMENTS:

   A. AGGREGATE BASE COURSE- TOP TWELVE (12) INCHES OF BUILDING PAD SHALL CONSIST OF SOILS CLASSIFIED AS SC OR GC, BY THE USCS OR CALICHE OR CRUSHED LIMESTONE. THE CLAYEY GRAVEL AND CALICHE MATERIALS SHOULD MEET THE GRADATION REQUIREMENTS OF ITEM 247, TYPE E, GRADE 4 AS SPECIFIED IN THE 2004 TxDOT STANDARD SPECIFICATIONS MANUAL AND HAVE A PLASTICITY INDEX BETWEEN 8 AND 20. CRUSHED LIMESTONE OR CRUSHED CONCRETE MATERIAL SHOULD MEET THE REQUIREMENTS OF 2004 TxDOT ITEM 247, TYPE A , GRADE 1. THE SELECT FILL MATERIALS SHOULD BE FREE OF ORGANIC MATERIAL AND DEBRIS, AND SHOULD NOT CONTAIN STONES LARGER THAN 2 INCHES IN THE MAXIMUM DIMENSION.

   B. THE FOLLOWING SOILS, AS CLASSIFIED ACCORDING TO THE USCS, MAY BE CONSIDERED SATISFACTORY FOR USE AS SELECT FILL MATERIALS AT THIS SITE: CL, SC, AND COMBINATIONS OF THESE SOILS. IN ADDITION TO THE USCS CLASSIFICATION, SELECT FILL MATERIALS SHALL HAVE A MAXIMUM LIQUID LIMIT OF 40 PERCENT, A PLASTICITY INDEX BETWEEN 8 AND 20 PERCENT, AND A MAXIMUM PARTICLE SIZE NOT EXCEEDING 2 INCHES OR ONE-HALF THE LOOSE LIFT THICKNESS, WHICHEVER IS SMALLER.

5. SAMPLES OF PROPOSED SELECT FILL SHALL BE FURNISHED TO THE TESTING LABORATORY 7 DAYS PRIOR TO INSTALLATION TO PERMIT TIME FOR SPECIFICATION COMPLIANCE INSPECTION AND APPROVAL.

6. AGGREGATE BASE STRUCTURAL FILL UNDER ALL FLOORS AND WALKS SHALL BE COMPACTED IN THE FIELD IN LOOSE LIFTS NOT TO EXCEED 8" TO 98% OF THE MAXIMUM DENSITY, AT MOISTURE CONTENTS RANGING BETWEEN -2 TO +2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT.

7. SELECT FILL UNDER ALL FLOORS AND WALKS SHALL BE COMPACTED IN THE FIELD IN LOOSE LIFTS NOT TO EXCEED 8" TO 95% OF THE MAXIMUM DENSITY, AT OR 3% ABOVE OF THE OPTIMUM MOISTURE CONTENT, AS DETERMINED BY THE TEST METHOD ASTM D-698.

8. SITE PREPARATION TESTING SHALL BE AS FOLLOWS:
   A. ATTERBERG LIMITS OF SELECT FILL MATERIAL:
      (1) ONE TEST PER 5,000 CY
   B. COMPACTION TEST:
      TO BE PERFORMED PER LIFT ON TEST PER 3,000 SF MINIMUM
      OF (4) FOUR TEST PER LIFT

9. GEOTECHNICAL REPORT SHALL BE CONSIDERED A PART OF THE CONSTRUCTION DOCUMENTS. CONTRACTOR TO REVIEW AND COMPLY WITH ALL EARTHWORK AND GRADING REQUIREMENT IN GEOTECHNICAL REPORT.

10. FINAL SITE GRADING TO SLOPE AWAY FROM THE STRUCTURE AND SHALL PREVENT WATER FROM PONDING IN THE AREAS ADJACENT TO THE STRUCTURE FOR A MINIMUM DISTANCE OF 10'-0". ANY PONDING CLOSE TO THE STRUCTURE MAY CREATE VOLUMETRIC CHANGES IN THE SOIL AND MAY LEAD TO LESS THAN OPTIMUM PERFORMANCE OF THE BUILDING FOUNDATION.

11. IT IS ALSO IMPORTANT TO MINIMIZE CHANGES IN MOISTURE CONTENT CREATED BY ROOF DRAINAGE, PLUMBING LEAKS, LANDSCAPING / IRRIGATION, AND DOWNSPOUT OUTFALLS. ANY PLUMBING LEAKS SHALL BE REPAIRED AS SOON AS POSSIBLE AND PROPER DRAINAGE PROVIDED AWAY FROM THE BUILDING. LARGE BUSHES AND TREES SHALL NOT BE PLACED IN AREAS DIRECTLY ADJACENT TO THE FOUNDATION AS THEIR ROOT SYSTEM MAY CREATE SUBSTANTIAL MOISTURE DIFFERENTIALS THAT MAY LEAD TO VOLUME CHANGES IN THE SOIL. LARGE BUSHES AND TREES SHOULD BE LOCATED AT A REASONABLE DISTANCE FROM THE FOUNDATION.

EXCAVATION PLAN
SCALE: N.T.S.

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architecture | project management | interior design
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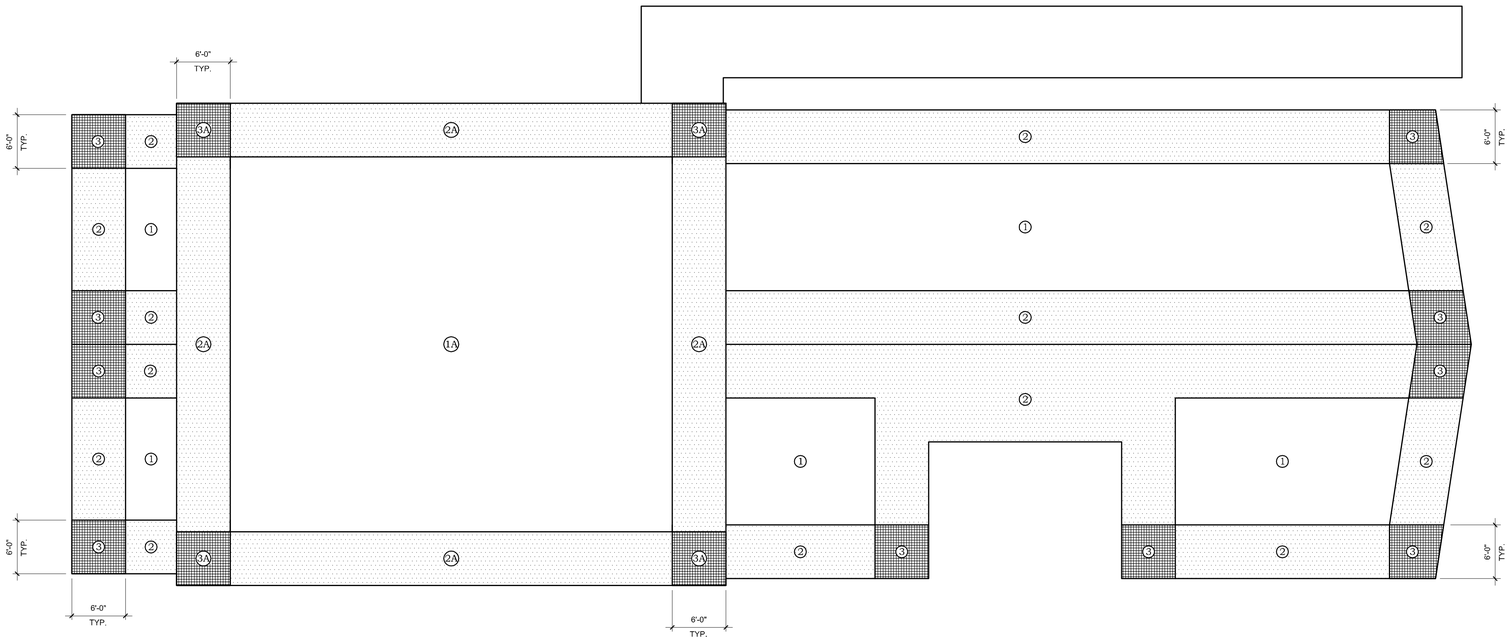
4:

# LINN - SAN MANUEL EMERGENCY SERVICE FACILITY PRECINCT NO. 4

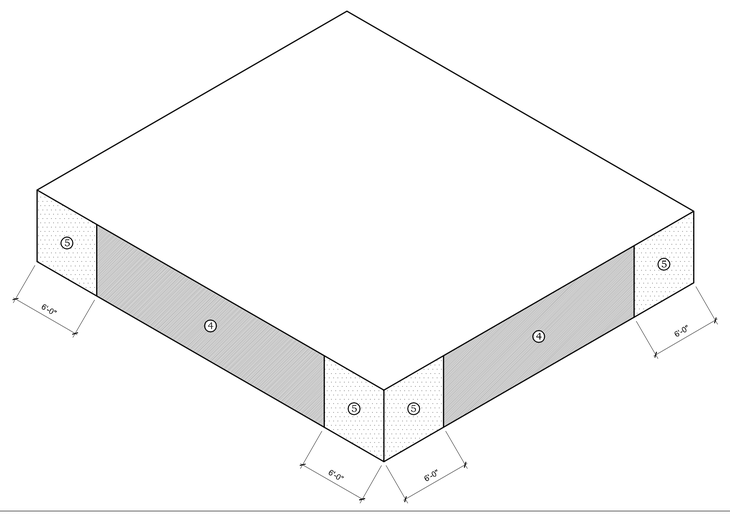
**PROJECT :** LINN - SAN MANUEL, TEXAS
**OWNER :** HIDALGO COUNTY




| EFFECTIVE WIND AREA | ZONE | GROSS | NET |
|---|---|---|---|
| 10 | 1 | 24.1 psf | 22.1 psf |
| 20 | 1 | 23.5 psf | 21.5 psf |
| 50 | 1 | 22.5 psf | 20.5 psf |
| | | | |
| 10 | 2 | 42.0 psf | 40.0 psf |
| 20 | 2 | 38.6 psf | 36.6 psf |
| 50 | 2 | 34.1 psf | 32.1 psf |
| | | | |
| 10 | 3 | 62.1 psf | 60.1 psf |
| 20 | 3 | 58.0 psf | 56.0 psf |
| 50 | 3 | 52.6 psf | 50.6 psf |

| EFFECTIVE WIND AREA | ZONE | GROSS | NET |
|---|---|---|---|
| 10 | 1A | 28.6 psf | 22.6 psf |
| 20 | 1A | 27.9 psf | 21.9 psf |
| 50 | 1A | 26.9 psf | 20.9 psf |
| | | | |
| 10 | 2A | 48.0 psf | 42.0 psf |
| 20 | 2A | 42.9 psf | 36.9 psf |
| 50 | 2A | 36.0 psf | 30.0 psf |
| | | | |
| 10 | 3A | 72.1 psf | 66.1psf |
| 20 | 3A | 59.8 psf | 53.8 psf |
| 50 | 3A | 43.3 psf | 37.3 psf |

## ROOF UPLIFT PLAN
SCALE: N.T.S.




| EFFECTIVE WIND AREA | ZONE | MAX PRESSURE |
|---|---|---|
| 10 | 4 | 28.3 psf |
| 20 | 4 | 27.1 psf |
| 50 | 4 | 25.6 psf |
| | | |
| 10 | 5 | 34.8 psf |
| 20 | 5 | 32.5 psf |
| 50 | 5 | 29.5 psf |

## COMPONENTS AND CLADDING
SCALE: N.T.S.

Mata & Garcia
ARCHITECTS L.L.P
architecture
project management
interior design
Fernando Mata A.I.A., Partner
Hector Rene Garcia R.A., Partner
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SHEET: S1.3

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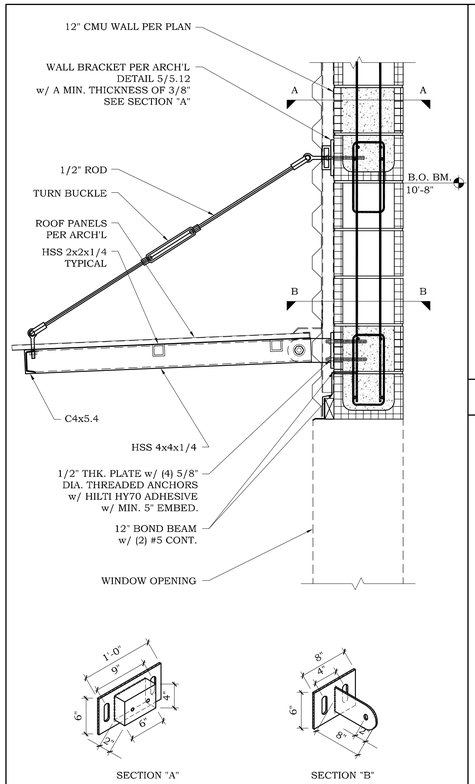
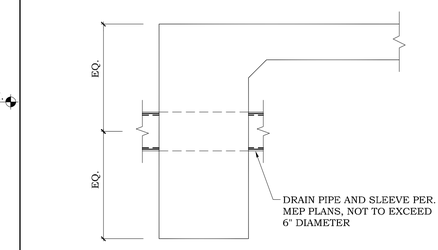
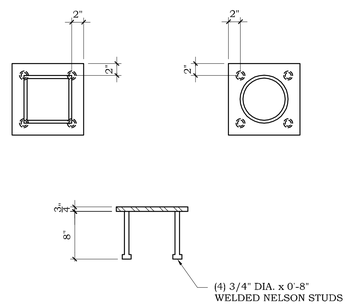



CANOPY TO CMU WALL | 18



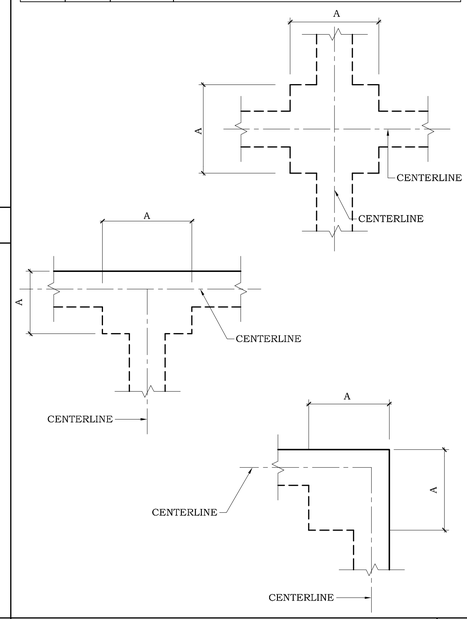

PIPE EXTERIOR FOOTING | 13




NOTE: DIMENSION FROM EDGE OF PLATE TO FACE OF COLUMN

BASE PLATE DETAIL | 9

| FOOTING SCHEDULE AT STEEL COLUMNS | | | |
|---|---|---|---|
| TYPE | A | DEPTH | REBAR REINFORCEMENT |
| S3 | 3'-6" | 3'-0" | #5'S @ 12" O.C. E.W. TOP & BOTTOM |
| S3A | 3'-6" | 2'-0" | #5'S @ 12" O.C. E.W. TOP & BOTTOM |
| S4 | 4'-6" | 3'-0" | #5'S @ 12" O.C. E.W. TOP & BOTTOM |
| S5 | 5'-6" | 2'-0" | #5'S @ 12" O.C. E.W. TOP & BOTTOM |
| | | | |




TYPE "S" FOOTING SCHEDULE | 6

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www.chaninengineering.com
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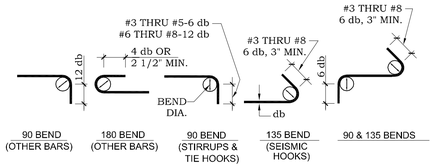
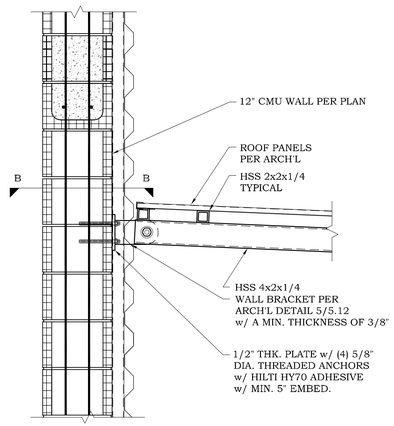
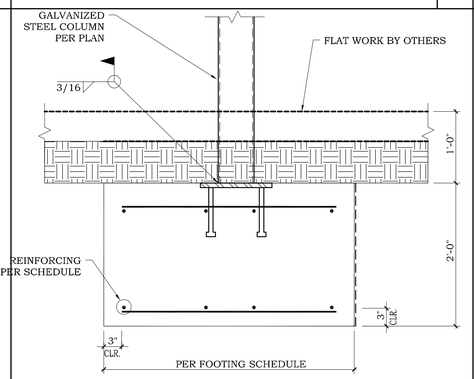



| DIAMETER OF BENDS | |
|---|---|
| STIRRUPS AND TIES | 4 db FOR #3 THRU #5 BARS |
| | 6 db FOR #6 THRU #8 BARS |
| ALL OTHERS | 6 db FOR #3 THRU #8 BARS |
| | 8 db FOR #9 THRU #11 BARS |
| | 10 db FOR #14 THRU #18 BARS |

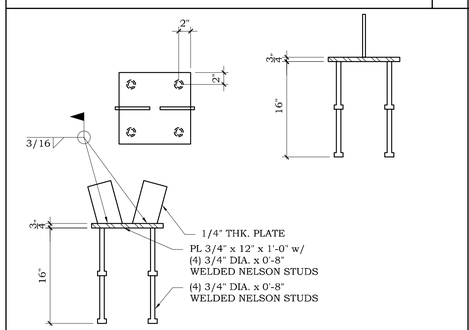
STANDARD HOOKS | 2




CANOPY TO CMU WALL | 20

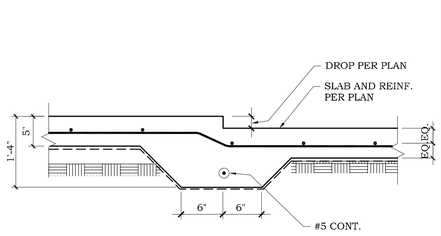



FOOTING AT STEEL COLUMN | 15

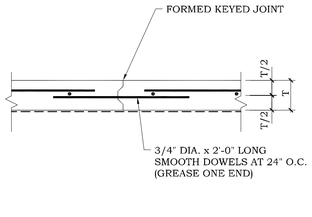



NOTE: DIMENSION FROM EDGE OF PLATE TO FACE OF COLUMN

BASE PLATE DETAIL | 16

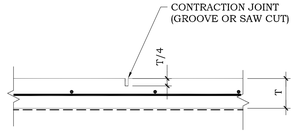



DROP AT SLAB ON GRADE | 14



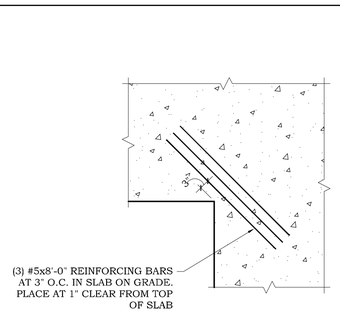

1. CONTRACTOR TO SUBMIT ANY PROPOSED LOCATIONS OF CONSTRUCTION JOINTS TO STRUCTURAL ENGINEER BEFORE COMMENCING WORK.
2. GRADE BEAM REINFORCING SHALL BE CONTINUOUS THRU JOINT

CONSTRUCTION JOINT DETAIL | 10

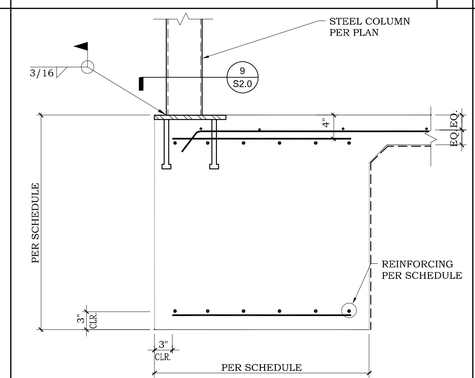



1. JOINT PATTERN SHALL BE NEARLY SQUARE
2. JOINT SPACING SHALL NOT EXCEED 15'-0"

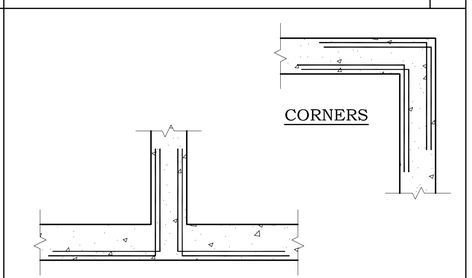
CONTRACTION JOINT DETAIL | 11




TYPICAL SLAB REINFORCING | 12

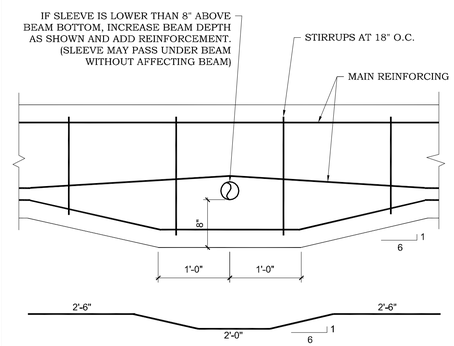



FOOTING AT STEEL COLUMN | 8




NOTE:
PROVIDE (4) #6 x 6'-0" CORNER BARS
(2)-TOP & (2) -BOTTOM AS SHOWN
IN DETAILS ABOVE

TYPICAL CORNER BARS | 4




TYPICAL SLEEVE IN GRADE BEAM | 3

LINN - SAN MANUEL EMERGENCY SERVICE FACILITY PRECINCT NO. 4
PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
1:
2:
3:
4:

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ARCHITECTS LLP
architecture
project management
interior design
Fernando Mata A.I.A., Partner
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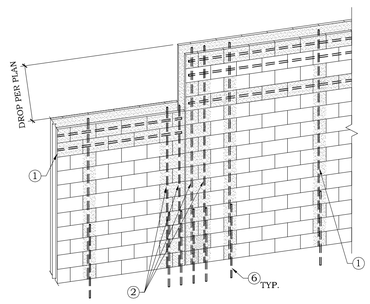
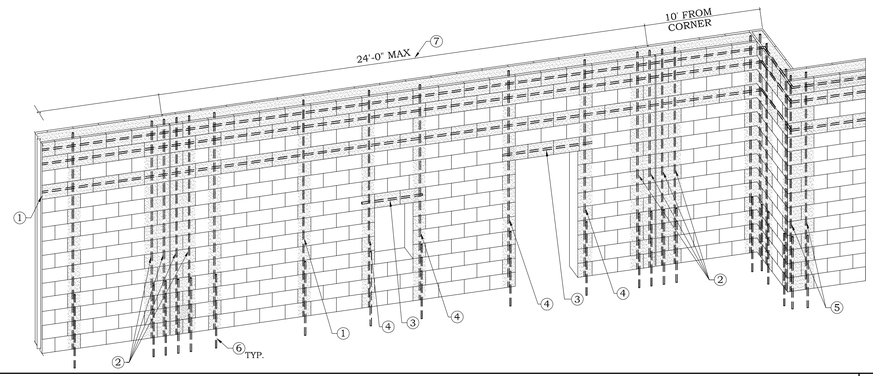
SHEET: S2.0

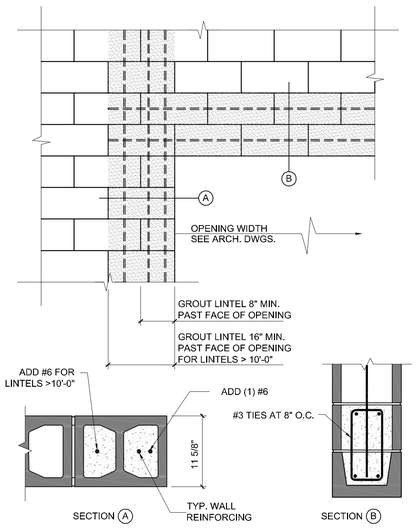
1. TYPICAL WALL REINFORCING AS CALLED OUT IN PLANS AND GENERAL NOTES.
2. VERTICAL REINFORCING AT CONTROL JOINTS, REFER TO DETAIL 8,16 / S2.1
3. LINTELS PER LINTEL SCHEDULE, REFER TO DETAIL 7,19 / S2.1
4. ADDITIONAL VERTICAL REINFORCING AT JAMBS OF ALL OPENINGS
5. WALL CORNER REINFORCING, REFER TO DETAIL 2,3,4 / S2.1 12,14,16 / S2.1
6. DOWELS TO MATCH VERTICAL REINFORCEMENT PER PLAN, TYPICAL
7. CONTROL JOINT SPACING AS NOTED IS MAXIMUM ALLOWED, COORDINATE CONTROL JOINT LOCATIONS w/ARCHITECTURAL PLANS.



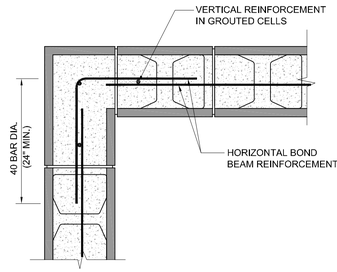

TYPICAL CMU WALL CONSTRUCTION | 5

NOT USED | 1

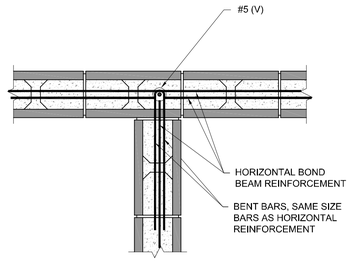



| LINTEL SCHEDULE | | | | | |
|---|---|---|---|---|---|
| CLEAR SPAN | WIDTH | DEPTH | REINFORCING | #3 TIES AT: | REMARKS |
| <3'-4" | 12" | 8" | (2)#5 | | |
| <4'-8" | 12" | 16" | (2)#5 (T) & (B) | 8" | |
| <6'-8" | 12" | 16" | (2)#6 (T) & (B) | 8" | |
| <12'-0" | 12" | 24" | (2)#6 (T) & (B) | 8" | |

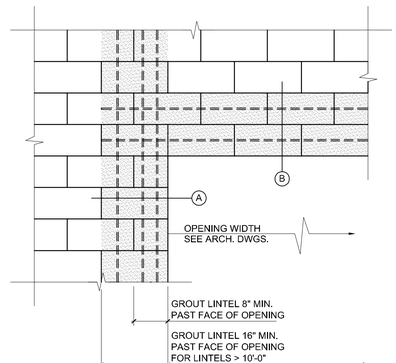
12" CMU LINTEL SCHEDULE | 19




12" TYPICAL BOND BEAM CORNER | 14

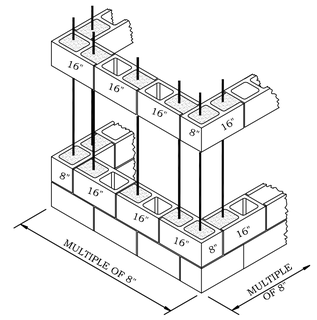



8" TYPICAL BOND BEAM INTERSECTION | 10

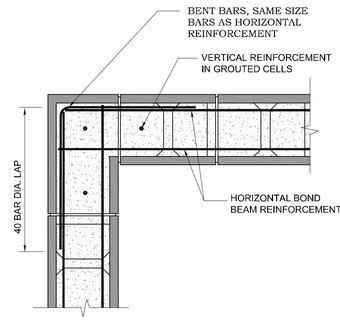



| LINTEL SCHEDULE | | | | | |
|---|---|---|---|---|---|
| CLEAR SPAN | WIDTH | DEPTH | REINFORCING | #3 TIES AT: | REMARKS |
| <3'-4" | 8" | 8" | (1)#5 | | |
| <4'-8" | 8" | 16" | (1)#5 (T) & (B) | 8" | |
| <6'-8" | 8" | 16" | (1)#6 (T) & (B) | 8" | |
| <10'-0" | 8" | 24" | (1)#6 (T) & (B) | 8" | |
| <12'-0" | 8" | 24" | (1)#7 (T) & (B) | 8" | |

8" LINTEL SCHEDULE | 7




8" TYPICAL CMU CORNER DETAIL | 2

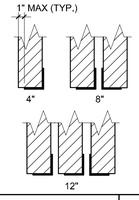



12" TYPICAL BOND BEAM CORNER | 15

| STEEL LINTEL SCHEDULE | | | |
|---|---|---|---|
| SIZE (MIN.-NOTE 4) | CLEAR OPNG. GREATER THAN | CLEAR OPNG. UP TO | REMARKS |
| L4x4x3/8 | ---- | 8'-0" | MIN. OF 8" BEARING AT EACH END |
| L6x4x3/8 | 8'-0" | 11'-0" | MIN. OF 8" BEARING AT EACH END |
| L7x4x3/8 | 11'-0" | 12'-0" | MIN. OF 8" BEARING AT EACH END |
| L8x4x1/2 | 12'-0" | 14'-0" | MIN. OF 8" BEARING AT EACH END |

NOTES:

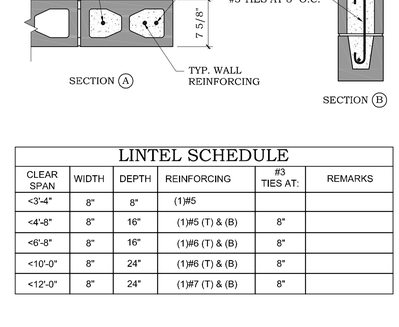
1. PROVIDE ONE MEMBER FOR EACH 4" (NORMAL) WIDTH OF MASONRY
2. INSTALL ALL LOOSE LINTELS WITH LONG LEG VERT.
3. PROVIDE SHORING UNDER LINTELS OVER 8'-0" LONG UNTIL GROUT HAS SET 72 HOURS.
4. ANGLE SIZE IS MIN. COORDINATE REQUIRED HORIZ. LEG DIMENSION w/ ARCH. DRAWING.




TYPICAL LINTEL DETAILS

- FOR SUPPORT OF MASONRY WEIGHT ONLY.
- DEFLECTION AT L/600.
- LINTELS SHALL BE GALVANIZED STEEL.

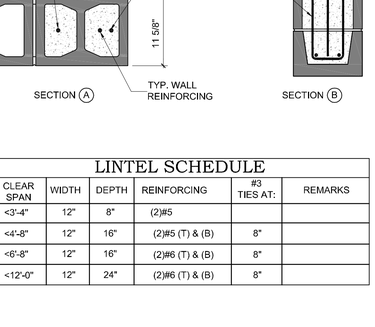
STEEL LINTEL SCHEDULE | 11




8" CMU CONTROL JOINT (C.J.) | 8



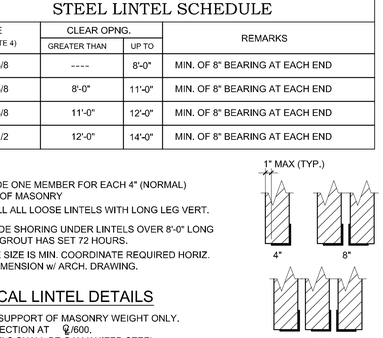

8" TYPICAL BOND BEAM CORNER | 3




12" TYPICAL BOND BEAM INTERSECTION | 20



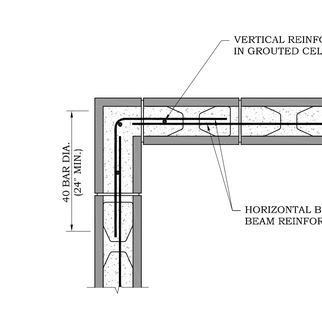

12" CMU CONTROL JOINT (C.J.) | 16




12" TYPICAL CMU CORNER DETAIL | 12




8" CMU CONTROL JOINT (C.J.) | 8




8" TYPICAL BOND BEAM CORNER | 4

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TBPE FIRM REG. NUMBER F-9369

STATE OF TEXAS
MIGUEL CHANIN
93127
LICENSED
PROFESSIONAL ENGINEER
2-25-14

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL EMERGENCY
SERVICE FACILITY PRECINCT NO. 4
PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY


Mata & Garcia
ARCHITECTS L.L.P.
architecture
project management
interior design
Fernando Mata A.I.A., Partner
Hector Rene Garcia R.A., Partner
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SHEET: S2.1


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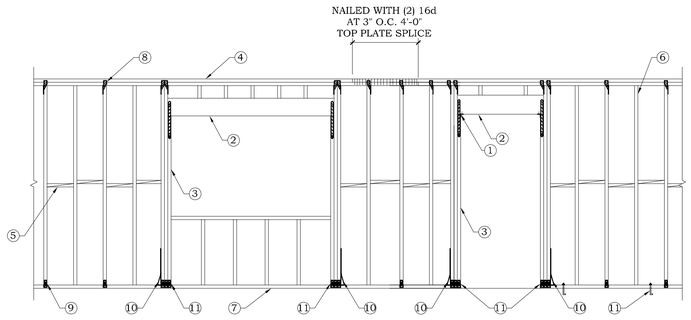
① SIMPSON CS16 STRAP
② HEADER PER SCHEDULE (U.N.O.) ON PLANS
③ 2-STUDS ADJACENT FOR EXT. OPENINGS.
1-STUD ADJACENT FOR INT. OPENINGS
④ (2) 2x TOP PLATE
⑤ 2x BLOCKING AT MID SPAN
⑥ STUDS AT 16" O.C., U.N.O.
⑦ 2x SILL PLATE
⑧ SIMPSON H2.5A AT EVERY OTHERS STUD
⑨ "RSP4" AT EVERY OTHER STUD
⑩ "HTT5" AS SPECIFIED
⑪ (3) "RSP4"
⑫ 5/8" DIA. J BOLT AT 48" O.C. AT EXTEIOR WALLS OR 5/8" DIA. TITEN HD SCREWS AT 48" O.C. AT INTERIOR WALLS.



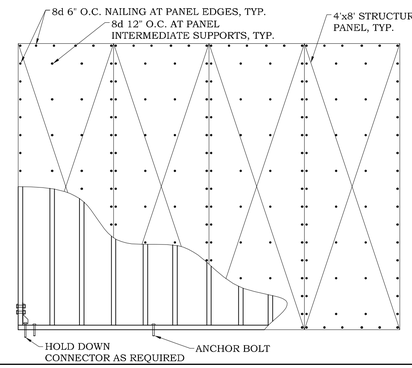

HEADERS SHALL BE SUPPORTED AS FOLLOWS:

1. FOR OPENINGS LESS THAN 6'-0", EACH END SHALL REST ON A SINGLE HEADER STUD.
2. FOR OPENINGS GREATER THAN 6'-0", EACH END SHALL REST ON TWO HEADER STUDS.

| HEADER SCHEDULE 2x4 WALL | | | |
|---|---|---|---|
| BEARING WALLS | | NON-BEARING WALLS | |
| OPNG. WIDTH | HEADER SIZE | OPNG. WIDTH | HEADER SIZE |
| 3'-4" MAX | 2-2x8 | 4'-0" MAX | 2-2x4 |
| 6'-0" MAX | 2-2x10 | 6'-0" MAX | 2-2x6 |
| 7'-6" MAX | 2-2x12 | | |
| 8'-11" MAX | 2-2x14 | | |

| HEADER SCHEDULE 2x6 WALL | |
|---|---|
| BEARING WALLS | |
| OPNG. WIDTH | HEADER SIZE |
| 2'-0" MAX | 3-2x6 |
| 3'-4" MAX | 3-2x8 |
| 6'-0" MAX | 3-2x10 |
| 7'-6" MAX | 3-2x12 |
| 9'-0" MAX | 3-2x14 |

TYPICAL WALL/HEADER SCHEDULE | 9




TYPICAL NAILING PATTERN | 5

NOT USED | 1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TBPE FIRM REG. NUMBER F-9369

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
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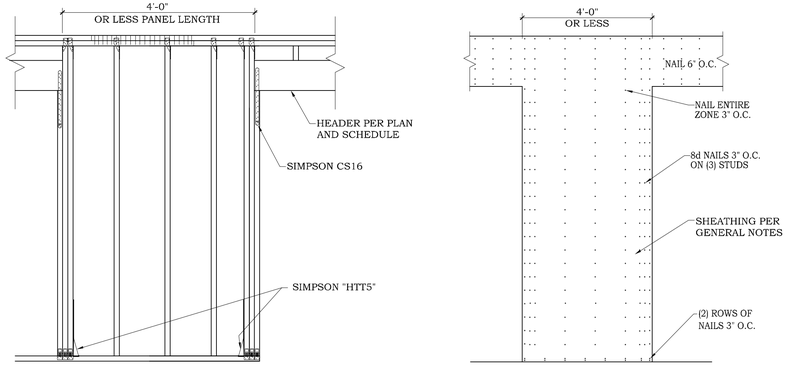
2:
3:
4:

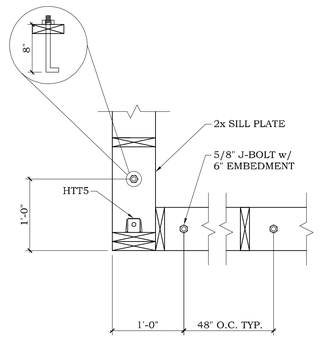
LINN - SAN MANUEL EMERGENCY
SERVICE FACILITY PRECINCT NO. 4
PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

NOT USED | 18

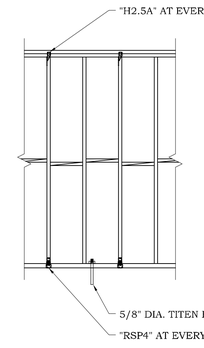
4'-0" OR LESS SHEAR WALLS | 10




TYP. ANCHOR BOLT PLACEMENT | 6




WALL DETAIL AT BEARING WALLS | 2

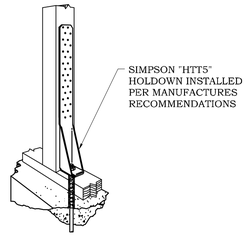



NOT USED | 19

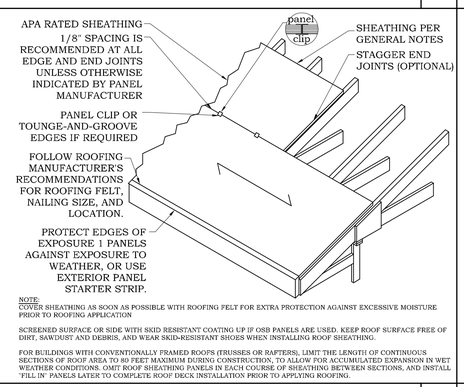
| CONNECTION | FASTENING | LOCATION |
|---|---|---|
| JOIST TO SILL OR GIRDER | 3-8d COMMON (2 1/2" x 0.131") | TOENAIL |
| BRIDGING TO JOIST | 2-8d COMMON (2 1/2" x 0.131") | TOENAIL EACH END |
| TOP PLATE TO STUD | 2-16d COMMON (3 1/2" x 0.162") | END NAIL |
| STUD TO SOLE PLATE | 4-8d COMMON (2 1/2" x 0.131")<br>2-16d COMMON (3 1/2" x 0.162") | TOENAIL<br>END NAIL |
| DOUBLE STUDS | 16d (3 1/2" x 0.135") AT 24" O.C. | FACE NAIL |
| DOUBLE TOP PLATES<br>DOUBLE TOP PLATES | 16d (3 1/2" x 0.135") AT 16" O.C.<br>8-16d COMMON (3 1/2" x 0.162") | TYPICAL FACE NAIL<br>LAP SPLICE |
| BLOCKING BETWEEN JOIST OR RAFTERS TO TOP PLATE | 3-8d COMMON (2 1/2" x 0.131") | TOENAIL |
| TOP PLATES, LAPS AND INTERSECTIONS | 2-16d COMMON (3 1/2" x 0.162") | FACE NAIL |
| CEILING JOIST TO PLATE | 3-8d COMMON (2 1/2" x 0.131") | TOENAIL |
| CEILING JOIST, LAPS OVER PARTITIONS | 3-16d COMMON (3 1/2" x 0.162") MIN. | FACE NAIL |
| CEILING JOIST TO PARALLEL RAFTERS | 3-16d COMMON (3 1/2" x 0.162") MIN. | FACE NAIL |
| RAFTER TO PLATE | 3-8d COMMON (2 1/2" x 0.131") | TOENAIL |
| BUILT-UP CORNER STUDS | 16d COMMON (3 1/2" x 0.162") | 24" O.C. |
| BUILT-UP GIRDER AND BEAMS | 20d COMMON (4" x 0.192") 32" O.C.<br>2-20d COMMON (4" x 0.192") | FACE NAIL AT TOP AND BOTTOM ON OPPOSITE SIDES<br>FACE NAIL AT ENDS AND AT EACH SIDE |
| COLLAR TIE TO RAFTER | 3-10d COMMON (3" x 0.148") | FACE NAIL |
| JACK RAFTER TO HIP | 3-10d COMMON (3" x 0.148")<br>2-16d COMMON (3 1/2" x 0.162") | TOENAIL<br>FACE NAIL |
| ROOF RAFTER TO 2-BY RIDGE BEAM | 4-16d COMMON (3 1/2" x 0.162")<br>4-16d COMMON (3 1/2" x 0.162") | TOENAIL<br>FACE NAIL |
| JOIST TO BAND JOIST | 3-16d COMMON (3 1/2" x 0.162") | FACE NAIL |
| LEDGER STRIP | 3-16d COMMON (3 1/2" x 0.162") | FACE NAIL |

NOT USED | 20

FASTENING SCHEDULE | 12




SIMPSON STRONG-TIE "HTT5" | 7

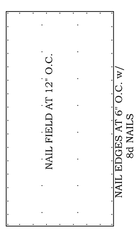



NOTE:
COVER SHEATHING AS SOON AS POSSIBLE WITH ROOFING FELT FOR EXTRA PROTECTION AGAINST EXCESSIVE MOISTURE PRIOR TO ROOFING APPLICATION

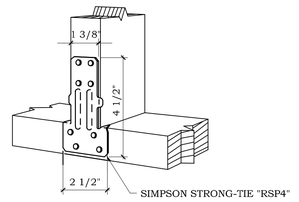
SCREENED SURFACE OR SIDE WITH SKID RESISTANT COATING UP IF OSB PANELS ARE USED. KEEP ROOF SURFACE FREE OF DIRT, SAWDUST AND DEBRIS, AND WEAR SKID-RESISTANT SHOES WHEN INSTALLING ROOF SHEATHING.

FOR BUILDINGS WITH CONVENTIONALLY FRAMED ROOFS (TRUSSES OR RAFTERS), LIMIT THE LENGTH OF CONTINUOUS SECTIONS OF ROOF AREA TO 80 FEET MAXIMUM DURING CONSTRUCTION, TO ALLOW FOR ACCUMULATED EXPANSION IN WET WEATHER CONDITIONS. OMIT ROOF SHEATHING PANELS IN EACH COURSE OF SHEATHING BETWEEN SECTIONS, AND INSTALL "FILL IN" PANELS LATER TO COMPLETE ROOF DECK INSTALLATION PRIOR TO APPLYING ROOFING.

TYPICAL ROOF SHEATHING | 8




OSB NAILING (TYP.) U.N.O. | 4




STUD TO BOTTOM PLATE | 3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SHEET: S2.2


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STATE OF TEXAS
MIGUEL CHANIN
93127
LICENSED
PROFESSIONAL ENGINEER
2-25-14

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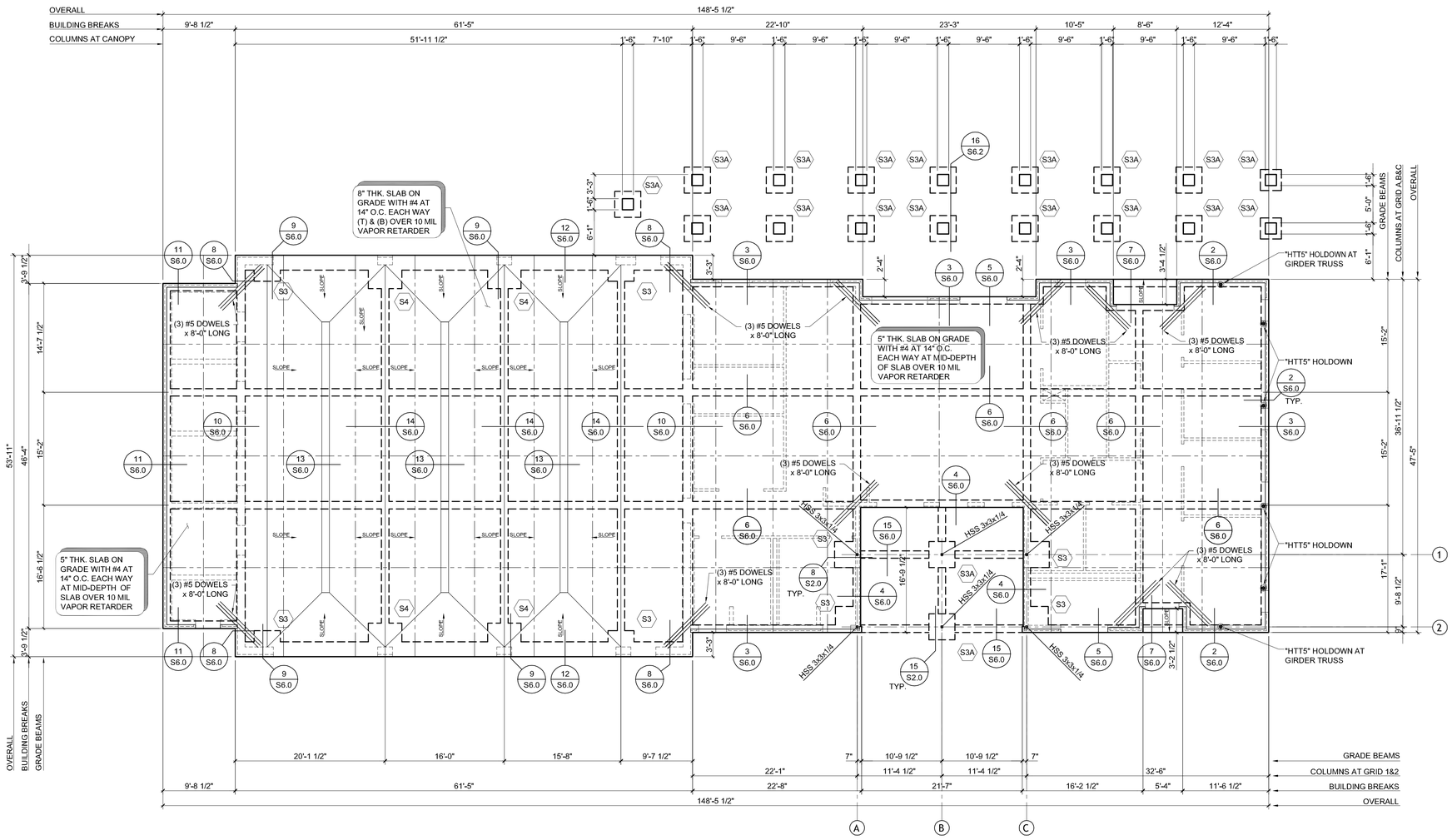
**OWNER :** HIDALGO COUNTY




## FOUNDATION NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS BEFORE COMMENCING WORK.
2. CONTRACTOR TO VERIFY LOCATION OF ANY/ALL DROPS AND DRAINS IN SLAB WITH ARCHITECTURAL DRAWINGS.
3. CONTRACTOR TO VERIFY REQUIRED F.F.E. WITH CIVIL ENGINEERING DRAWINGS.
4. REFER TO FOOTING SCHEDULE FOR FOOTING SIZE AND REINFORCEMENT, SEE DETAIL 6/S2.0

## FOUNDATION PLAN

SCALE: 1/8"=1'-0"

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SHEET: S3.0

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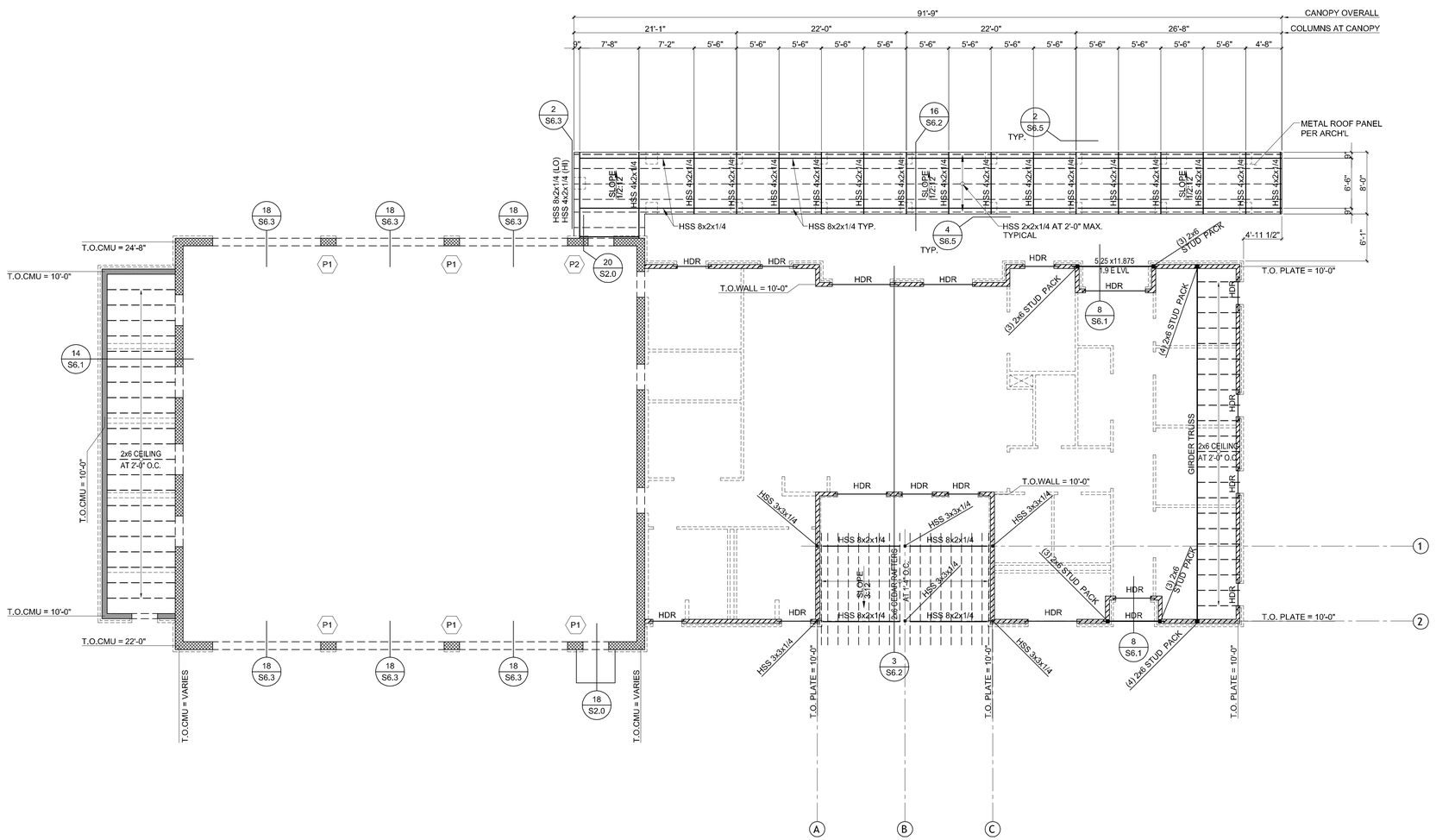


NOTE:
ALL EXPOSED EXTERIOR STEEL SHALL BE HOT DIPPED GALVANIZED

## CMU WALL / STUD WALL LAYOUT NOTES:

1. IF ANY DISCREPANCIES ARE FOUND BETWEEN THESE DRAWINGS AND THE ARCHITECTURAL DRAWINGS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER BEFORE COMMENCING CONSTRUCTION.
2. FOR TYPICAL CMU WALL CONSTRUCTION SEE SHEET S2.2.
3. ▬ INDICATES EXTERIOR 8" CMU WALL WITH #5 (V) AT 48" O.C. AND #5 (H) AT 8'-0" O.C., U.N.O.
4. ▩ INDICATES EXTERIOR 12" CMU WALL WITH #6 (V) AT 48" O.C. AND (2) #5 (H) AT 8'-0" O.C., U.N.O.
5. ═ ═ INDICATES LINTEL, SEE DETAIL 7/S2.1, 19/S2.1.
6. FOR SPECIAL INSPECTION REQUIREMENTS SEE GENERAL NOTES.
7. ALL TOP OF WALLS FROM FINISH FLOOR ELEVATION 0'-0".
8. SEE ARCHITECTURAL PLANS FOR EXACT LOCATION, LENGTH, HEIGHT OF ALL OPENINGS IN CMU WALLS.
9. FOR CONTROL JOINT LOCATIONS, SEE ARCHITECTURAL DRAWINGS.
10. PROVIDE CMU LINTEL OVER ALL MECHANICAL SYSTEM PENETRATIONS IN CMU WALL.
11. 8" CMU WALL IS A NOMINAL DIMENSION, ACTUAL WIDTH IS 7 5/8".
12. 12" CMU WALL IS A NOMINAL DIMENSION, ACTUAL WIDTH IS 11 5/8".
13. ▨ INDICATES 2x6 STUDS SPACED AT 16" O.C. SHEATHED WITH CDX PLYWOOD, SEE GENERAL NOTES TO NAILING PATTERN.
14. SIMPSON HTT5 HOLDOWN INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
15. ALL INTERIOR SHEAR WALLS SHALL HAVE 1/2" DIA. x 8" LONG TITEN HD ANCHORS SPACED AT 48" O.C. ON BOTTOM SILL PLATE.
16. (P1) INDICATES CMU PILASTER SEE DETAIL 16/S6.0
17. (P2) INDICATES CMU PILASTER SEE DETAIL 17/S6.0

## CMU WALL PLAN / STUD WALL PLAN

SCALE: 1/8"=1'-0"

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SHEET: S4.0

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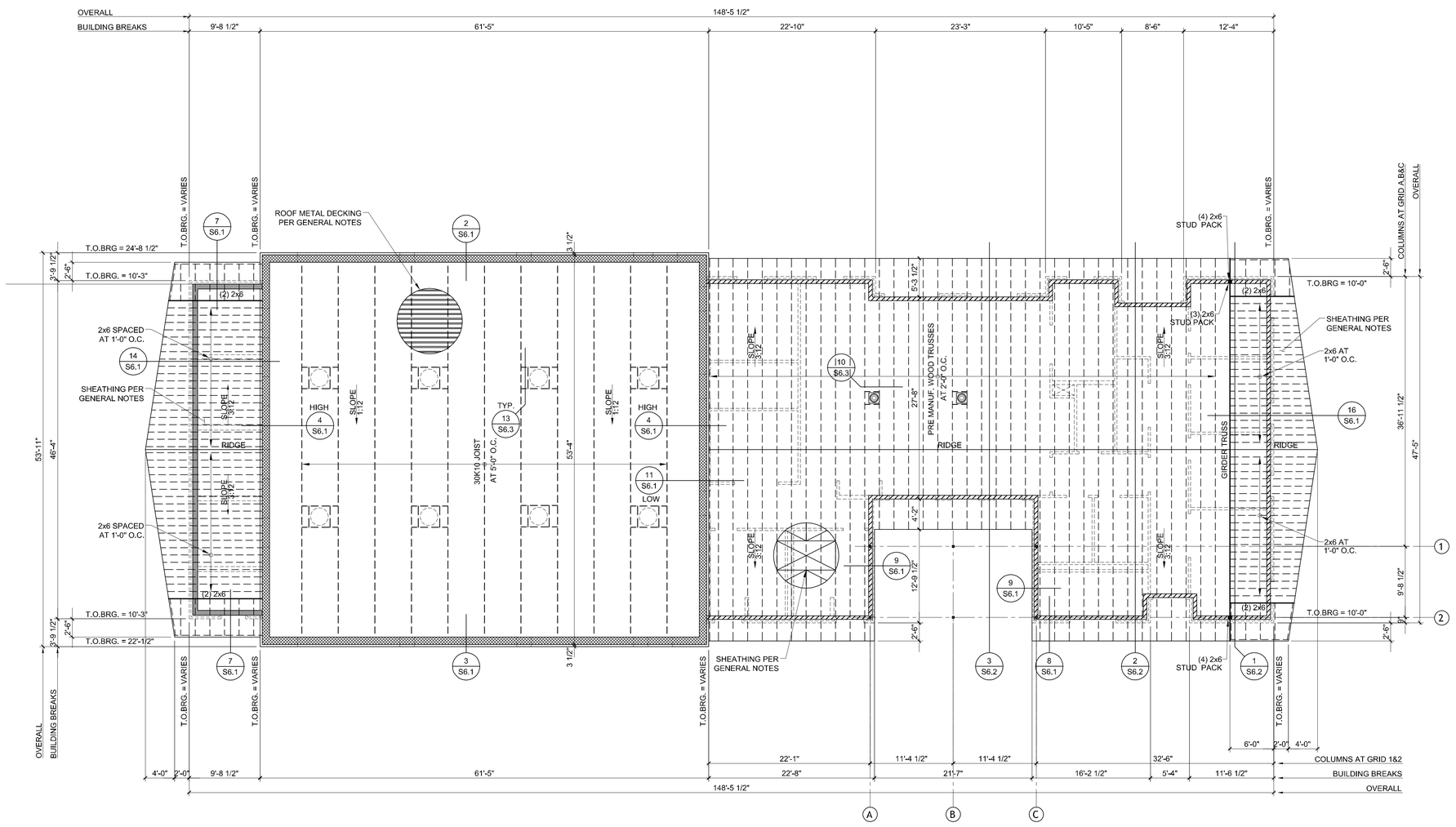


NOTE:
ALL EXPOSED EXTERIOR STEEL SHALL BE HOT DIPPED GALVANIZED

## FRAMING NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS BEFORE COMMENCING WORK.
2. REFER TO ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL DIMENSIONS.
3. REFER TO ARCH'L PLANS FOR ROOF OVERHANG DIMENSION.
4. JOIST MANUFACTURER TO PROVIDE ADEQUATE BRIDGING FOR JOISTS AS REQUIRED BY S.J.I.
5. CONTRACTOR TO COORDINATE ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SUPPORTED BY THE STRUCTURE WITH THE STRUCTURE MANUFACTURER.
6. CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE OF ANY AND ALL ROOF HATCHES WITH ARCH'L DRAWINGS.
7. 8" CMU WALL IS A NOMINAL DIMENSION, ACTUAL WIDTH IS 7 5/8".
8. 12" CMU WALL IS A NOMINAL DIMENSION, ACTUAL WIDTH IS 11 5/8".
9. REFER TO M.E.P. DRAWINGS FOR ANY HOUSEKEEPING PADS AT MECHANICAL ROOMS.

## FRAMING PLAN

SCALE: 1/8"=1'-0"

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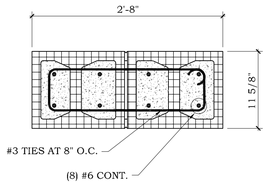
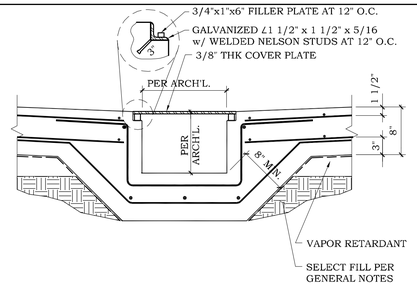
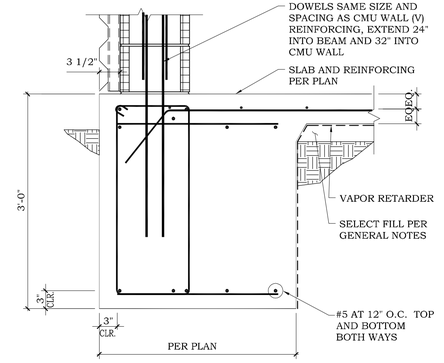
SHEET: S5.0



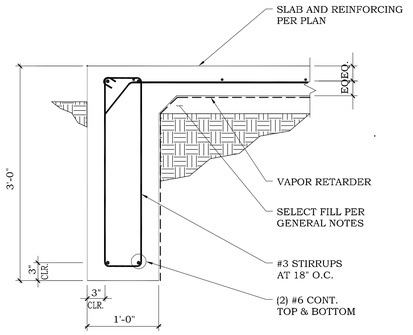

PILASTER "P2" | 17




TRENCH DETAIL | 13



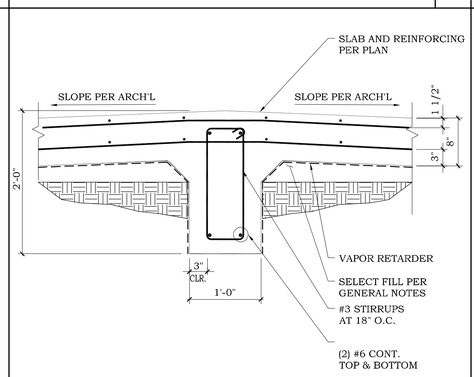

EXTERIOR FOOTING | 9



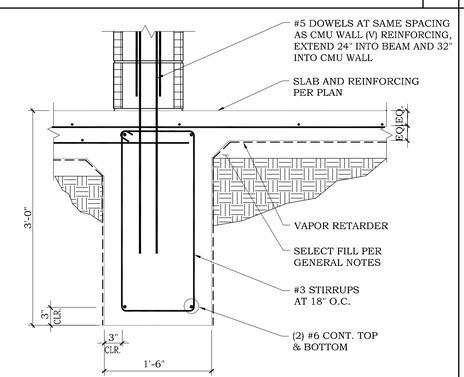

EXTERIOR FOOTING | 5

NOT USED | 1

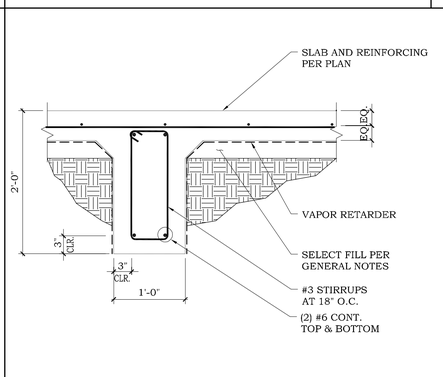
NOT USED | 18



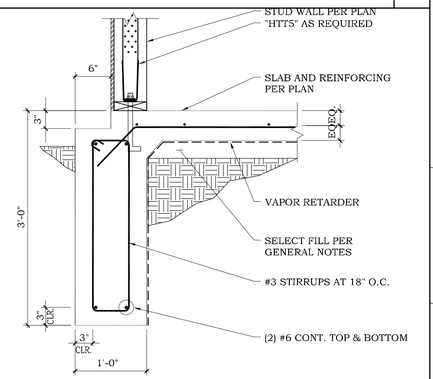

INTERIOR FOOTING | 14




INTERIOR FOOTING | 10

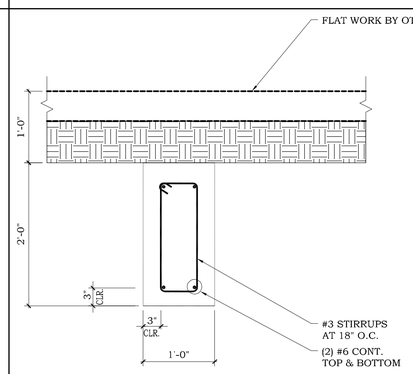



INTERIOR FOOTING | 6

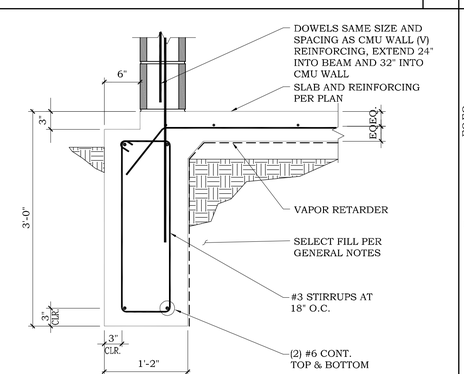



EXTERIOR FOOTING | 2

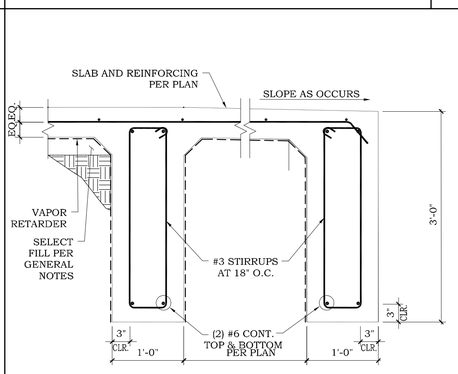
NOT USED | 19



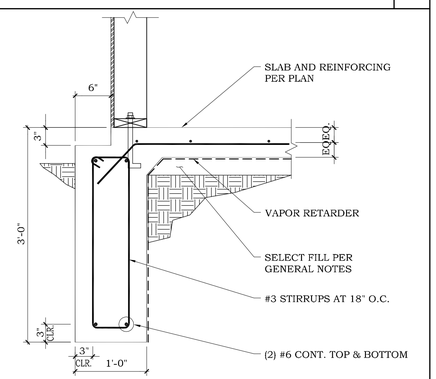

INTERIOR FOOTING AT CANOPY | 15




EXTERIOR FOOTING | 11

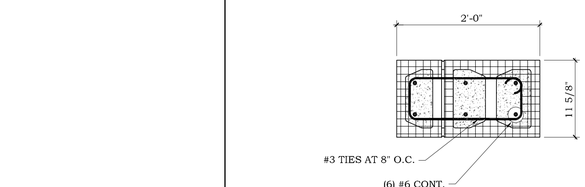



EXTERIOR FOOTING | 7

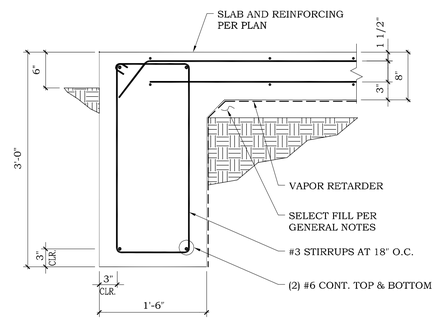



EXTERIOR FOOTING | 3

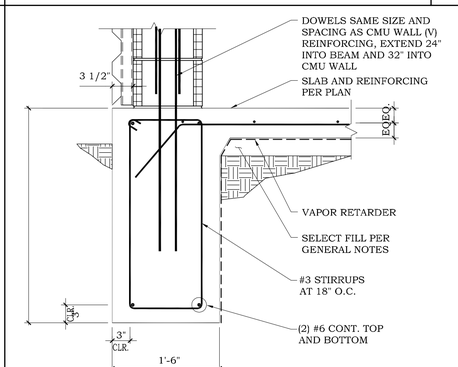
NOT USED | 20



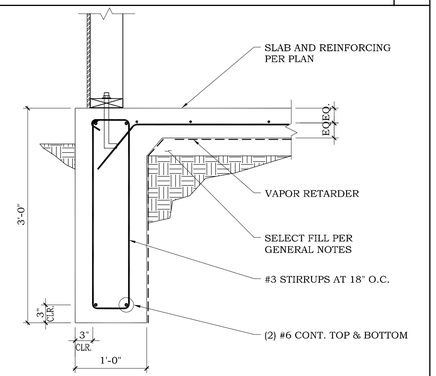

PILASTER "P1" | 16




EXTERIOR FOOTING | 12




EXTERIOR FOOTING | 8




EXTERIOR FOOTING | 4

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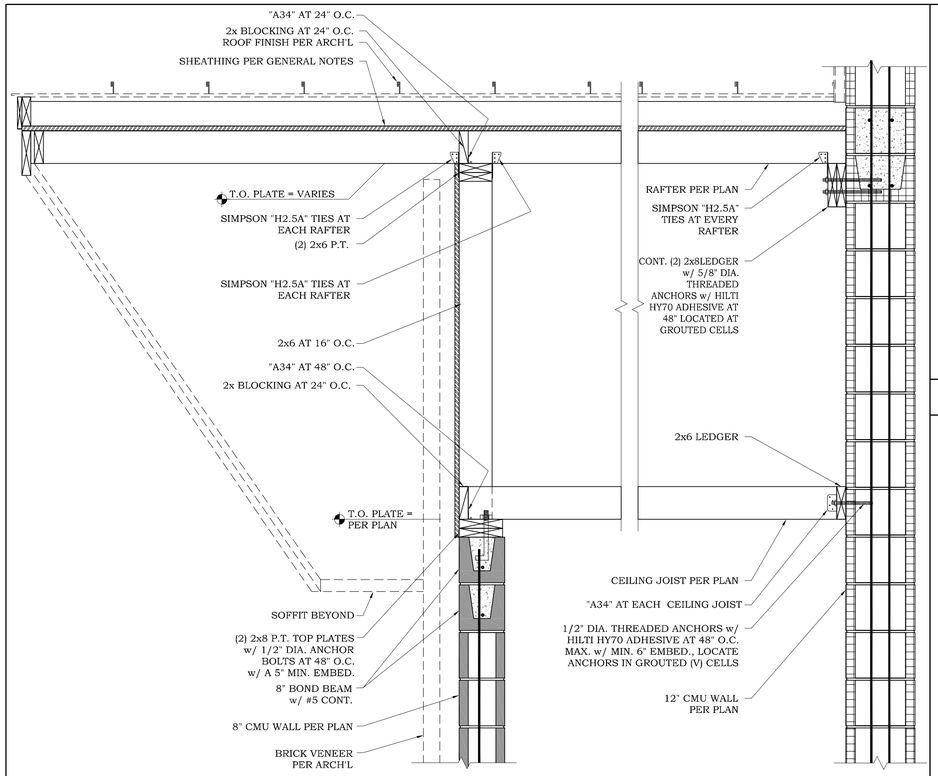
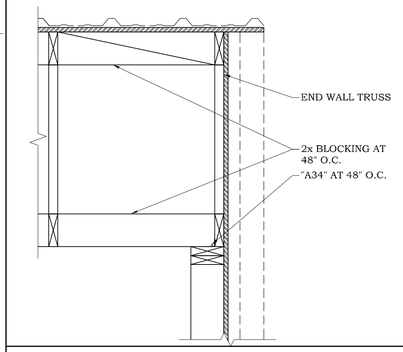
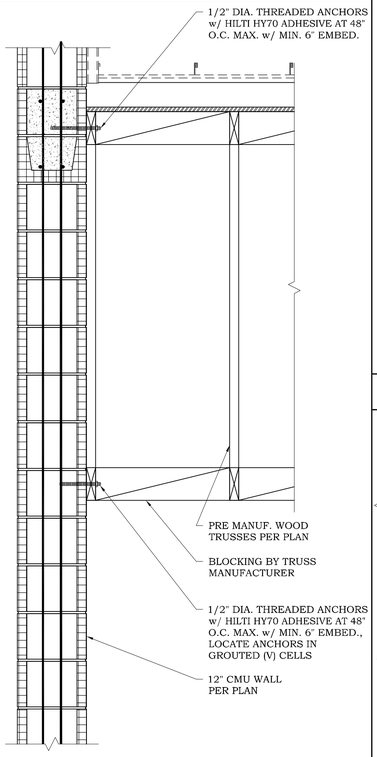



WOOD TRUSS TO CMU WALL | 14




WOOD TRUSS TO STUD WALL | 9




WOOD TRUSS TO CMU WALL | 11

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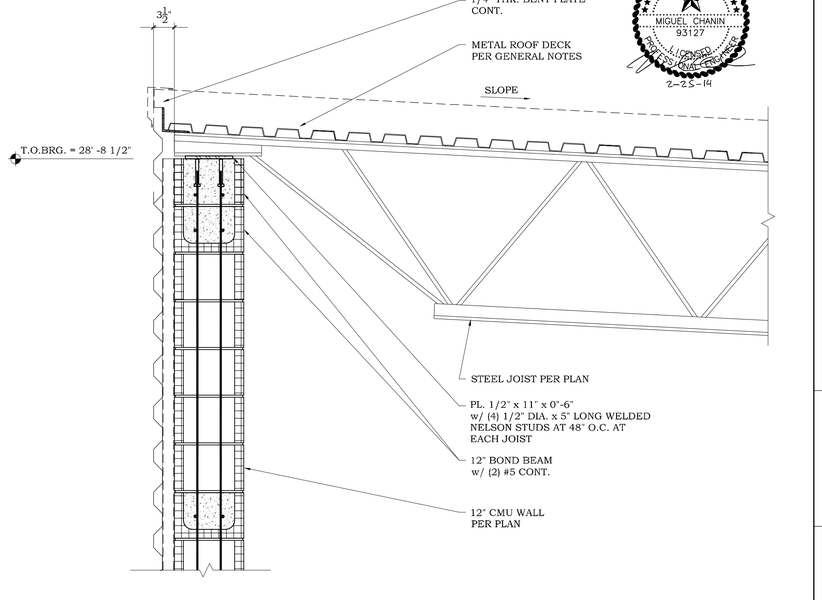
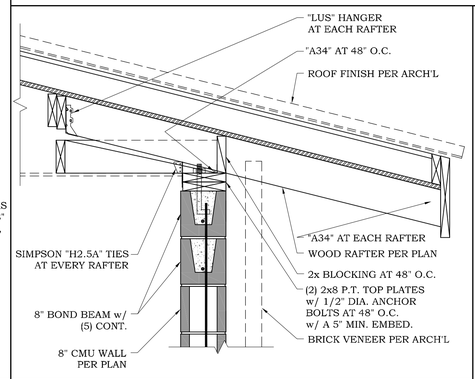
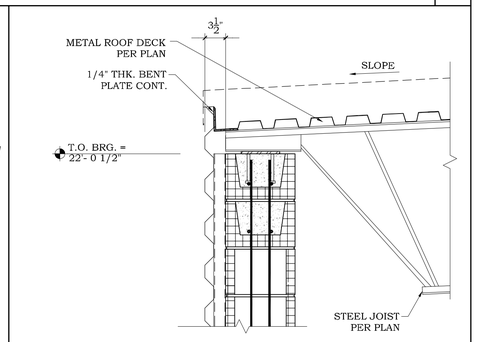


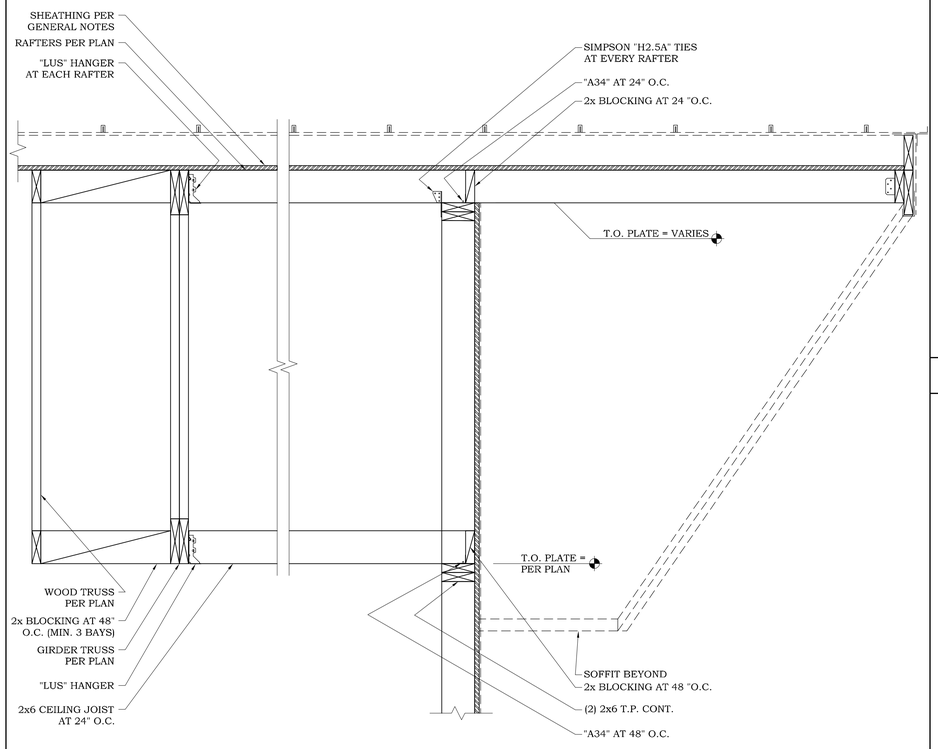

STEEL JOIST TO CMU WALL | 2



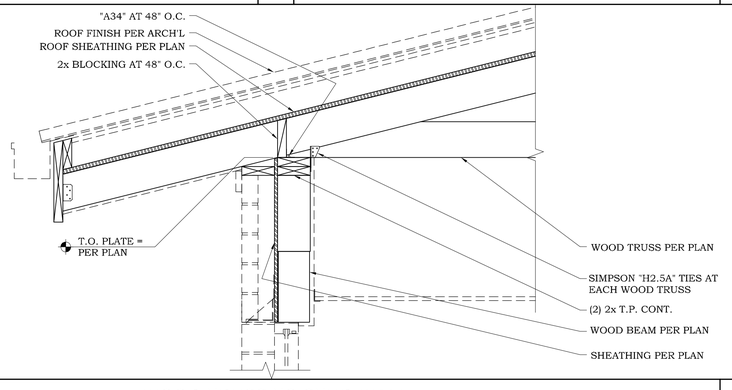

WOOD TRUSS TO CMU WALL | 7



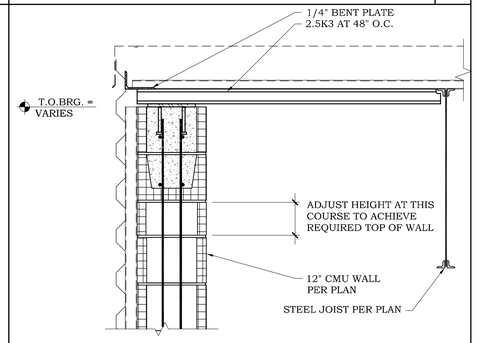

STEEL JOIST TO CMU WALL | 3




WOOD TRUSS TO STUD WALL | 16




WOOD TRUSS TO STUD WALL | 8




STEEL JOIST TO CMU WALL | 4

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL EMERGENCY SERVICE FACILITY PRECINCT NO. 4

**PROJECT :** LINN - SAN MANUEL, TEXAS
**OWNER :** HIDALGO COUNTY

Mata & Garcia ARCHITECTS L.L.P
architecture | project management | interior design
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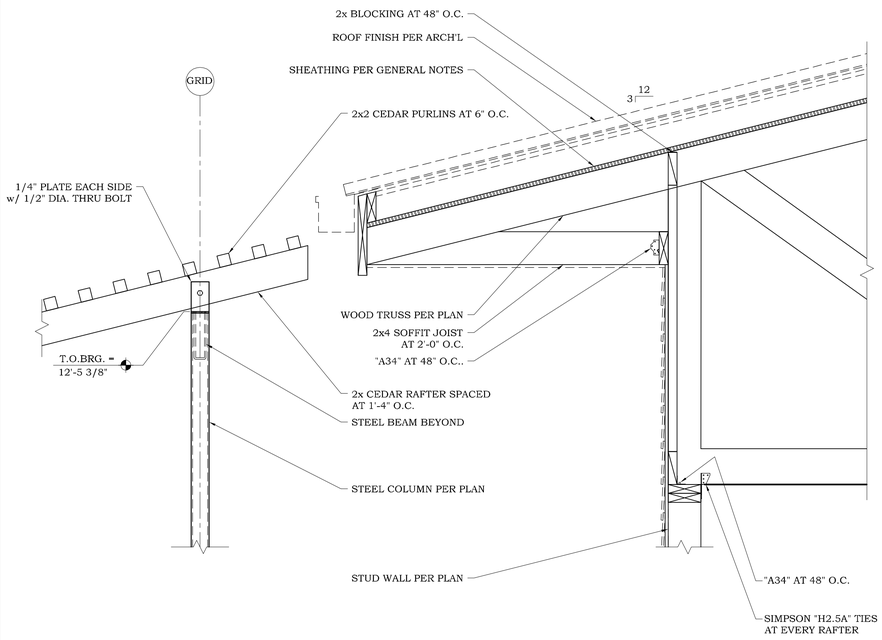
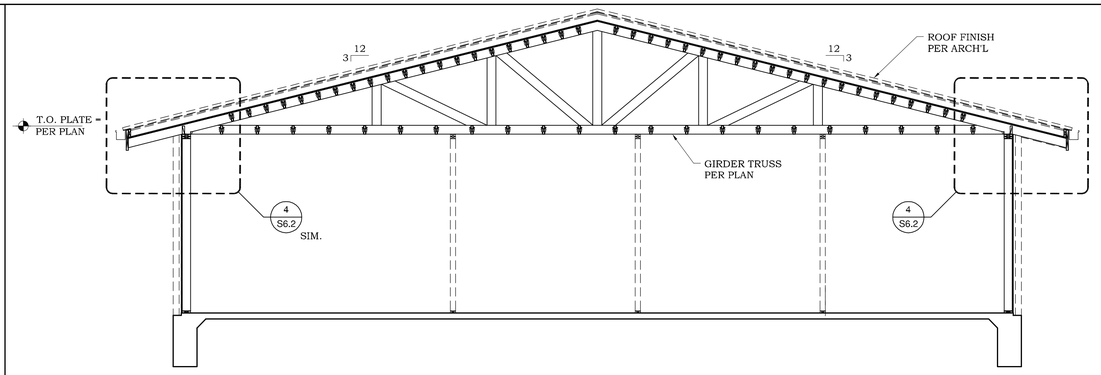
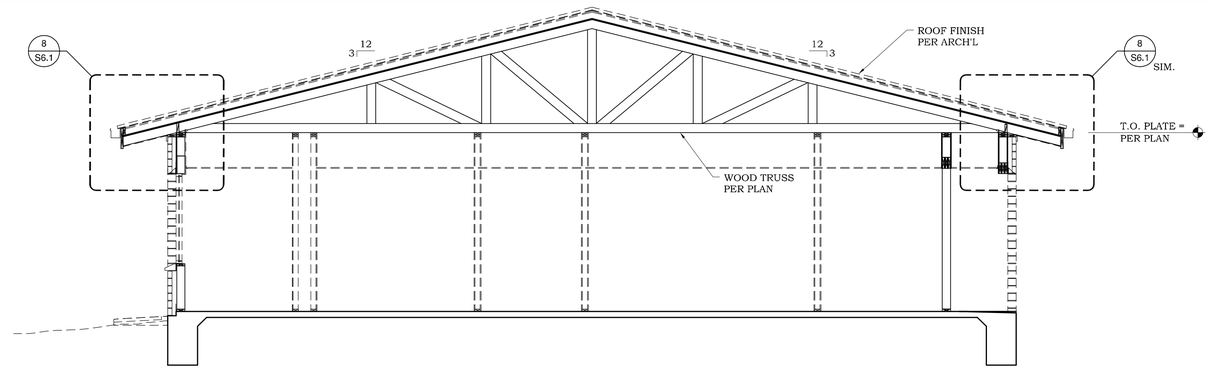


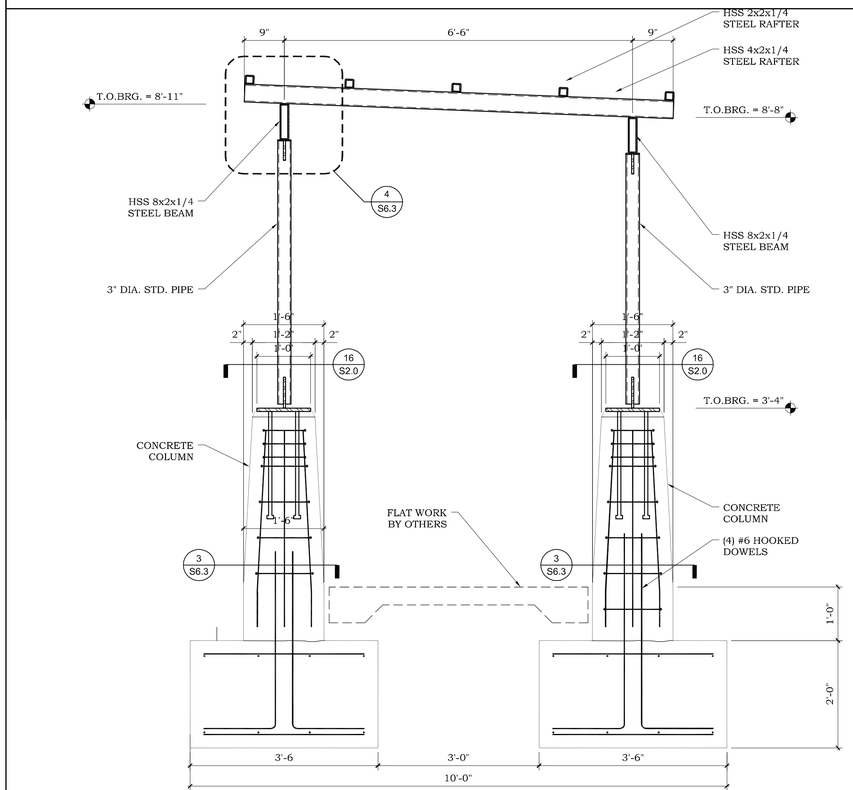

SECTION DETAIL | 14



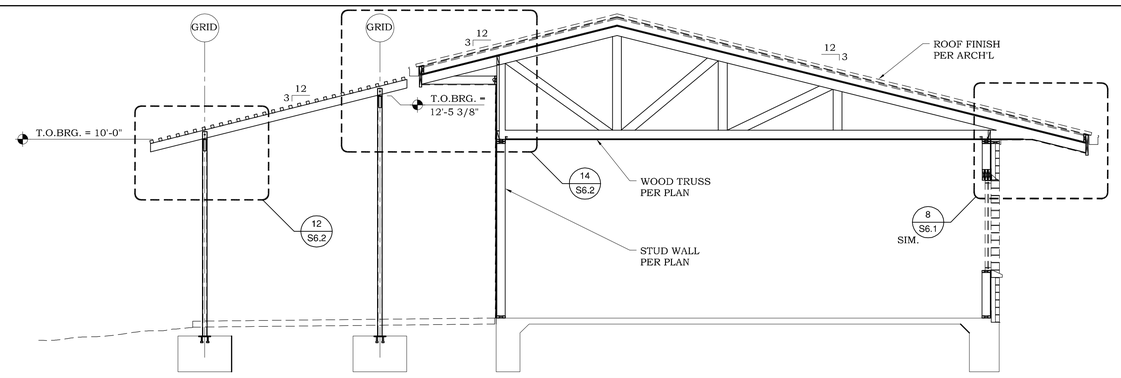

GIRDER TRUSS ELEVATION | 1




BUILDING SECTION | 2




CANOPY DETAIL | 16

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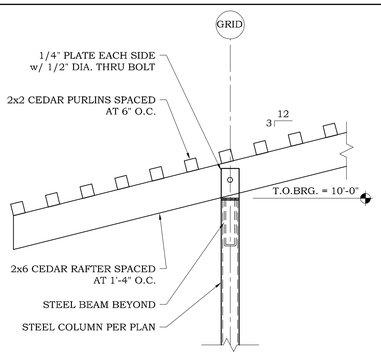
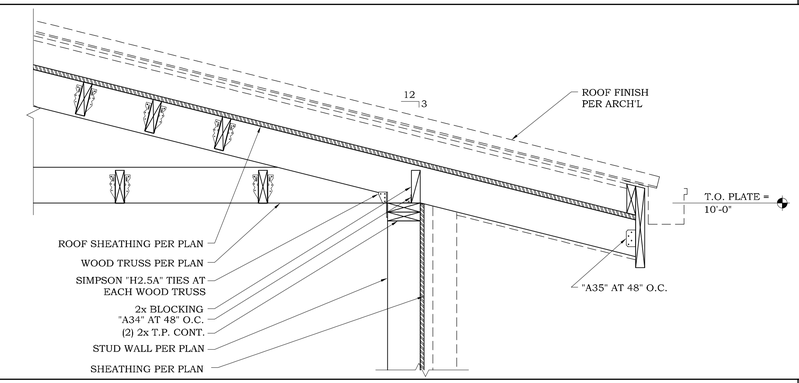



STEEL BEAM TO STEEL COLUMN | 12




WOOD TRUSS TO STUD WALL | 4

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STATE OF TEXAS
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93127
LICENSED
PROFESSIONAL ENGINEER
2-25-14

PROJECT #: 13234
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LINN - SAN MANUEL EMERGENCY
SERVICE FACILITY PRECINCT NO. 4
PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

Mata & Garcia
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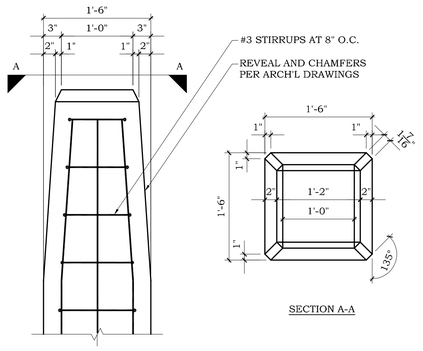
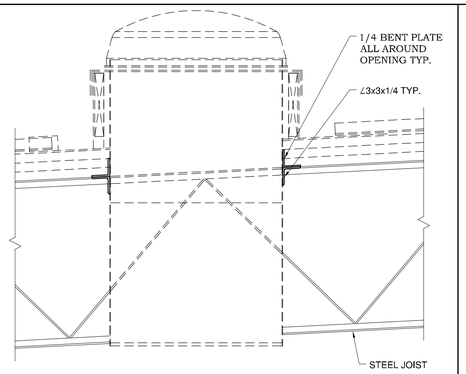
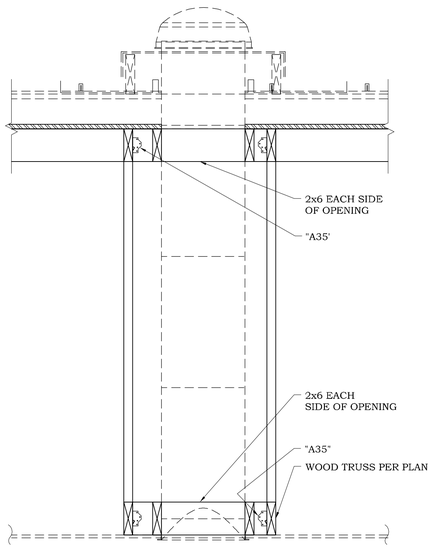



CANOPY SECTION | 17




SECTION AT SKY LIGHT | 13

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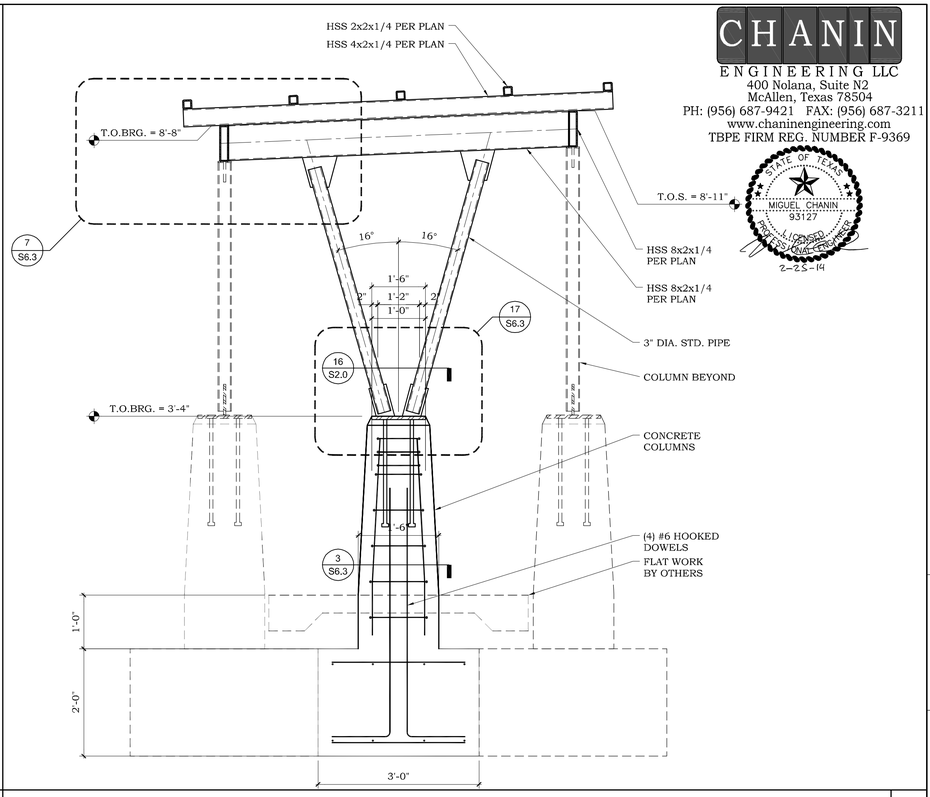
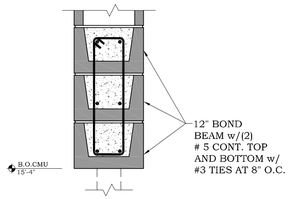
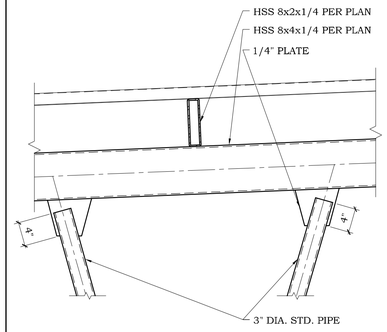


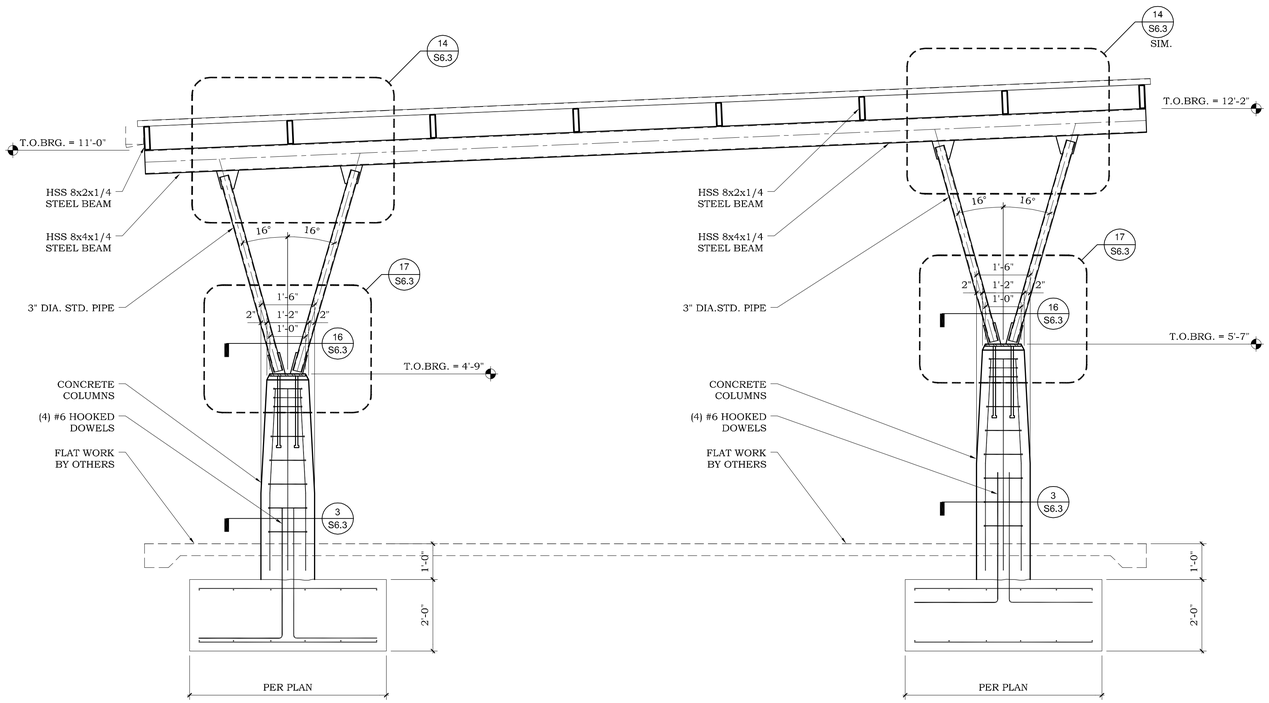

CANOPY DETAIL | 2



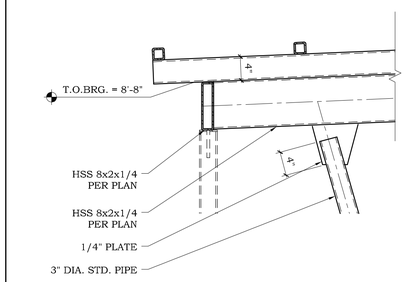

CMU LINTEL | 18



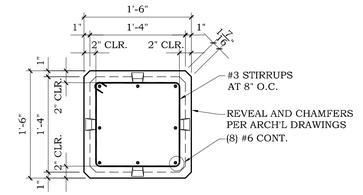

STEEL BEAM TO STEEL BRACE | 14



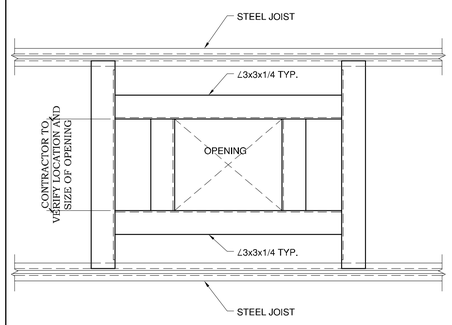

PARKING CANOPY DETAIL | 12



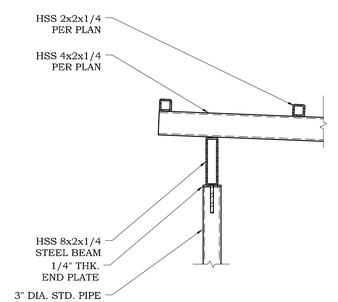

STEEL BEAM TO STEEL COLUMN | 7




CANOPY SECTION | 3




SUPPORT FOR HATCH OPENING | 8




STEEL BEAM TO STEEL COLUMN | 4

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STATE OF TEXAS
MIGUEL CHANIN
93127
LICENSED
PROFESSIONAL ENGINEER
2-25-14

PROJECT #: 13234
DATE: 02.25.14
DRAWN BY: L.R.
CHECKED BY: M.C.
REVISION:
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4:

LINN - SAN MANUEL EMERGENCY
SERVICE FACILITY PRECINCT NO. 4

PROJECT : LINN - SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

Mata & Garcia
ARCHITECTS LLP
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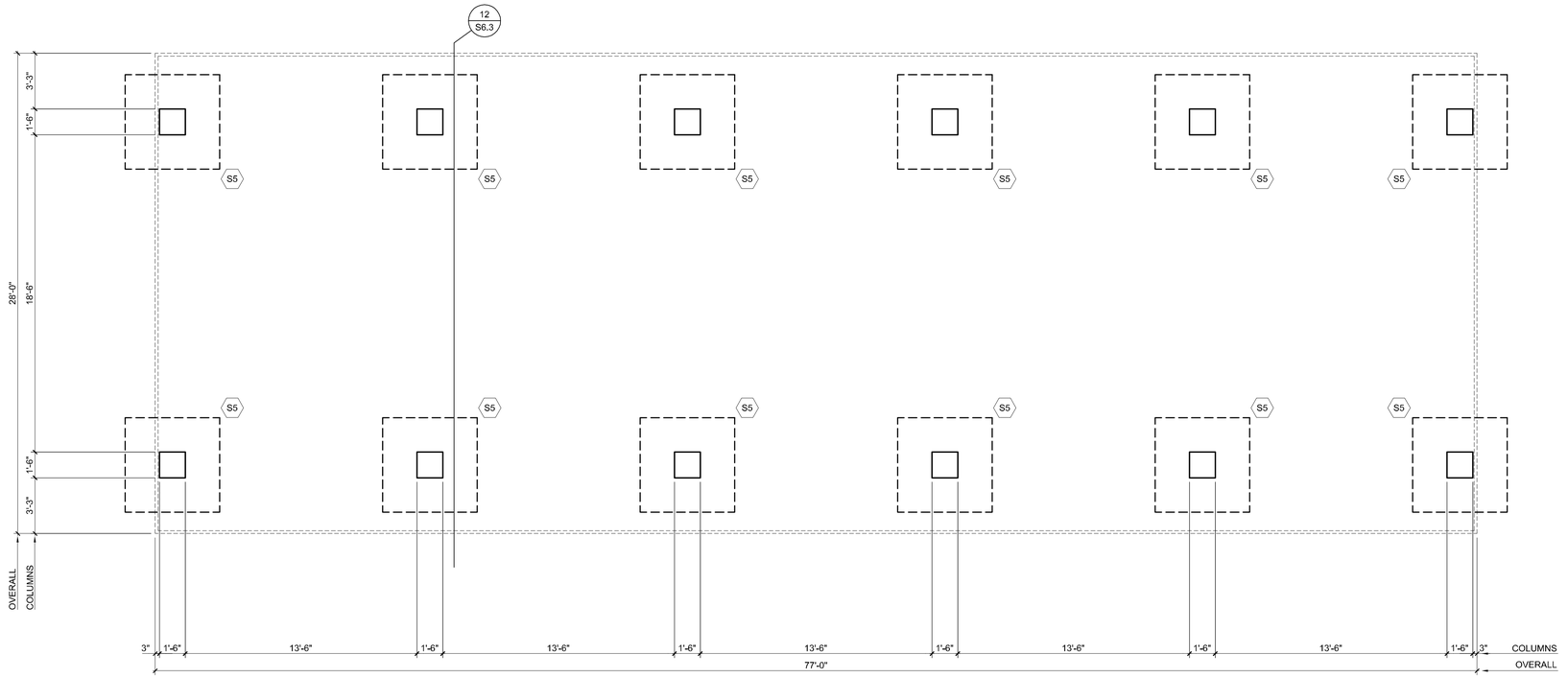


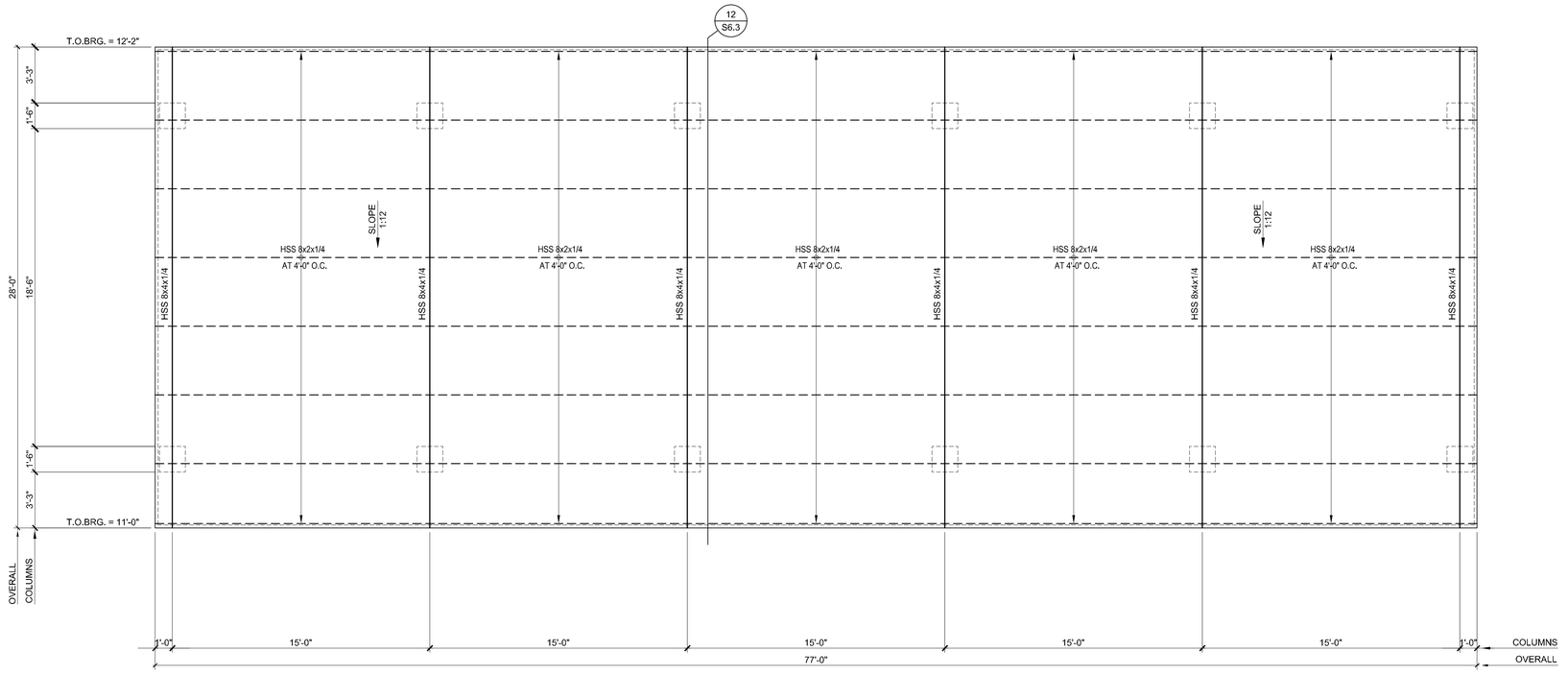

## FOUNDATION NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS BEFORE COMMENCING WORK.
2. CONTRACTOR TO VERIFY LOCATION OF ANY/ALL DROPS AND DRAINS IN SLAB WITH ARCHITECTURAL DRAWINGS.
3. CONTRACTOR TO VERIFY REQUIRED F.F.E. WITH CIVIL ENGINEERING DRAWINGS.
4. REFER TO FOOTING SCHEDULE FOR FOOTING SIZE AND REINFORCEMENT, SEE DETAIL 6/S2.0

PLAN NORTH

## FOUNDATION PLAN AT PARKING CANOPY

SCALE: 1/4"=1'-0"




NOTE:
ALL EXPOSED EXTERIOR STEEL SHALL BE HOT DIPPED GALVANIZED

## FRAMING NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PLANS BEFORE COMMENCING WORK.
2. REFER TO ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL DIMENSIONS.
3. REFER TO ARCH'L PLANS FOR ROOF OVERHANG DIMENSION.
4. JOIST MANUFACTURER TO PROVIDE ADEQUATE BRIDGING FOR JOISTS AS REQUIRED BY S.J.I.
5. CONTRACTOR TO COORDINATE ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SUPPORTED BY THE STRUCTURE WITH THE STRUCTURE MANUFACTURER.
6. CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE OF ANY AND ALL ROOF HATCHES WITH ARCH'L DRAWINGS.
7. 8" CMU WALL IS A NOMINAL DIMENSION, ACTUAL WIDTH IS 7 5/8".
8. 12" CMU WALL IS A NOMINAL DIMENSION, ACTUAL WIDTH IS 11 5/8".
9. REFER TO M.E.P. DRAWINGS FOR ANY HOUSEKEEPING PADS AT MECHANICAL ROOMS.

PLAN NORTH

## FOUNDATION PLAN AT PARKING CANOPY

SCALE: 1/4"=1'-0"

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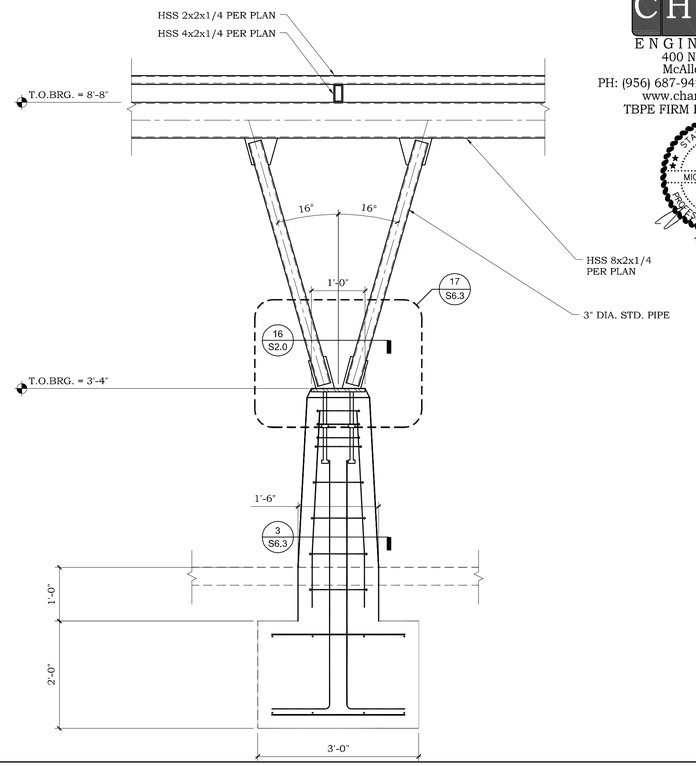
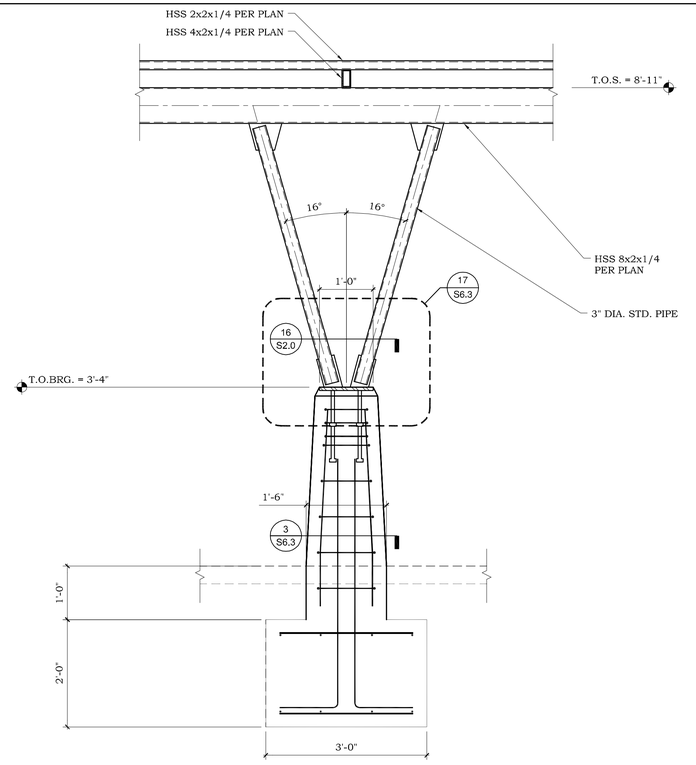
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NOT USED | 17 | NOT USED | 13 | NOT USED | 9 | | |
| NOT USED | 18 | NOT USED | 14 | NOT USED | 10 | CANOPY DETAIL | 2 |
| NOT USED | 19 | NOT USED | 15 | NOT USED | 11 | | |
| NOT USED | 20 | NOT USED | 16 | NOT USED | 12 | CANOPY DETAIL | 4 |





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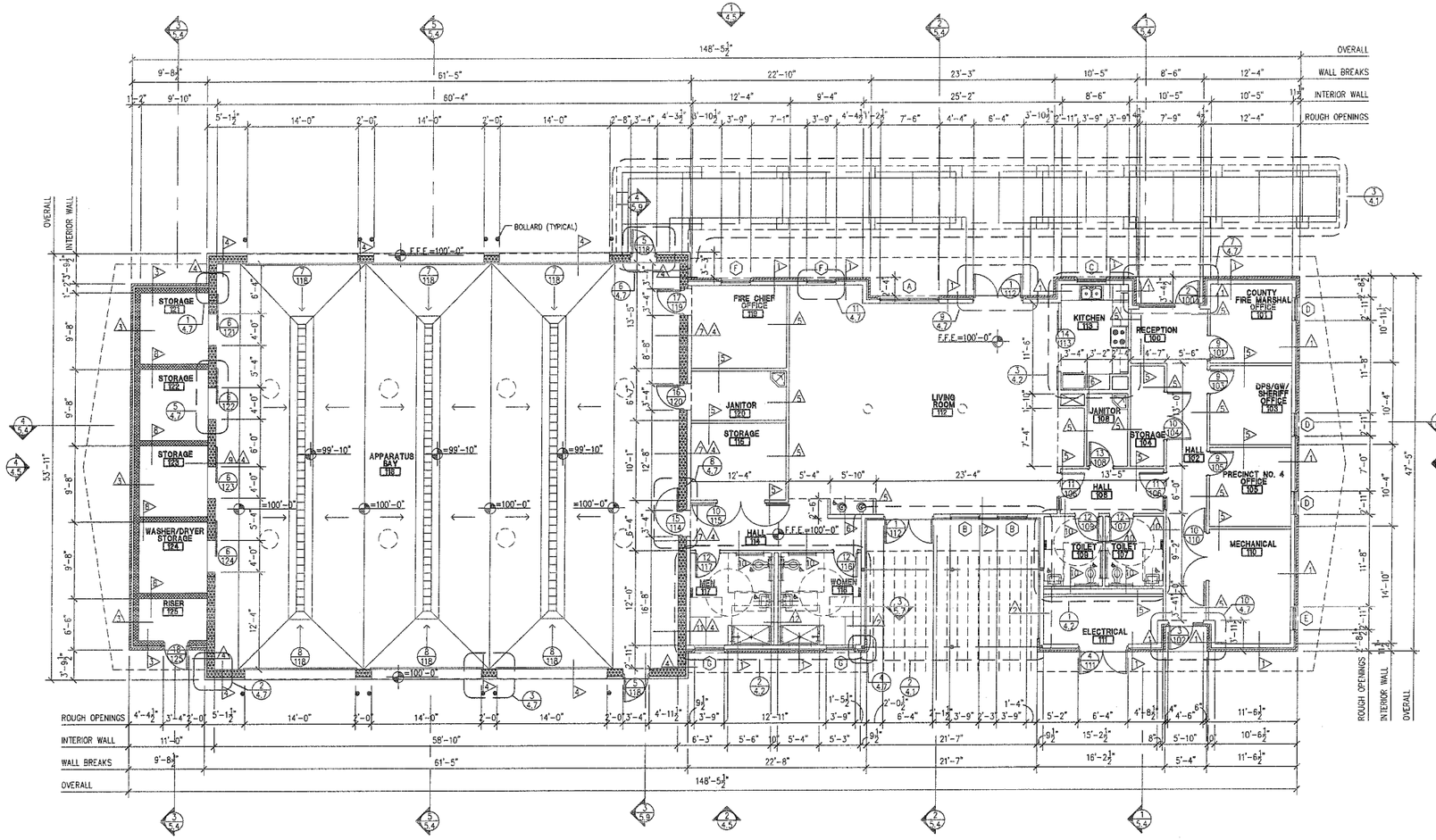
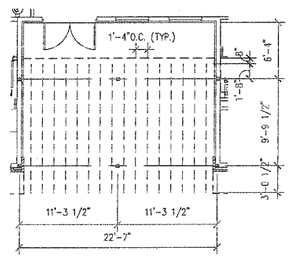
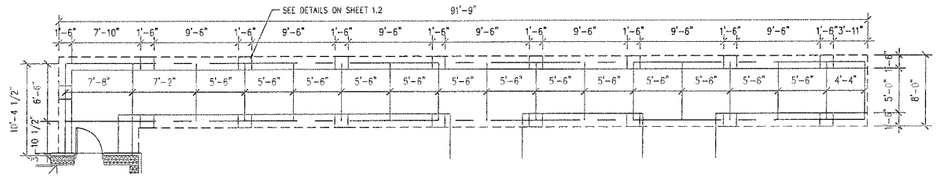



## 1 FLOOR PLAN
SCALE: 1/8"=1'-0"




## 2 PERGOLA PLAN
SCALE: 1/8"=1'-0"




## 3 CANOPY PLAN
SCALE: 1/8"=1'-0"

# WALL TYPE LEGEND

## EXTERIOR WALLS

1 — 11 1/2" — 6 5/16"
- CLAY BRICK VENEER
- WEATHER BARRIER
- 1/2" WOOD SHEATHING
- 2x6 WOOD STUD FRAMING AT 16" O.C.
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED

2 — 7 5/8" — INTERIOR
- HARDI-BOARD CEMENTITIOUS WOOD SIDING, FACTORY FINISHED
- FW-100 AIR WATER VAPOR BARRIER
- 3/4" WOOD SHEATHING
- 2x6 WOOD STUD FRAMING AT 16" O.C.
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED

3 — 1'-1 1/8" — 7 5/8" — 1/2" — INTERIOR
- CLAY BRICK VENEER
- 2" XPS INSULATION BOARD
- FW-100 AIR WATER VAPOR BARRIER
- 8" CMU WALL PAINTED

4 — 1'-3 1/4" — 11 5/8" — 1/2" — INTERIOR
- CORRUGATED METAL PANEL BASED ON 7.2 PANEL BY MBCI
- 2" XPS INSULATION BOARD
- 2" FURRING ZEES
- FW-100 AIR WATER VAPOR BARRIER
- 12" CMU WALL, PAINTED

## INTERIOR WALLS

5 — 4 3/4"
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED
- 2x4 WOOD STUD FRAMING AT 16" O.C.

6 — 6 3/4"
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED
- 2x6 WOOD STUD FRAMING AT 16" O.C.

7 — 1'-5 1/8" — 11 5/8" — 5 1/2"
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED
- FW-100 AIR WATER VAPOR BARRIER
- 2x6 WOOD STUD FRAMING AT 16" O.C.
- 12" CMU WALL, PAINTED

8 — 7 5/8"
- 8" CMU WALL, PAINTED

9 — 11 5/8"
- 12" CMU WALL, PAINTED

## PLUMBING WALLS

10 — 6 1/4"
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED
- 2x4 WOOD STUD FRAMING AT 16" O.C.
- 5/8" TYPE 'X' GYPSUM TILE BACKER BOARD, PAINTED
- TILE FINISH AS SCHEDULED

11 — 7 1/4"
- 5/8" TYPE 'X' GYPSUM WALL BOARD, PAINTED
- 2x6 WOOD STUD FRAMING AT 16" O.C.
- 5/8" TYPE 'X' GYPSUM TILE BACKER BOARD, PAINTED
- TILE FINISH AS SCHEDULED

12 — 1'-4" — 4 5/8" — 5/8" — 7" — CMU
- FINISH AS SCHEDULED
- 2x4 WOOD STUD FRAMING AT 16" O.C.
- 5/8" TYPE 'X' GYPSUM TILE BACKER BOARD, PAINTED
- TILE FINISH AS SCHEDULED

GENERAL NOTES:
1. ALL CERAMIC WALL TILE NEEDS TO BE BACKED WITH TYPE 'X' TILE BACKER BOARD. REFER TO ROOM FINISH SCHEDULE.
2. ALL INTERIOR FRAME WALL DIMENSIONS ARE TAKEN FROM FACE OF STUD.
3. SEE DETAIL 2/4.7 FOR WALL PANEL OUTSIDE CORNER CONDITION.
4. SEE DETAIL 1/4.7 FOR METAL PANEL INSIDE CORNER DETAIL.

PROJECT # 20.310
DATE:
DRAWN BY:
CHECKED BY: H.R.G.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN-SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

HECTOR R. GARCIA 13962
LICENSE EXPIRES: 03/31/2014

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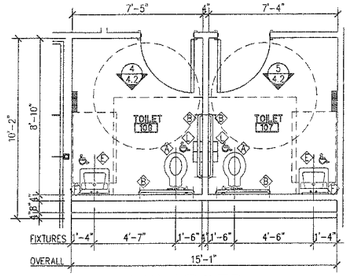
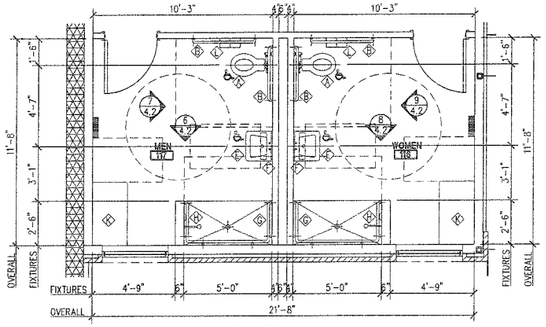



1 ENLARGED RESTROOM PLAN
SCALE: 1/4"=1'-0"




2 ENLARGED RESTROOM PLAN
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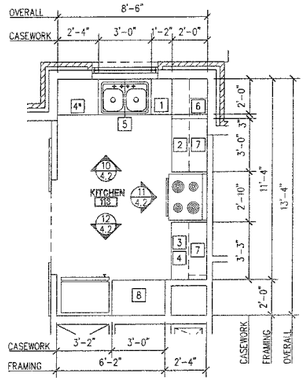



3 ENLARGED KITCHEN PLAN
SCALE: 1/4"=1'-0"

## TAS FIXTURE LEGEND AND MOUNTING HEIGHTS FOR ADULTS

| | | |
|---|---|---|
| A | WATER CLOSET | TOP OF SEAT = 17" MIN., 19" MAX. FROM F.F. FLUSH CONTROLS NOT TO EXCEED 46" CENTER LINE = 16" MIN., 18" MAX. FROM FINISHED ADJACENT WALL |
| B | HORIZONTAL TOILET GRAB BAR | 33" MIN., 36" MAX. FROM F.F. TO TOP OF OF GRIPPING SURFACE |
| C | WALL-HUNG LAVATORY | 34" MAX. FROM F.F. TO TOP OF RIM WITH A MINIMUM KNEE CLEARANCE OF 27" 20" MAX. FROM FRONT EDGE OF COUNTER TO FAUCET TO FAUCET |
| F | MIRROR (MOUNTED ABOVE LAVATORY) | 40" MAX. FROM F.F. TO BOTTOM OF REFLECTIVE SURFACE (NOT MIRROR FRAME) |
| G | HORIZONTAL SHOWER GRAB BAR | 33" MIN., 36" MAX. FROM F.F. TO TOP OF GRIPPING SURFACE |
| H | HAND SHOWER HEAD MOUNTING | 48" MAX. FROM F.F. TO HIGHEST OPERABLE PART OF UNIT |
| K | DRESSING BENCH | 1'-7" MAX. FROM F.F. TO TOP OF BENCH |
| L | MULTI-ROLL TOILET TISSUE DISPENSER | 17" MIN., 24" MAX FROM F.F. TO OUTLET OF DISPENSER 7" MIN., 9" MAX FROM CENTER LINE TO FRONT OF BOWL |
| M | WALL MOUNTED SOAP DISPENSER | 48" MAX. FROM F.F. TO HIGHEST OPERABLE PART OF UNIT |
| S | ELECTRIC DRINKING FOUNTAIN | 36" MAX. FROM F.F. TO BUBBLER JET A MINIMUM KNEE CLEARANCE OF 27" |

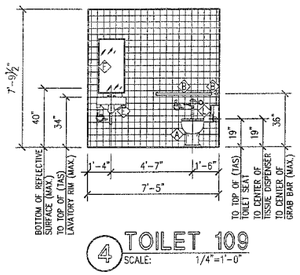
## CASEWORK SCHEDULE

| NO. | FIXTURE | W" X D" X H" | REMARKS |
|---|---|---|---|
| 1 | BASE CABINET | 14" X 24" X 34" | – |
| 2 | BASE CABINET | 36" X 24" X 34" | – |
| 3 | PORTABLE CABINET | 36" X 24" X 32" | ON CASTERS |
| 4 | BASE OPENING | 39" X 24" X 34" | – |
| 4* | BASE OPENING | 28" X 24" X 34" | FOR DISHWASHER |
| 5 | SINK BASE (ADA) | 36" X 24" X 34" | – |
| 6 | WALL CABINET | 14" X 12" X 32" | – |
| 7 | WALL CABINET | 36" X 12" X 32" | – |
| 8 | PANTRY CABINET | 38" X 24" X 84" | – |

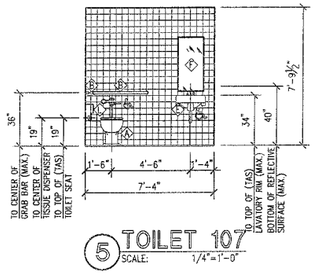
## CASEWORK LEGEND AND GENERAL NOTES

X CASEWORK TYPE, REFER TO CASEWORK SCHEDULE.

1. IF NO CASEWORK WIDTH DESIGNATION IS GIVEN ON FIXTURE PLAN REFER TO CASEWORK SCHEDULE FOR TOTAL CASEWORK DIMENSIONS.
2. PROVIDE FILLER PIECES AS REQUIRED AT ALL CABINETS AND COUNTERTOPS.
3. UPPER WALL CABINETS TO BE MOUNTED ON WALL WITH TOP OF CABINET AT 84" A.F.F. OTHERWISE NOTED.
4. ALL COUNTERTOPS AND SPLASHES TO BE PLASTIC LAMINATE, UNLESS OTHERWISE NOTED ON FIXTURE PLAN.
5. ALL CABINET DOORS AND DRAWERS TO BE LOCKABLE.
6. FIELD VERIFY ALL DIMENSIONS.
7. MODEL NUMBERS SHOWN ARE REFERENCED FROM SOUTH TEXAS WOODMILL ARCHITECTURAL CASEWORK CATALOG.
8. AT CORNER LOCATION MARKED WITH AN 'X' ON A PLAN, PROVIDE LARGER OF THE TWO UNITS WITH ACCESS ON TWO SIDE




4 TOILET 109
SCALE: 1/4"=1'-0"




5 TOILET 107
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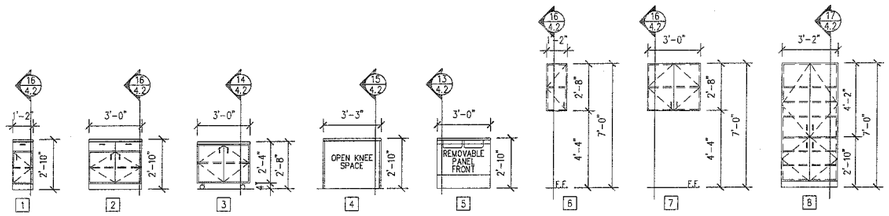
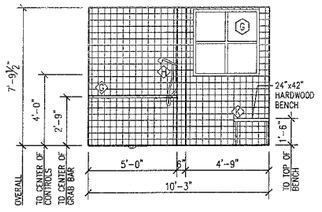
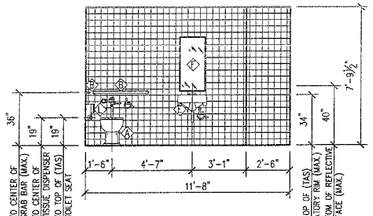
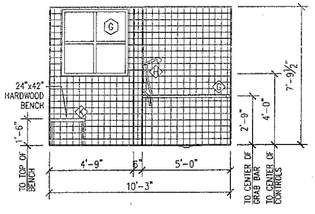


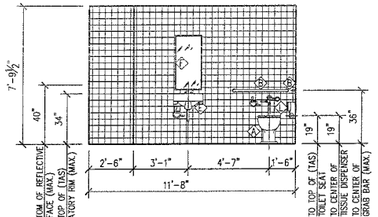

6 MEN 117
SCALE: 1/4"=1'-0"



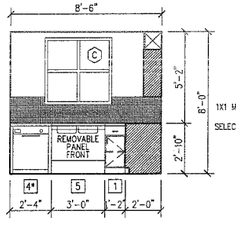

7 MEN 117
SCALE: 1/4"=1'-0"



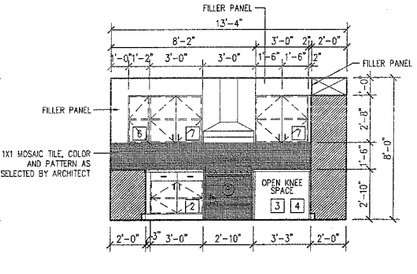

8 WOMEN 116
SCALE: 1/4"=1'-0"



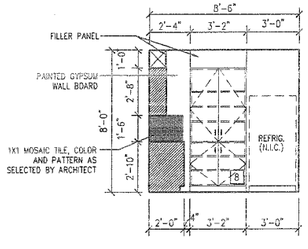

9 WOMEN 116
SCALE: 1/4"=1'-0"



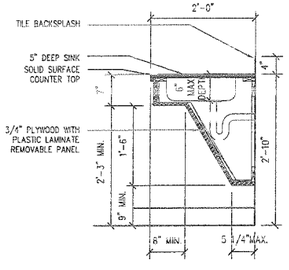

10 KITCHEN 113
SCALE: 1/4"=1'-0"



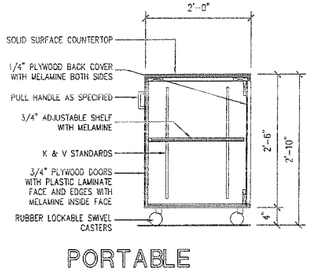

11 KITCHEN 113
SCALE: 1/4"=1'-0"



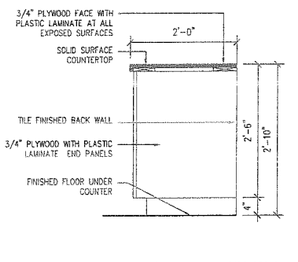

12 KITCHEN 113
SCALE: 1/4"=1'-0"



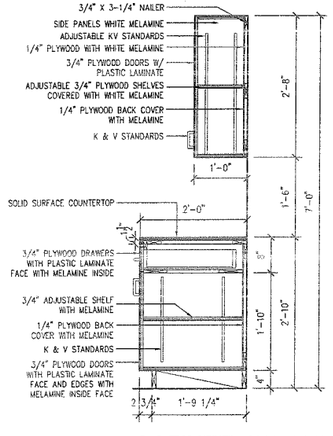

13 SINK DETAIL
SCALE: 3/4" = 1'-0"



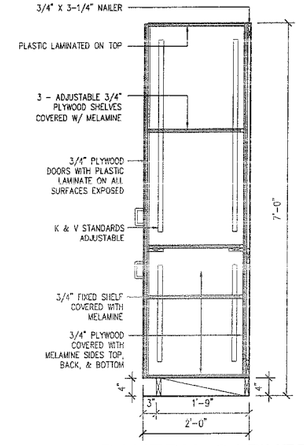

PORTABLE CABINET DETAIL
SCALE: 3/4" = 1'-0"




15 BASE OPENING
SCALE: 3/4" = 1'-0"




16 CABINET DETAIL
SCALE: 3/4" = 1'-0"




17 PANTRY CABINET
SCALE: 3/4" = 1'-0"

PROJECT #: 201310
DATE:
DRAWN BY:
CHECKED BY: H.R.G.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4
PROJECT: LINN-SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

HECTOR R. GARCIA 13962
LICENSE EXPIRES: 03/31/2014

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SHEET: 4.2

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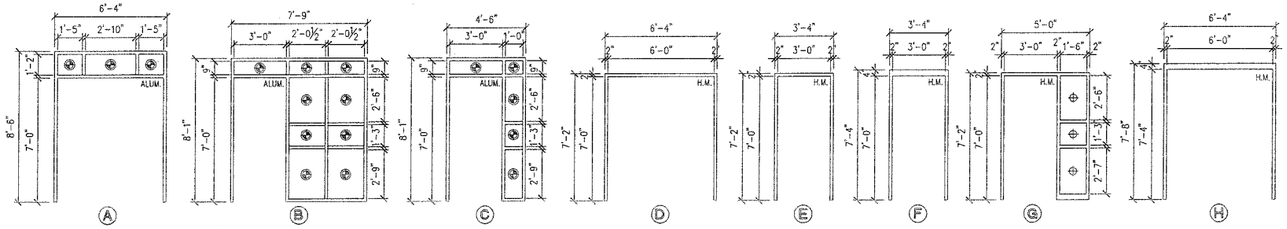


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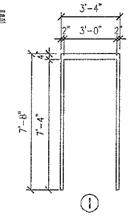
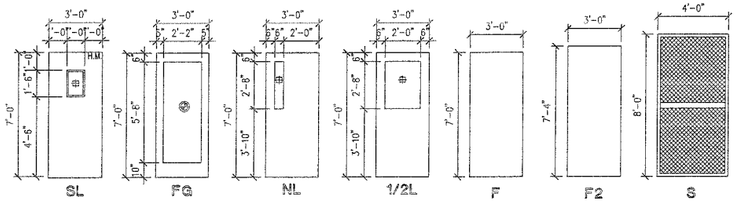
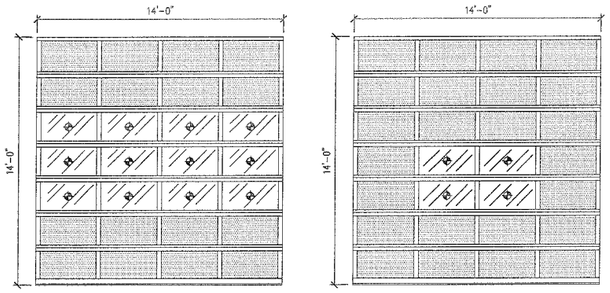
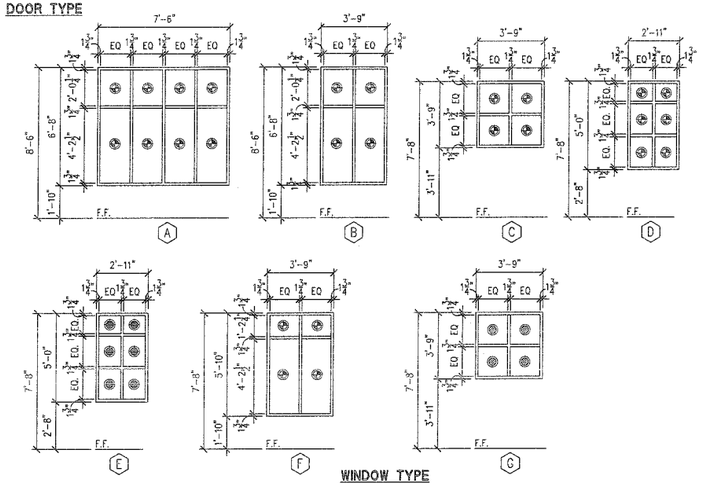



DOOR TYPE




OVERHEAD DOOR TYPE




WINDOW TYPE

## WINDOW SCHEDULE

| WINDOW MARK | WIDTH | HEIGHT | FRAME | GLASS | RATING | REMARKS |
|---|---|---|---|---|---|---|
| A | 8'-0" | 6'-8" | ALUMINUM | TINTED, INSULATED LOW-E | | |
| B | 3'-9" | 6'-8" | ALUMINUM | TINTED, INSULATED LOW-E | | |
| C | 3'-9" | 3'-9" | ALUMINUM | TINTED, INSULATED LOW-E | | |
| D | 2'-11" | 5'-0" | ALUMINUM | TINTED, INSULATED LOW-E | | |
| E | 2'-11" | 5'-0" | ALUMINUM | SPANDREL, REFLECTIVE, INSULATED | | |
| F | 3'-9" | 5'-10" | ALUMINUM | TINTED, INSULATED LOW-E | | |
| G | 2'-11" | 3'-9" | ALUMINUM | FROSTED GLASS, INSULATED | | |

NOTE:
1. ALL EXTERIOR GLAZING SHALL BE TINTED LOW-E GLASS, UNLESS NOTED OTHERWISE
2. LOW-E GLAZING COLOR AND TYPE TO BE SELECTED BY ARCHITECT, AND REFERENCED TO SOLARBAN R-100 LINE IN PPG CATALOG
3. ALL EXTERIOR ALUMINUM FRAMES SHALL BE ANODIZED, COLOR TO BE SELECTED BY ARCHITECT
4. ALL FRAMES ARE TO RECEIVE ELASTOMERIC SEALANT ON THE EXTERIOR AND CAULKING ON THE INTERIOR.
5. ALL FRAMES ARE TO RECEIVE ASPHALTIC TAPE FLASHING, COMPATIBLE WITH SPECIFIED AIR WATER VAPOR BARRIER, INSTALLED PER MANUF. RECOMMENDATIONS.

## ROOM FINISH SCHEDULE

| No. | DESCRIPTION | BASE | FLOOR | WALLS | | | | CEILING | HEIGHT | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NORTH | EAST | SOUTH | WEST | | | |
| 100 | RECEPTION | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-7 | 8'-0" | |
| 101 | COUNTY FIRE MARSHAL OFFICE | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 102 | HALL | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-7 | 8'-0" | |
| 103 | DPS/GW/SHERIFF OFFICE | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 104 | STORAGE | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 105 | PRECINCT NO. 4 OFFICE | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 106 | HALL | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-7 | 8'-0" | |
| 107 | TOILET | B-2 | F-3 | W-3 | W-3 | W-3 | W-3 | C-3 | 7'-9 1/2" | MATCH CEILING HEIGHT TO NEXT WHOLE TILE |
| 108 | JANITOR | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-3 | 8'-0" | |
| 109 | TOILET | B-2 | F-3 | W-3 | W-3 | W-3 | W-3 | C-3 | 7'-9 1/2" | MATCH CEILING HEIGHT TO NEXT WHOLE TILE |
| 110 | MECHANICAL | B-1 | F-2 | W-1 | W-1 | W-1 | W-1 | C-8 | 8'-0" | |
| 111 | ELECTRICAL | B-1 | F-2 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 112 | LIVING ROOM | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-2 | 10'-0" | |
| 113 | KITCHEN | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 114 | HALL | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 115 | STORAGE | B-1 | F-1 | W-1 | W-1 | W-1 | W-1 | C-7 | 8'-0" | |
| 116 | WOMEN | B-2 | F-3 | W-3 | W-3 | W-3 | W-3 | C-3 | 7'-9 1/2" | MATCH CEILING HEIGHT TO NEXT WHOLE TILE |
| 117 | MEN | B-2 | F-3 | W-3 | W-3 | W-3 | W-3 | C-3 | 7'-9 1/2" | MATCH CEILING HEIGHT TO NEXT WHOLE TILE |
| 118 | APPARATUS BAY | B-1 | F-2 | W-2 | W-2 | W-2 | W-2 | C-6 | 20' TO 25' | PAINTED STRUCTURE, METAL DECKING AND CONDUIT |
| 119 | FIRE CHIEF OFFICE | B-1 | F-2 | W-1 | W-1 | W-1 | W-1 | C-1 | 8'-0" | |
| 120 | JANITOR | B-1 | F-2 | W-1 | W-1 | W-1 | W-1 | C-8 | 8'-0" | |
| 121 | STORAGE | B-1 | F-2 | W-2 | W-2 | W-2 | W-2 | C-3 | 9'-10" | |
| 122 | STORAGE | B-1 | F-2 | W-2 | W-2 | W-2 | W-2 | C-3 | 9'-10" | |
| 123 | STORAGE | B-1 | F-2 | W-2 | W-2 | W-2 | W-2 | C-3 | 9'-10" | |
| 124 | WASHER/DRYER STORAGE | B-1 | F-2 | W-2 | W-2 | W-2 | W-2 | C-3 | 9'-10" | |
| 125 | RISER ROOM | -- | F-2 | W-2 | W-2 | W-2 | W-2 | C-3 | 9'-10" | |

## MATERIAL LEGEND

| BASE | | FLOOR | | WALLS | | CEILING | |
|---|---|---|---|---|---|---|---|
| MARK | MATERIAL | MARK | MATERIAL | MARK | MATERIAL | MARK | MATERIAL |
| B-1 | RUBBER COVE BASE | F-1 | VINYL COMPOSITION TILE | W-1 | GYPSUM BOARD PAINTED | C-1 | SUSPENDED ACOUSTICAL TILE 1 |
| B-2 | CERAMIC TILE | F-2 | SEALED CONCRETE (EXPOSED) | W-2 | PAINTED CMU | C-2 | SUSPENDED GYPSUM BOARD |
| | | F-3 | 2 X 2 CERAMIC TILE | W-3 | 4-1/4"X4-1/4" CERAMIC TILE | C-3 | SUSPENDED MOISTURE RESISTANT GYPSUM BOARD |
| | | F-4 | ----- | W-4 | ----- | C-4 | CEMENT PLASTER SOFFIT |
| | | | | | | C-5 | FIBER CEMENT SOFFIT |
| | | | | | | C-6 | EXPOSED PAINTED STRUCTURE |
| | | | | | | C-7 | SUSPENDED ACOUSTICAL TILE 1 1-HOUR FIRE RATED |
| | | | | | | C-8 | SUSPENDED MOISTURE RESISTANT BOARD, 1-HOUR FIRE RATED |

## DOOR AND FRAME SCHEDULE

| DOOR | | | | | | | FRAME | | | | SPACE TYPE | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DOOR MARK | WIDTH | HEIGHT | TYPE | GLASS | FACING | RATING | MATERIAL | WIDTH | HEIGHT | TYPE | RATING | |
| 1 | 3'-0" PAIR | 7'-0" | FG | LOW-E SAFETY | ALUMINUM | --- | ALUMINUM | 6'-4" | 8'-6" | A | EXT. | |
| 2 | 3'-0" | 7'-0" | FG | LOW-E SAFETY | ALUMINUM | --- | ALUMINUM | 7'-9" | 8'-1" | B | EXT. | |
| 3 | 3'-0" | 7'-0" | FG | LOW-E SAFETY | ALUMINUM | --- | ALUMINUM | 4'-6" | 8'-1" | C | EXT. | |
| 4 | 3'-0" PAIR | 7'-4" | F2 | --- | GALV. HOLLOW METAL | --- | GALV. HOLLOW METAL | 6'-4" | 7'-8" | H | UTILITY | |
| 5 | 3'-0" | 7'-0" | 1/2L | LOW-E SAFETY | GALV. HOLLOW METAL | --- | GALV. HOLLOW METAL | 3'-4" | 7'-4" | F | EXT. | |
| 6 | 4'-0" | 8'-0" | S | --- | WIRE MESH | --- | STEEL | --- | --- | --- | EQUIP. STR | ELECTRIC SLIDING DOOR OPENER |
| 7 | 14'-0" | 14'-0" | OHD-1 | SAFETY | ALUMINUM | --- | ALUMINUM | --- | --- | --- | GARAGE | |
| 8 | 14'-0" | 14'-0" | OHD-2 | SAFETY | ALUMINUM | --- | ALUMINUM | --- | --- | --- | GARAGE | |
| 9 | 3'-0" | 7'-0" | NL | SAFETY | P.LAM | 20 MIN | HOLLOW METAL | 3'-4" | 7'-2" | E | OFFICE | |
| 10 | 3'-0" PAIR | 7'-0" | F | --- | P.LAM | 45 MIN | HOLLOW METAL | 6'-4" | 7'-2" | D | STORAGE | |
| 11 | 3'-0" | 7'-0" | NL | SAFETY | P.LAM | 20 MIN | HOLLOW METAL | 5'-0" | 7'-2" | G | EGRESS | |
| 12 | 3'-0" | 7'-0" | F | --- | P.LAM | --- | HOLLOW METAL | 3'-4" | 7'-2" | E | RR | |
| 13 | 3'-0" | 7'-0" | F | --- | P.LAM | 20 MIN | HOLLOW METAL | 3'-4" | 7'-2" | E | JANITOR | |
| 14 | 3'-0" | 7'-0" | SL | SAFETY | P.LAM | --- | --- | --- | --- | --- | KITCHEN | SLIDING BARN DOOR |
| 15 | 3'-0" | 7'-0" | NL | FIRE RATED | HOLLOW METAL | 90 MIN | HOLLOW METAL | 3'-4" | 7'-4" | F | 90. EGRESS | |
| 16 | 3'-0" | 7'-0" | F | FIRE RATED | HOLLOW METAL | 90 MIN | HOLLOW METAL | 3'-4" | 7'-4" | F | 90. JANITOR | |
| 17 | 3'-0" | 7'-0" | 1/2L | FIRE RATED | HOLLOW METAL | 90 MIN | HOLLOW METAL | 3'-4" | 7'-4" | F | 90. OFFICE | |
| 18 | 3'-0" | 7'-4" | F2 | --- | HOLLOW METAL | --- | HOLLOW METAL | 3'-4" | 7'-8" | I | RISER RM. | |

NOTE:
1. ALL EXTERIOR GLAZING SHALL BE TINTED LOW-E GLASS, UNLESS NOTED OTHERWISE
2. LOW-E GLAZING COLOR AND TYPE TO BE SELECTED BY ARCHITECT, AND REFERENCED TO SOLARBAN R-100 LINE IN PPG CATALOG
3. ALL EXTERIOR ALUMINUM FRAMES SHALL BE ANODIZED, COLOR TO BE SELECTED BY ARCHITECT
4. ALL FRAMES ARE TO RECEIVE ELASTOMERIC SEALANT ON THE EXTERIOR AND CAULKING ON THE INTERIOR.
5. ALL FRAMES ARE TO RECEIVE ASPHALTIC TAPE FLASHING, COMPATIBLE WITH SPECIFIED AIR WATER VAPOR BARRIER, INSTALLED PER MANUF. RECOMMENDATIONS.
6. ALUMINUM THRESHOLDS ARE REQUIRED AT ALL EXTERIOR DOORS.
7. SEE REFLECTED CEILING PLAN (SHEET 6.1 & 6.2) TO VERIFY WALLS REQUIRING RATED GLASS ASSEMBLIES
8. ALL ROUGH OPENINGS MUST BE FIELD VERIFIED PRIOR TO FABRICATION.
9. GENERAL CONTRACTOR MUST COORDINATE SIZE REQUIREMENTS OF ALL ROUGH OPENINGS WITH DOOR FRAME MANUFACTURER PRIOR TO ROUGH IN.
10. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO REVIEW THE PLANS AND WALL TYPE LEGEND TO VERIFY FRAME THICKNESS REQUIREMENTS PRIOR TO FABRICATION
11. SEE REFLECTED CEILING PLAN (SHEET 6.1 & 6.2) FOR RATED WALLS REQUIRING 20 AND 45 MINUTE FIRE RATED DOOR & FRAME ASSEMBLIES.

## GLAZING LEGEND

| | |
|---|---|
| | SAFETY GLASS |
| | RATED WIRE GLASS |
| | TINTED SAFETY GLASS |
| | LOW-E INSULATED GLASS |
| | INSULATED SPANDREL GLASS |
| | INSULATED SAFETY PRIVACY GLASS |

PROJECT #: 201310
DATE:
DRAWN BY:
CHECKED BY: H.R.G.
REVISION:
1:
2:
3:
4:

PROJECT: LINN - SAN MANUEL EMERGENCY SERVICES FACILITY PRECINCT NO. 4
OWNER: LINN-SAN MANUEL, TEXAS
HIDALGO COUNTY

REGISTERED ARCHITECT HECTOR RENE GARCIA 13961 STATE OF TEXAS
HECTOR R. GARCIA 13961
LICENSE EXPIRES 03/31/2014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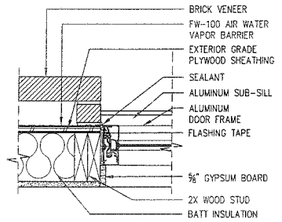
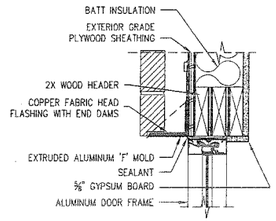
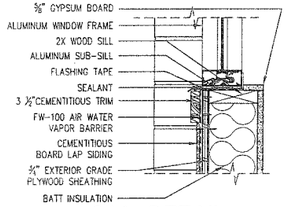
SHEET: 4.3




1 JAMB DETAIL
SCALE: 1-1/2"= 1'-0"




2 HEAD DETAIL
SCALE: 1-1/2"= 1'-0"




3 SILL DETAIL
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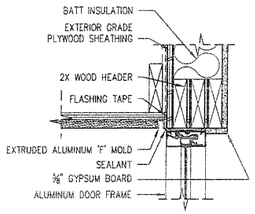
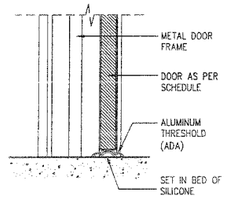
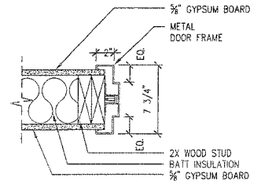


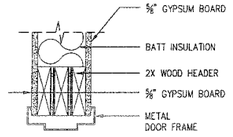

4 HEAD DETAIL
SCALE: 1-1/2"= 1'-0"



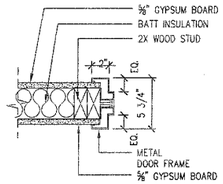

5 THRESHOLD
SCALE: 1-1/2"= 1'-0"



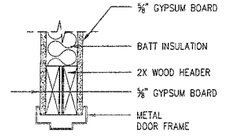

6 JAMB DETAIL
SCALE: 1-1/2"= 1'-0"
NOTE: HOLLOW METAL DOOR FRAME AT INTERIOR WALL



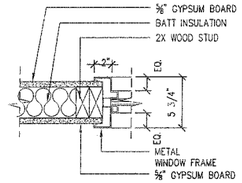

7 HEAD DETAIL
SCALE: 1-1/2"= 1'-0"
NOTE: HOLLOW METAL DOOR FRAME AT INTERIOR WALL



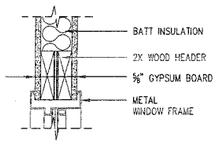

8 JAMB DETAIL
SCALE: 1-1/2"= 1'-0"
NOTE: HOLLOW METAL DOOR FRAME AT INTERIOR WALL



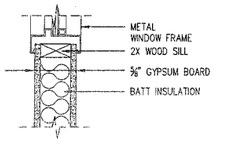

9 HEAD DETAIL
SCALE: 1-1/2"= 1'-0"
NOTE: HOLLOW METAL DOOR FRAME AT INTERIOR WALL



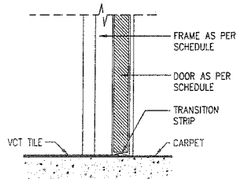

10 JAMB DETAIL
SCALE: 1-1/2"= 1'-0"



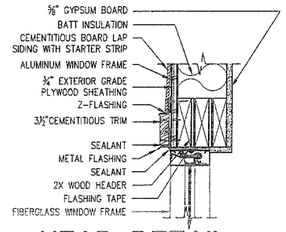

11 HEAD DETAIL
SCALE: 1-1/2"= 1'-0"



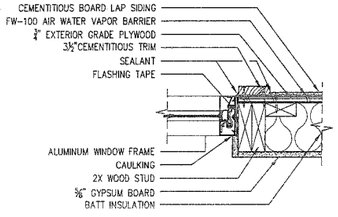

12 SILL DETAIL
SCALE: 1-1/2"= 1'-0"



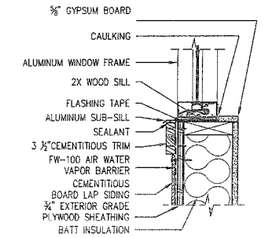

13 BASE DETAIL
SCALE: 1-1/2"= 1'-0"



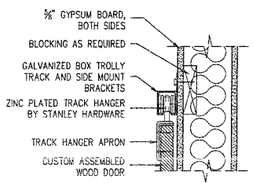

14 HEAD DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: ALUMINUM WINDOW AT FCP SIDING



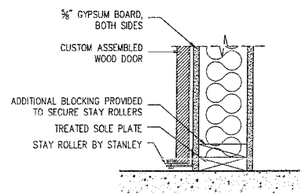

15 JAMB DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: ALUMINUM WINDOW AT FCP SIDING



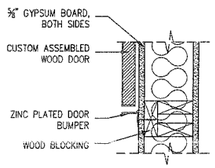

16 SILL DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: ALUMINUM WINDOW AT FCP SIDING



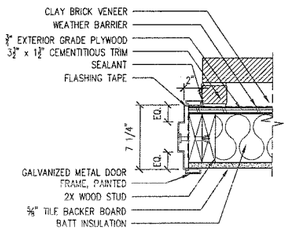

17 HEAD DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: HEAD DETAIL AT BARN DOOR



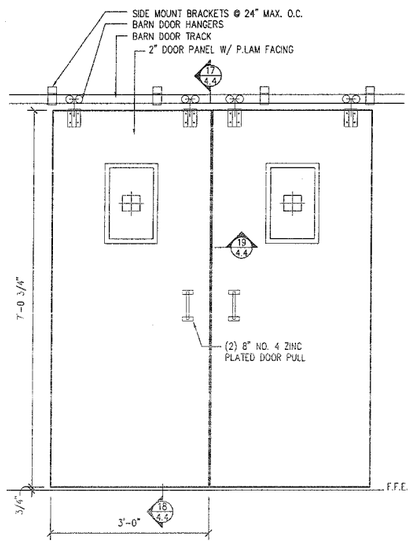

18 BASE DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: BASE DETAIL AT BARN DOOR



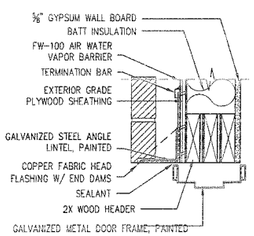

19 JAMB DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: JAMB DETAIL AT BARN DOOR



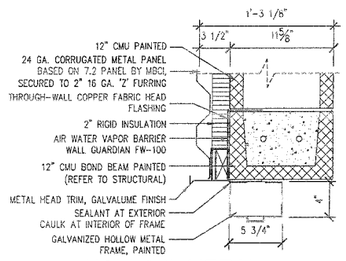

20 JAMB DETAIL
SCALE: 1-1/2"= 1'-0"
NOTE: EXT. H.M. DOOR FRAME AT BRICK VENEER



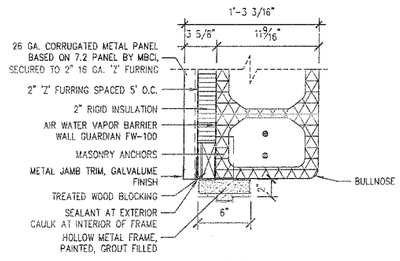

REF:
25 ROLLING BARN DOOR ELEVATION
SCALE: 3/4"=1'-0"



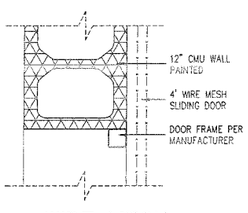

21 HEAD DETAIL
SCALE: 1-1/2"= 1'-0"
NOTE: EXT. H.M. DOOR FRAME AT BRICK VENEER




HOLLOW METAL DOOR HEAD DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: EXT. H.M. DOOR FRAME AT METAL PANEL




HOLLOW METAL DOOR JAMB DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: EXT. H.M. DOOR FRAME AT METAL PANEL




WIRE MESH DOOR JAMB DETAIL
SCALE: 1-1/2"=1'-0"
NOTE: JAMB DETAIL AT WIRE MESH DOOR

PROJECT #: 201310
DATE:
DRAWN BY:
CHECKED BY: H.R.G.
REVISION: 1: 2: 3: 4:

LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT: LINN-SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

HECTOR RENE GARCIA 13960 LICENSED ARCHITECT
HECTOR R. GARCIA
LICENSE EXPIRES 03/31/2014

Mata & Garcia
ARCHITECTS LLP
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interior design
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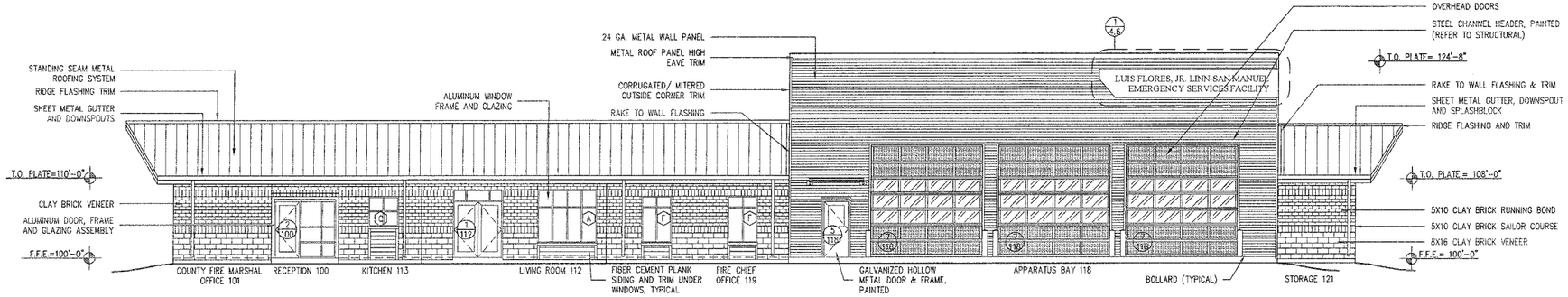
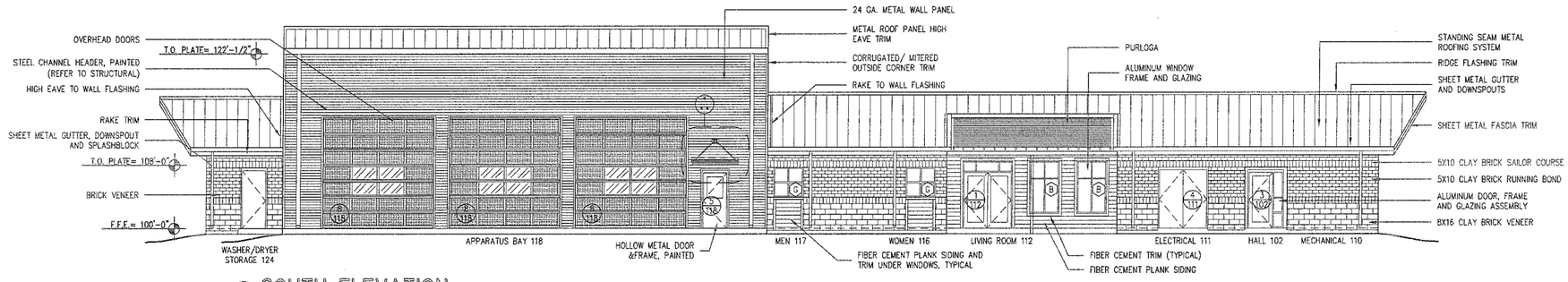
SHEET: 4.4




## 1 NORTH ELEVATION

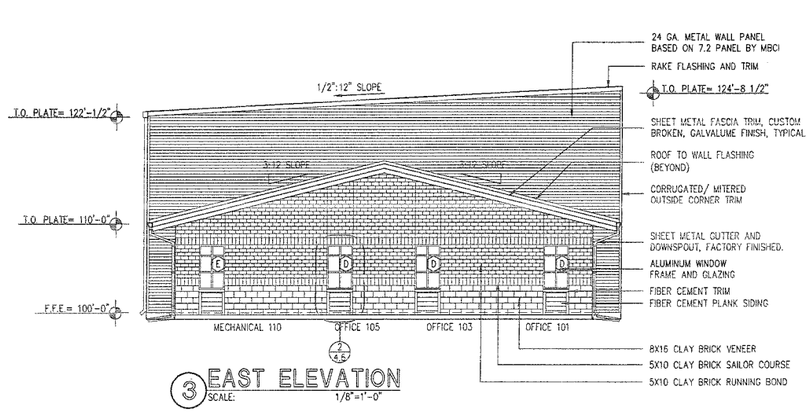
SCALE: 1/8"=1'-0"

NOTE: WALKWAY CANOPY NOT SHOWN FOR CLARITY.



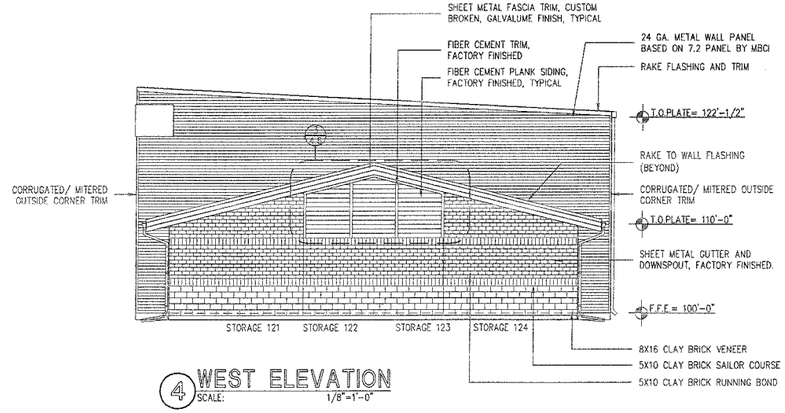

## 2 SOUTH ELEVATION

SCALE: 1/8"=1'-0"




## 3 EAST ELEVATION

SCALE: 1/8"=1'-0"




## 4 WEST ELEVATION

SCALE: 1/8"=1'-0"

PROJECT #: 20130
DATE:
DRAWN BY:
CHECKED BY: H.R.G.
REVISION:
1:
2:
3:
4:

LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT: LINN-SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

HECTOR R. GARCIA 13962
LICENSE EXPIRES: 03/31/2014

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project management
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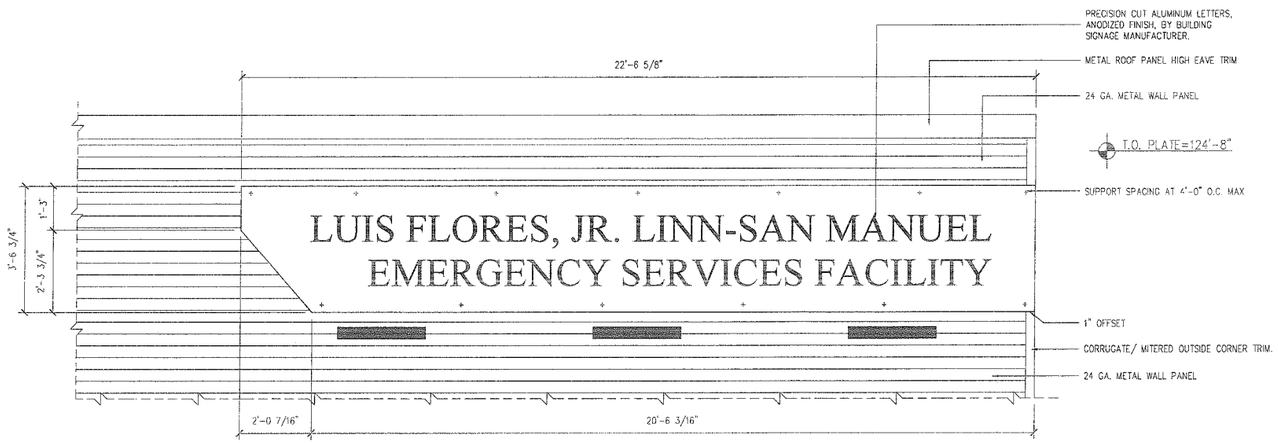
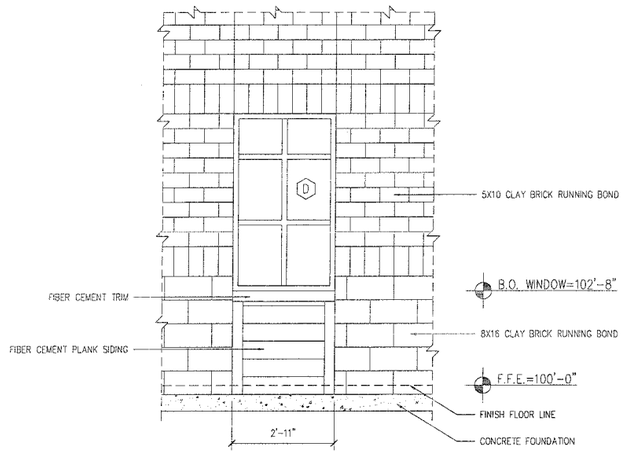
1314 West Ivy Avenue McAllen, Texas 78501
Tel: (956) 631-6945
Fax: (956) 631-6948

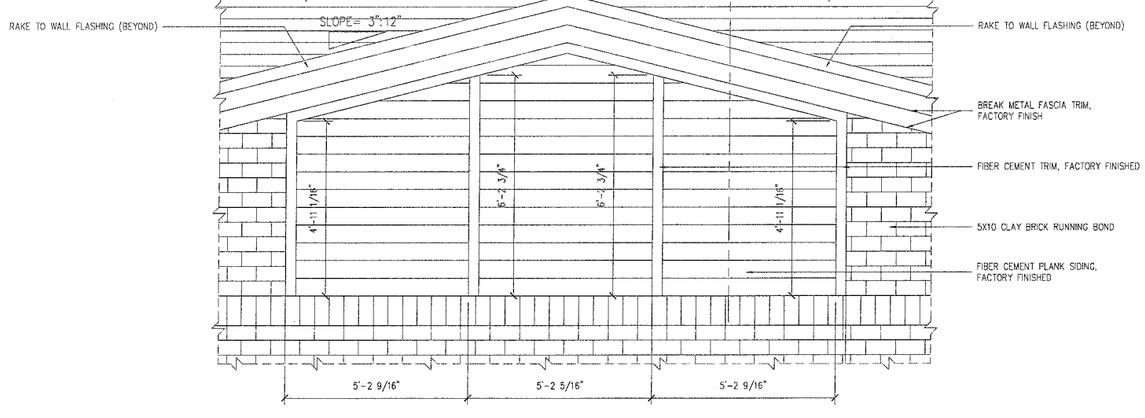
SHEET: 4.5



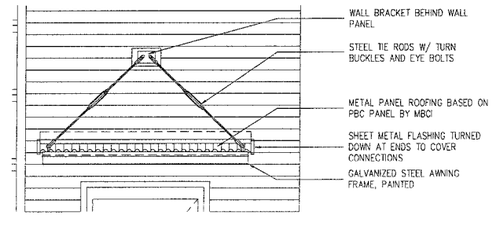

1 BUILDING SIGNAGE
SCALE: 1/2"=1'-0"




2 OFFICE 105 EAST ELEVATION WINDOW
SCALE: 1/2"=1'-0"




3 WEST ELEVATION GABLE DETAIL
SCALE: 1/2"=1'-0"




4 AWNING ELEVATION DETAIL
SCALE: 1/2"=1'-0"

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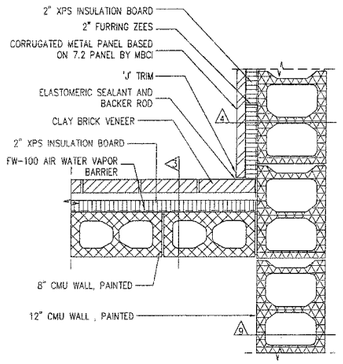
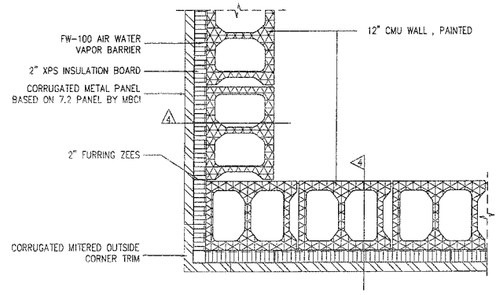
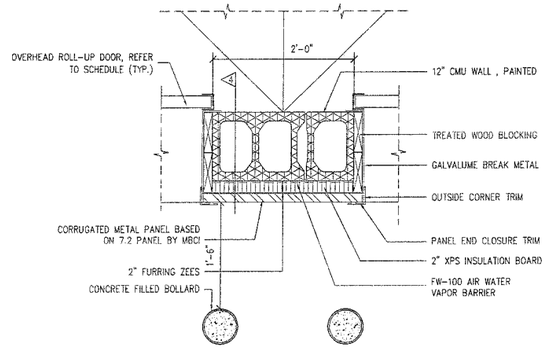
SHEET: 46



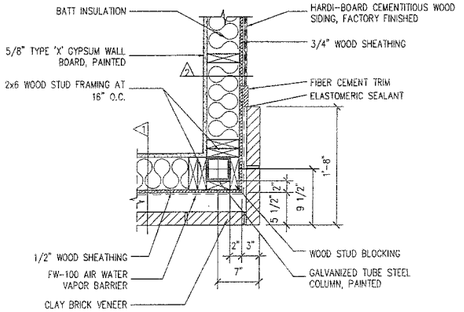

RE: 1 PLAN DETAIL SCALE: 1/2"=1'-0"



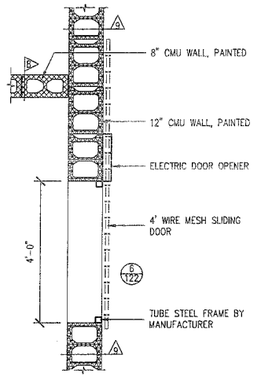

RE: 2 PLAN DETAIL SCALE: 1/2"=1'-0"



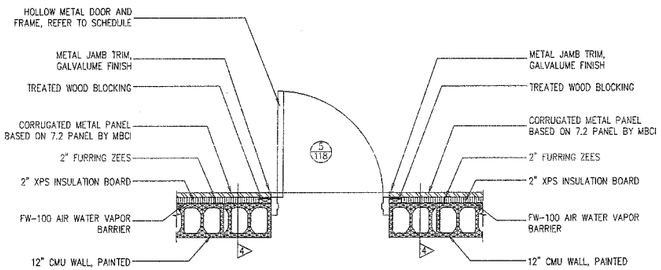

RE: 3 PLAN DETAIL SCALE: 1/2"=1'-0"



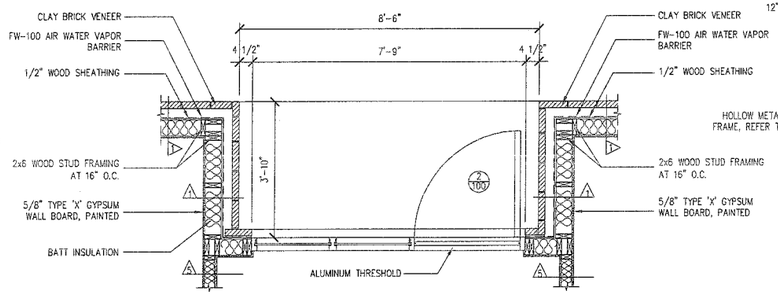

RE: 4 PLAN DETAIL SCALE: 1/2"=1'-0"



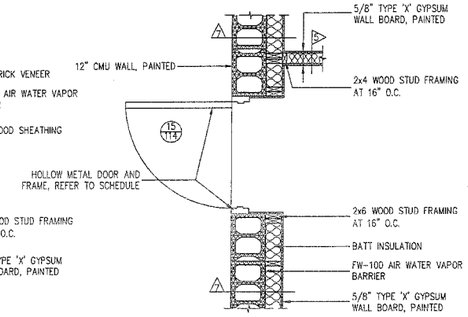

RE: 5 PLAN DETAIL SCALE: 1/2"=1'-0"



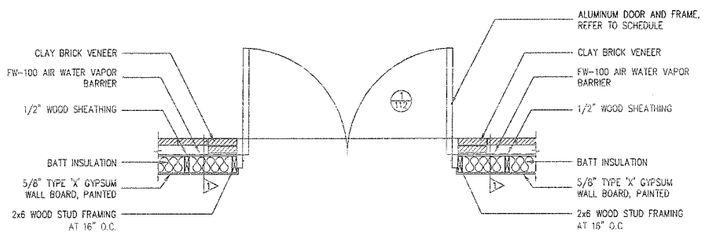

RE: 6 PLAN DETAIL SCALE: 1/2"=1'-0"



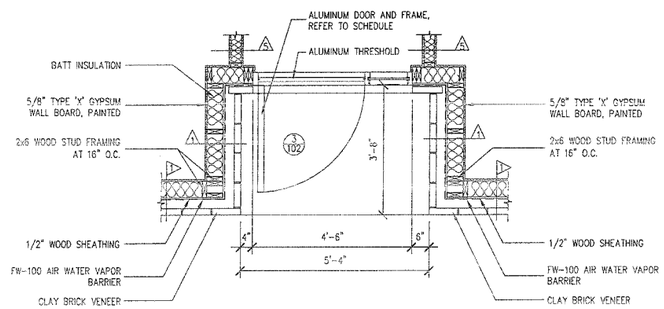

RE: 7 PLAN DETAIL SCALE: 1/2"=1'-0"



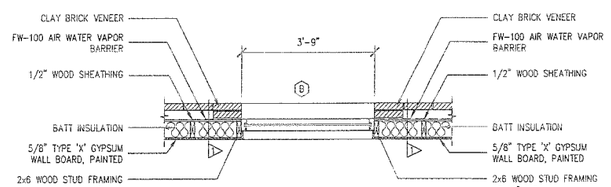

RE: 8 PLAN DETAIL SCALE: 1/2"=1'-0"




RE: 9 PLAN DETAIL SCALE: 1/2"=1'-0"




RE: 10 PLAN DETAIL SCALE: 1/2"=1'-0"




RE: 11 PLAN DETAIL SCALE: 1/2"=1'-0"

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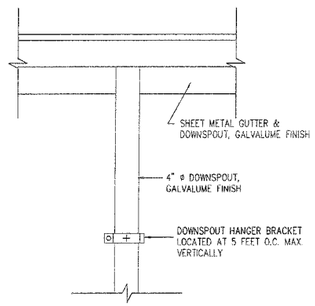
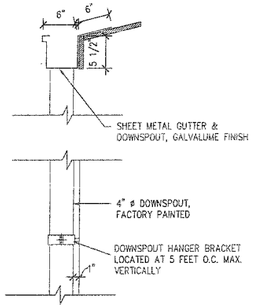
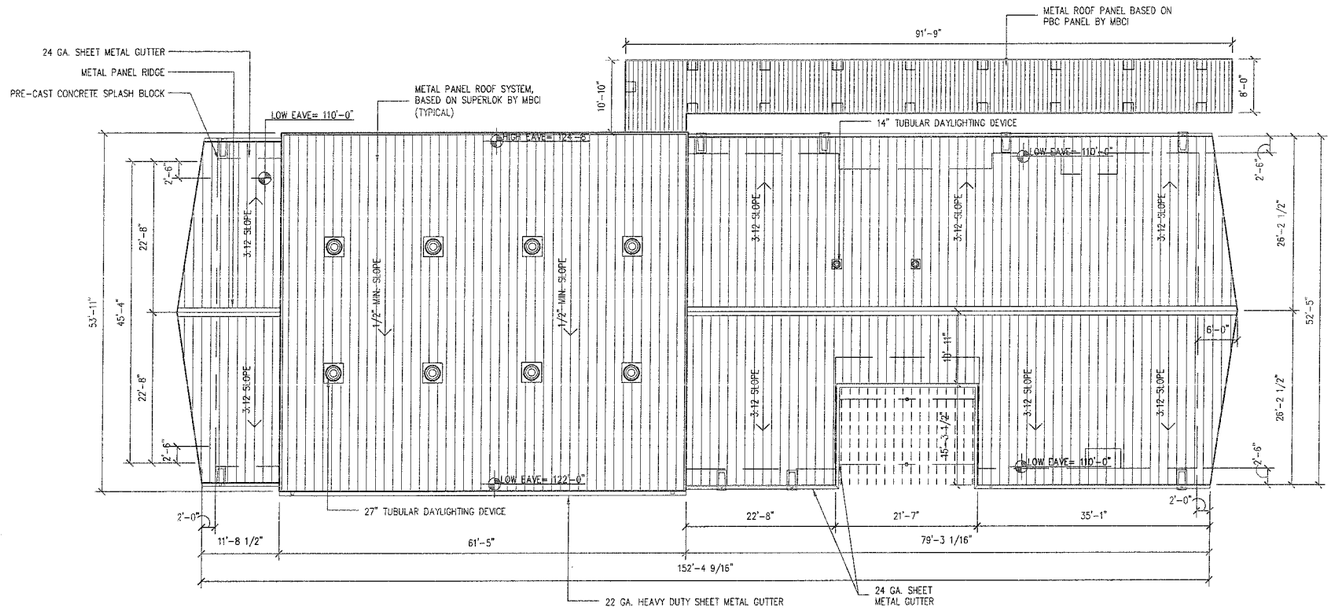
SHEET: 4.7




RE: GUTTER & LEADER HEAD
2 SCALE: 1"=1'-0"



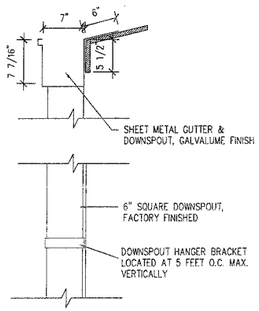

RE: GUTTER & LEADER HEAD SECTION
3 SCALE: 1"=1'-0"



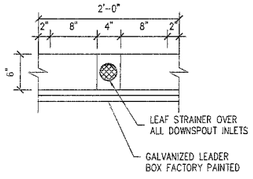

1 SCALE: 1/8"=1'-0"

## ROOF PLAN

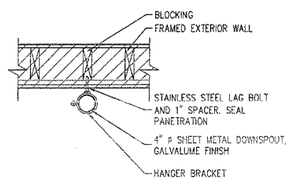
GENERAL NOTES:
1. WOOD PURLIN MEMBERS AT PERGOLA NOTE SHOWN FOR CLARITY.



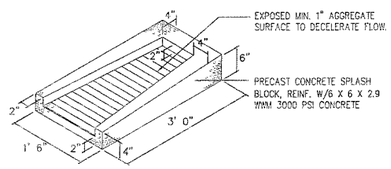

RE: GUTTER & LEADER HEAD SECTION
4 SCALE: 1"=1'-0"



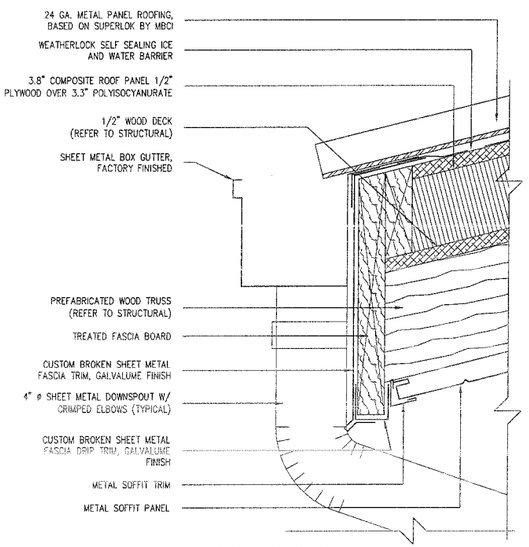

RE: PLAN GUTTER INLET AT DOWNSPOUT
5 SCALE: 1"=1'-0"




RE: PLAN DOWNSPOUT
6 SCALE: 1"=1'-0"

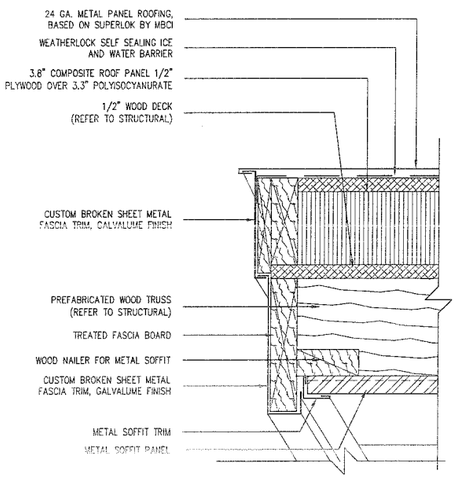



RE: SQUARE PRECAST SPLASHBLOCK ISOMETRIC
7 SCALE: 1"=1'-0"




RE: 1/5.10, 1/5.5, 1/5.4
8 SCALE: 3"=1'-0"

## SECTION DETAIL AT LOW EAVE & GUTTER




RE: 1/5.11, 9/5.10, 2/5.7, 3/5.8
9 SCALE: 3"=1'-0"

## SECTION DETAIL AT ROOF RAKE AND TRIM

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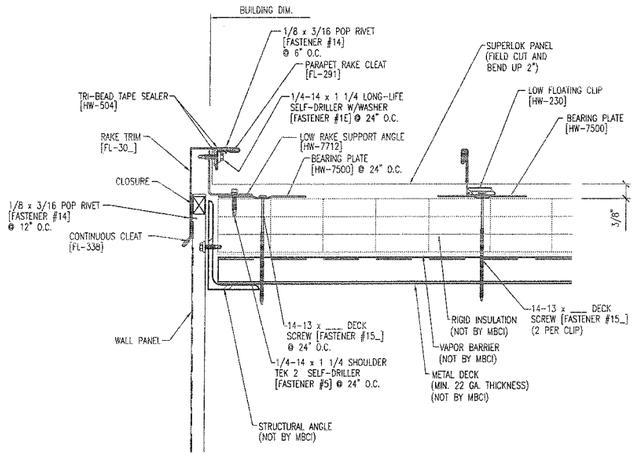
SHEET: 5.1

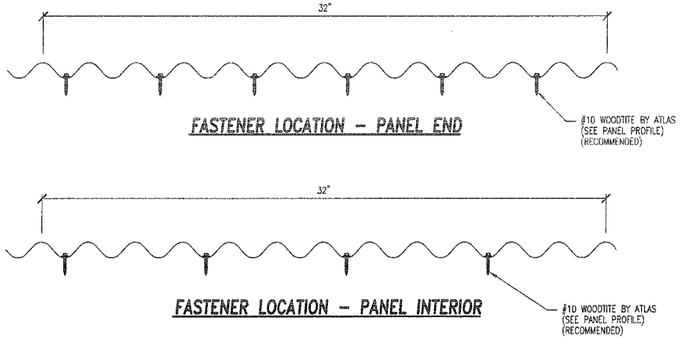



RE: 1/5.1

## 1 RAKE DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.




FASTENER LOCATION - PANEL END

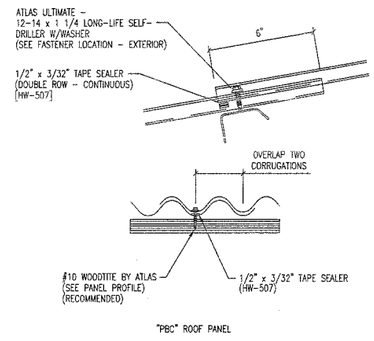
FASTENER LOCATION - PANEL INTERIOR

RE: 1/5.1

## 2 PANEL FASTENER DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI PBC PANEL, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.




RE: 1/5.1

## 3 PANEL LAPPING DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI PBC PANEL, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.

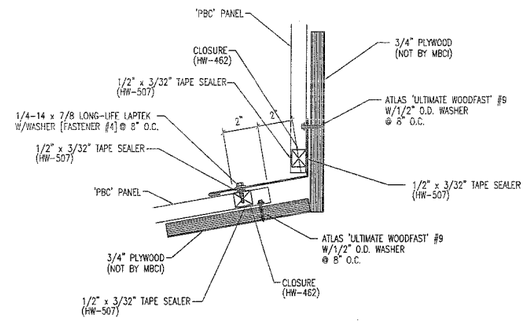



RE: 1/5.1

## 4 LOW EAVE DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI PBC PANEL, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.

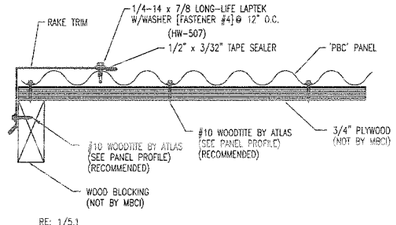



RE: 1/5.1

## 5 HIGH EAVE TO WALL DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI PBC PANEL, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.

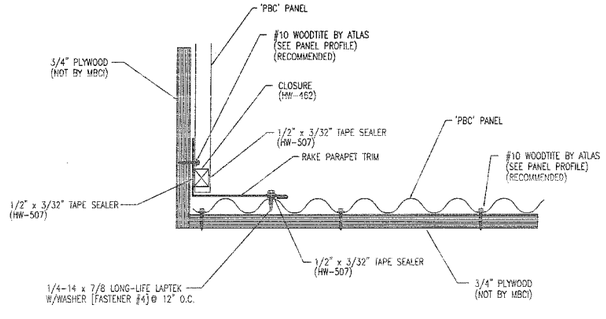



RE: 1/5.1

## 6 RAKE DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI PBC PANEL, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.




RE: 1/5.1

## 7 RAKE TO WALL DETAIL

SCALE: 3"=1'-0"

NOTE: BASED ON MBCI PBC PANEL, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.

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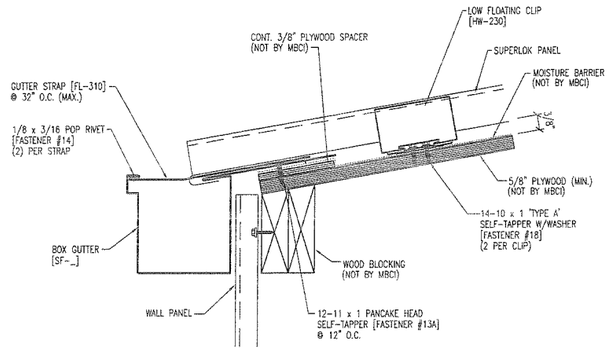
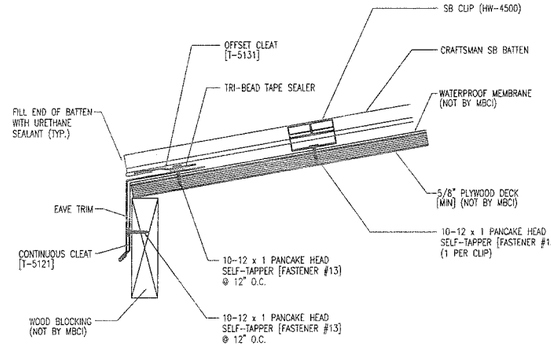
SHEET: 5.3



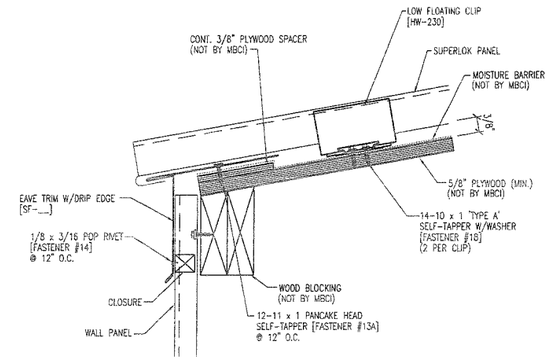

RE: 1/5.1
## 1 EAVE & GUTTER
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.



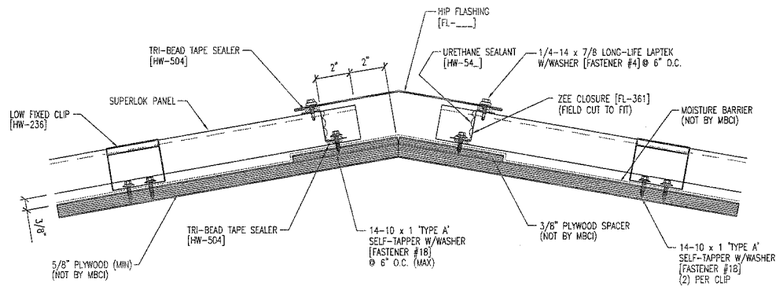

RE: 1/5.1
## 2 EAVE & FASCIA TRIM
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.



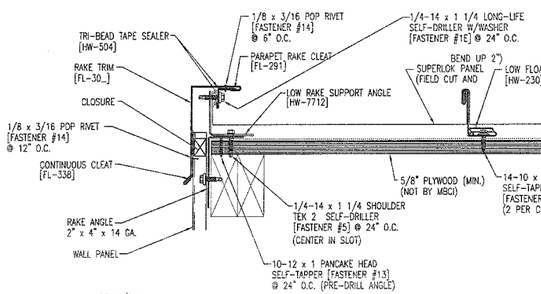

RE: 1/5.1
## 3 EAVE & FASCIA TRIM
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.



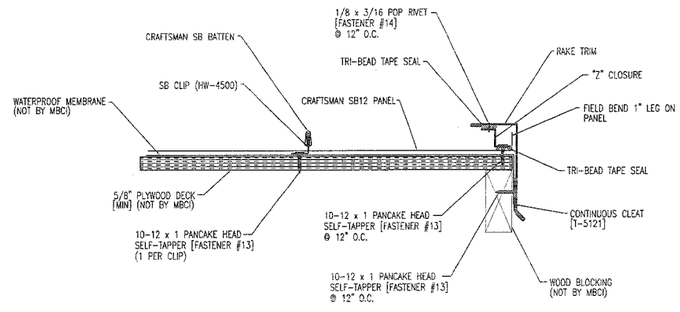

RE: 1/5.1
## 4 ROOF RIDGE
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.



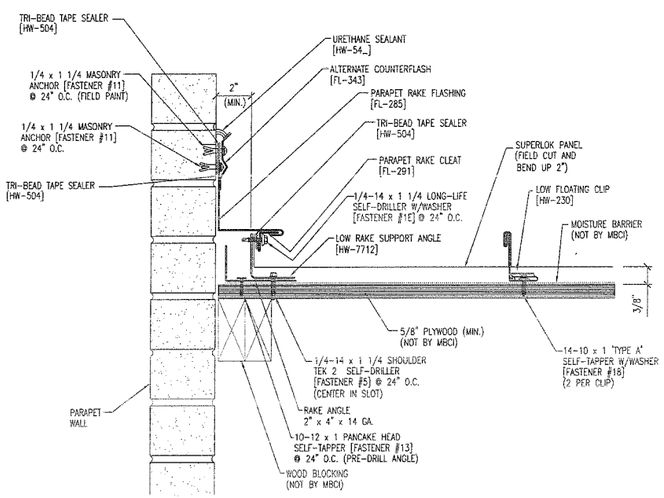

RE: 1/5.1
## 5 RAKE TRIM ON MODULE
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.



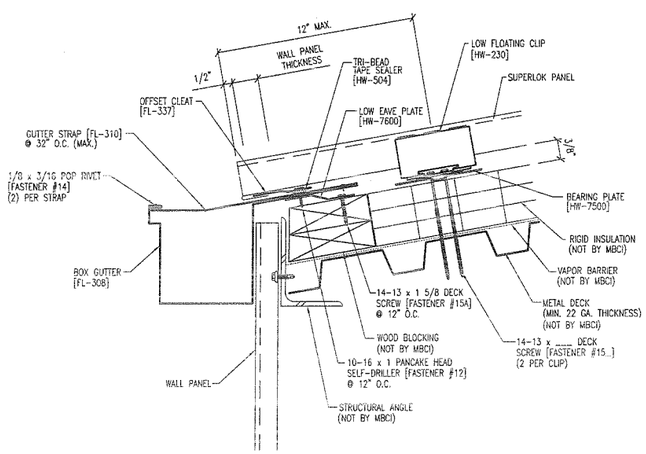

RE: 1/5.1
## 6 RAKE TRIM OFF MODULE
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.



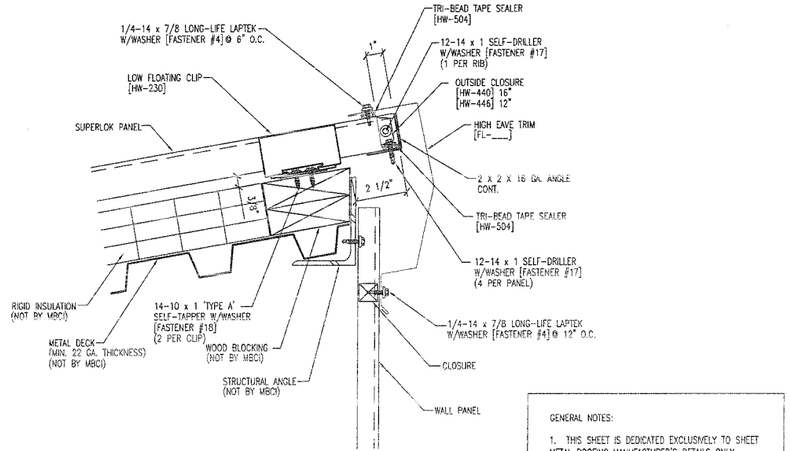

RE: 1/5.1
## 7 RAKE TO WALL FLASHING & TRIM
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.




RE: 1/5.1
## 8 LOW EAVE W/ GUTTER
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.




RE: 1/5.1
## 9 HIGH EAVE
SCALE: 3"=1'-0"

NOTE: BASED ON MBCI SUPERLOK, SUBSTITUTIONS MUST BE APPROVED BY ARCHITECT PRIOR TO BID.

GENERAL NOTES:

1. THIS SHEET IS DEDICATED EXCLUSIVELY TO SHEET METAL ROOFING MANUFACTURER'S DETAILS ONLY. ACTUAL TERMINATION CONDITIONS VARY DEPENDING ON ARCHITECTURAL REQUIREMENTS.

2. ALL PLANS SECTIONS AND DETAILS MUST BE REFERENCED BEFORE BIDDING, AND ALL TRADES SHOULD BE COORDINATED.

3. ALL FIELD CONDITIONS MUST BE VERIFIED PRIOR TO MANUFACTURE

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PROJECT: LINN - SAN MANUEL EMERGENCY SERVICES FACILITY PRECINCT NO. 4
OWNER: LINN-SAN MANUEL, TEXAS
HIDALGO COUNTY

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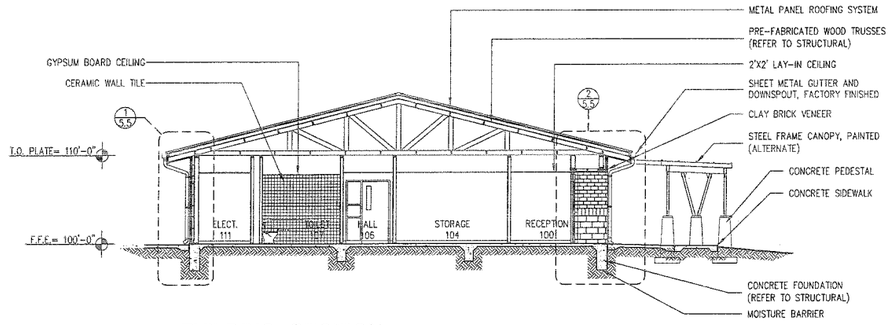
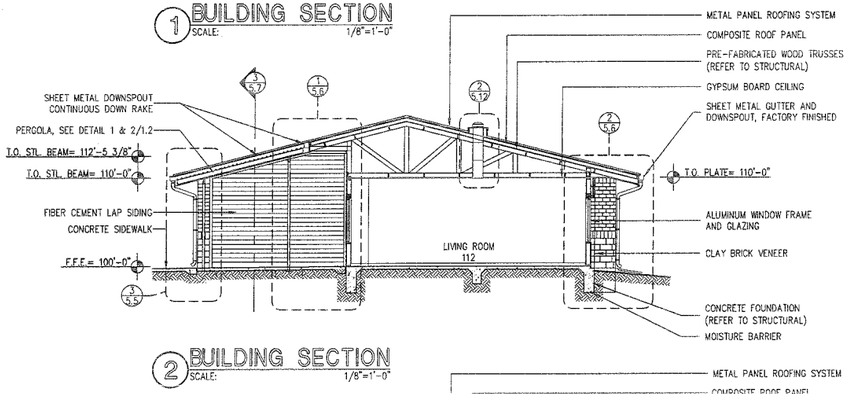
SHEET: 5.2




1 BUILDING SECTION
SCALE: 1/8"=1'-0"

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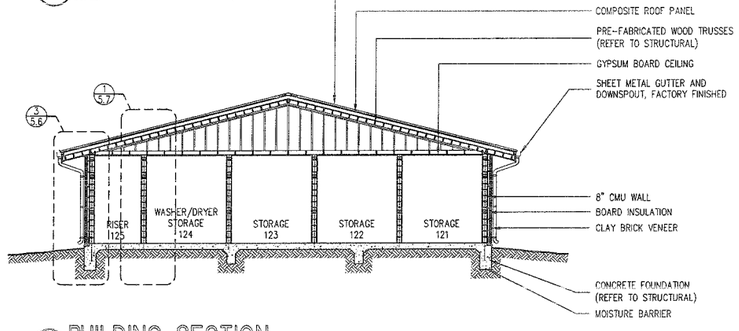


3 BUILDING SECTION
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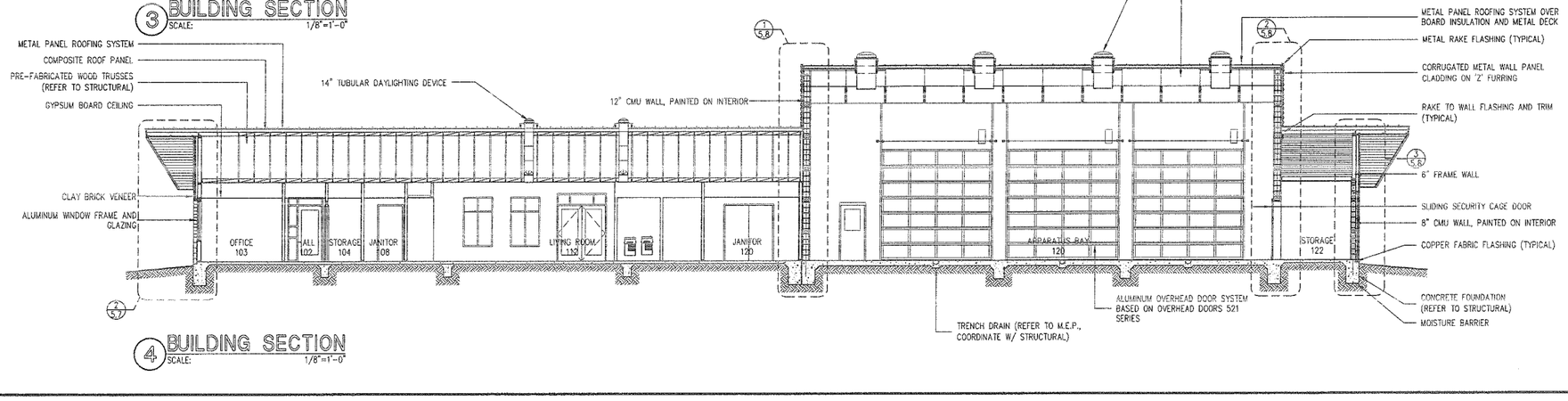


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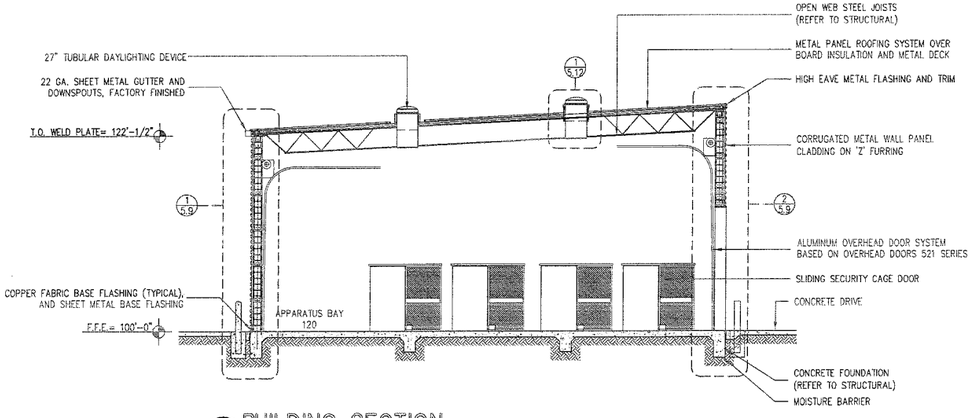


5 BUILDING SECTION
SCALE: 1/8"=1'-0"

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LINN - SAN MANUEL
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PRECINCT NO. 4

PROJECT : LINN-SAN MANUEL, TEXAS
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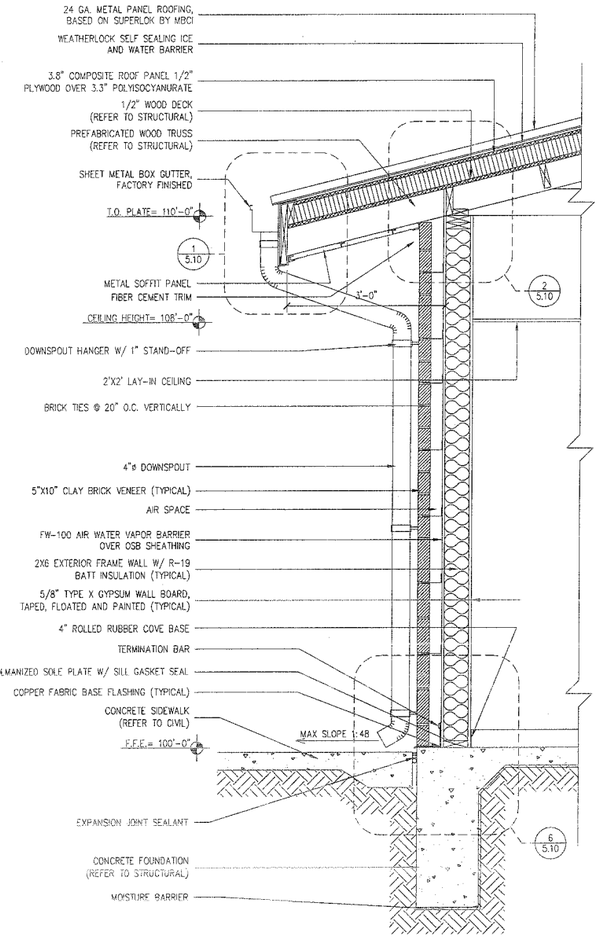
SHEET: 5.4




REF: 1/5.4
1 WALL SECTION
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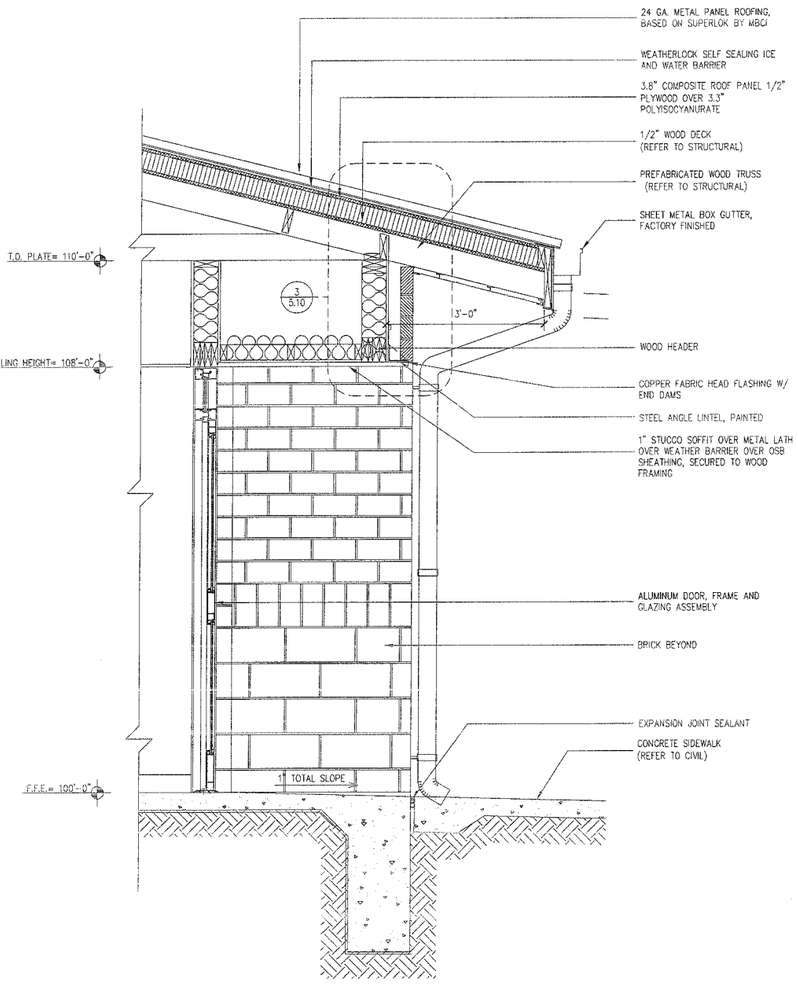


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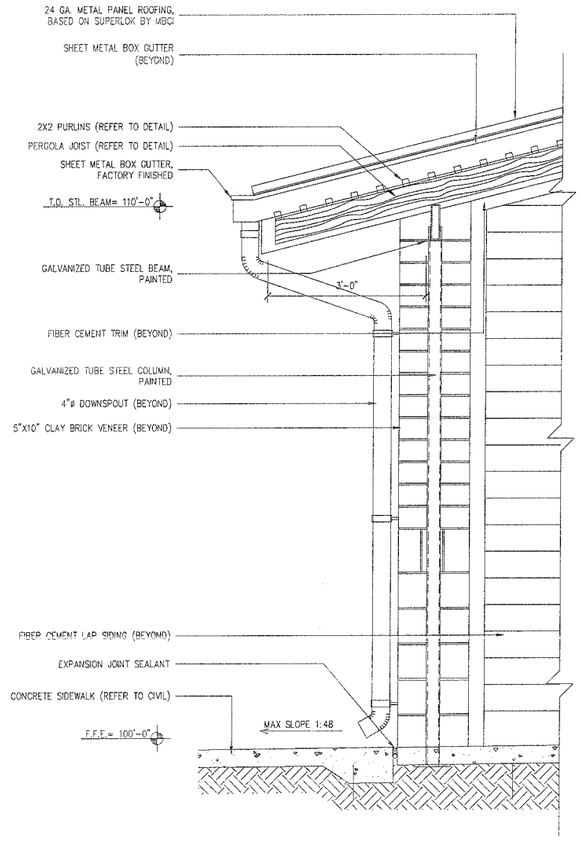


REF: 2/5.4
3 WALL SECTION
SCALE: 3/4"=1'-0"

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LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN-SAN MANUEL, TEXAS
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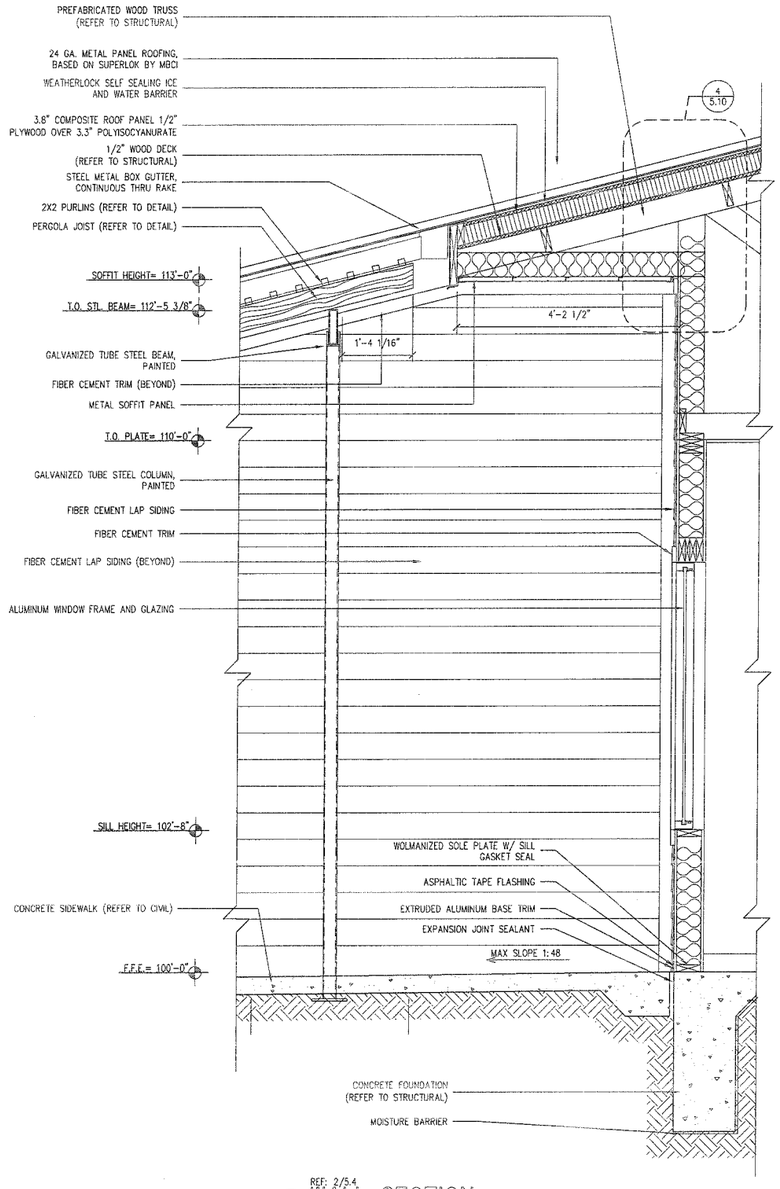
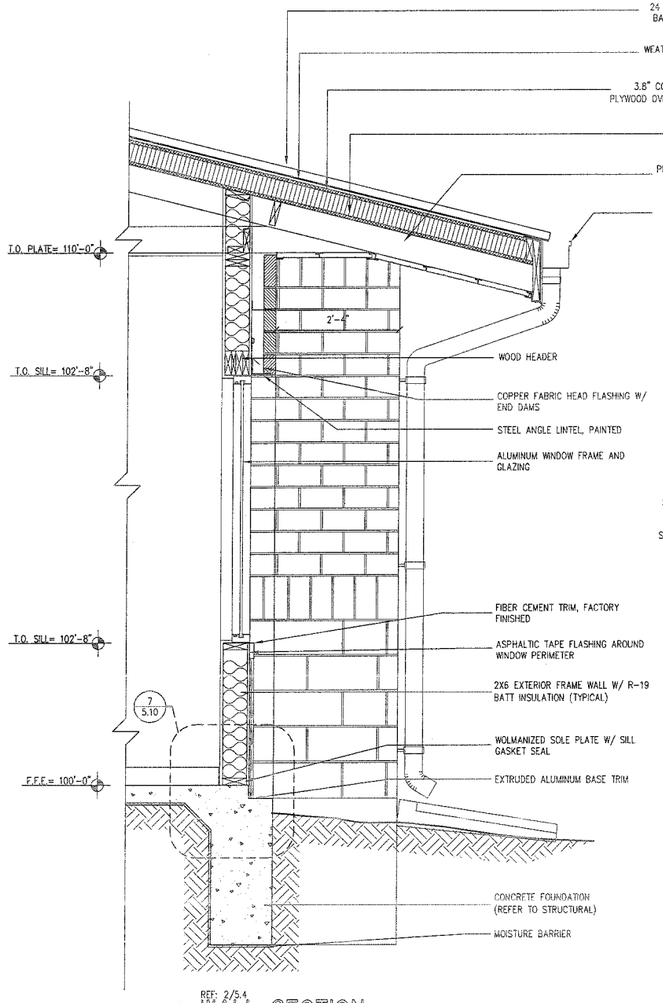
SHEET:
5.5




1 REF: 2/5.4 WALL SECTION
SCALE: 3/4"=1'-0"

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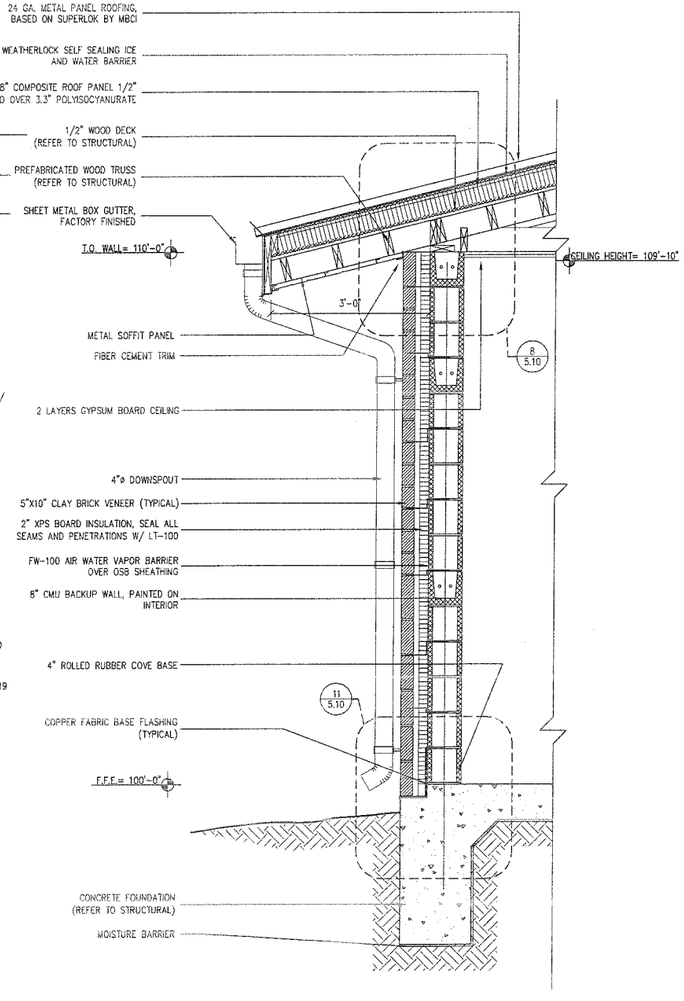


3 REF: 3/5.4 WALL SECTION
SCALE: 3/4"=1'-0"

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# LINN - SAN MANUEL EMERGENCY SERVICES FACILITY PRECINCT NO. 4

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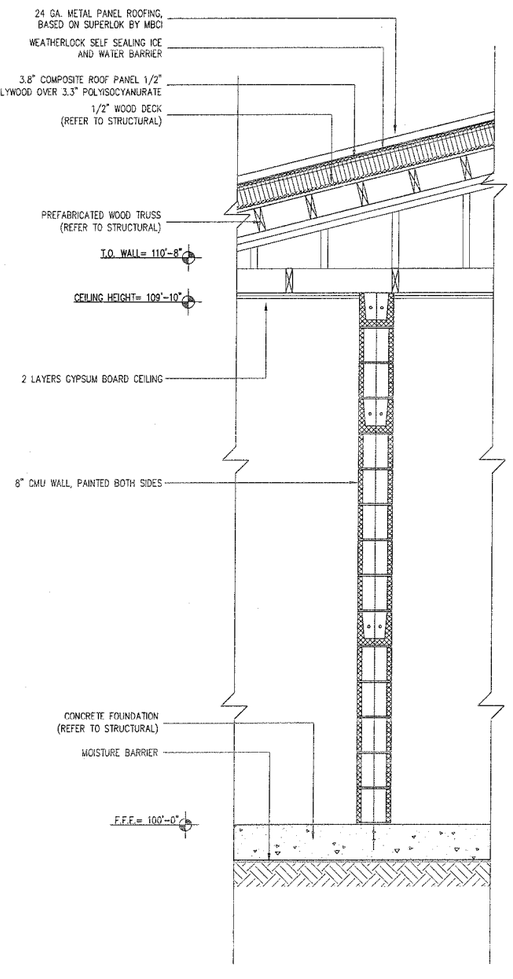


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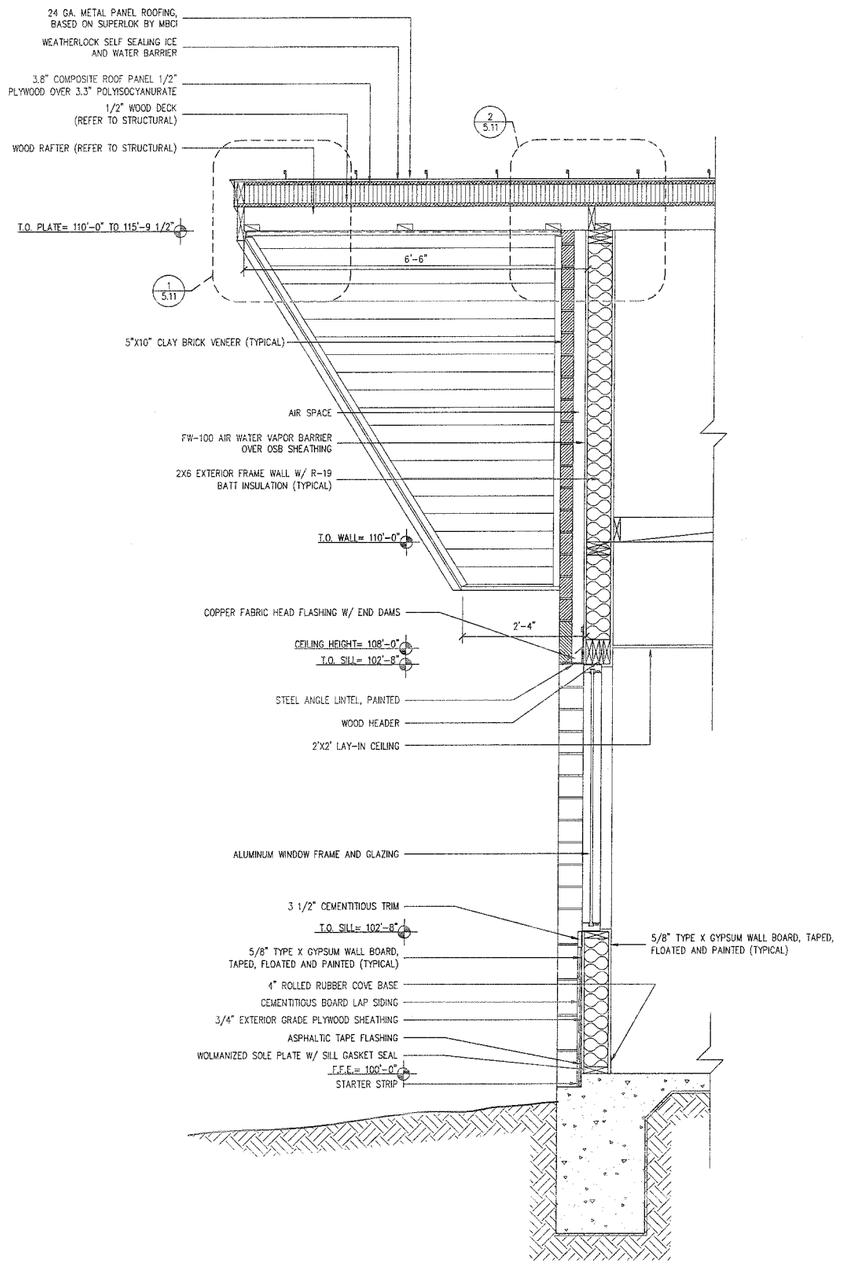
SCALE: 3/4"=1'-0"

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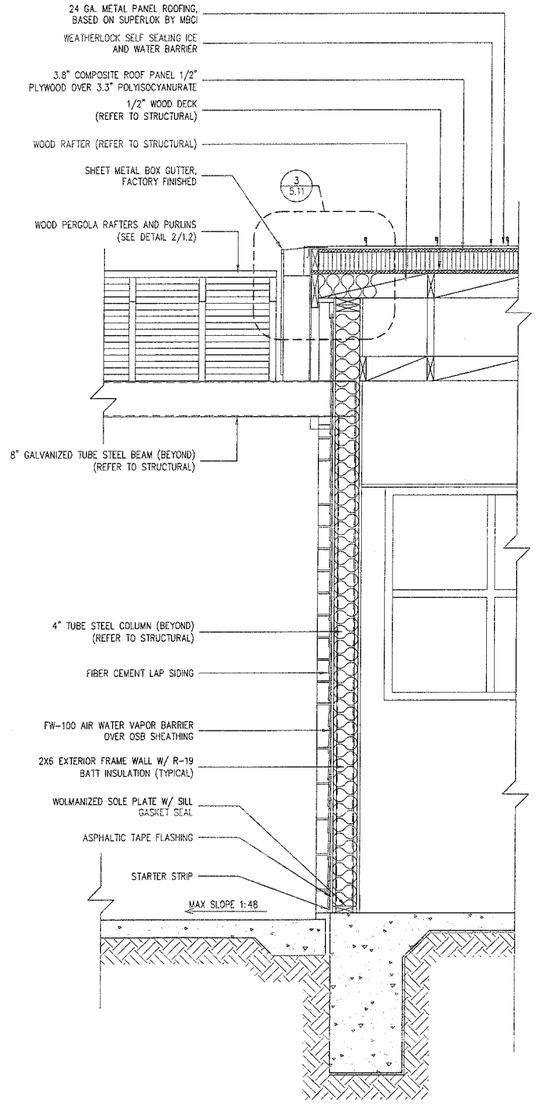
2 WALL SECTION
SCALE: 3/4"=1'-0"




REF: 1/6.1
3 WALL SECTION
SCALE: 3/4"=1'-0"

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LINN - SAN MANUEL
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PROJECT : LINN-SAN MANUEL, TEXAS
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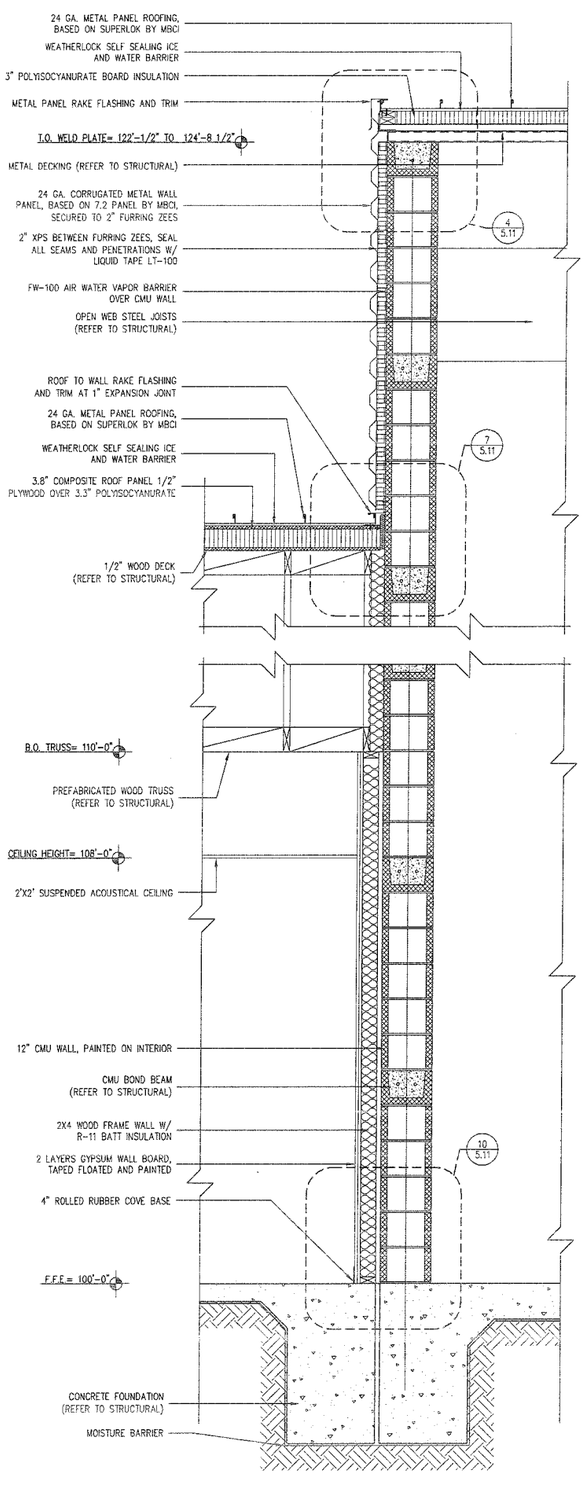


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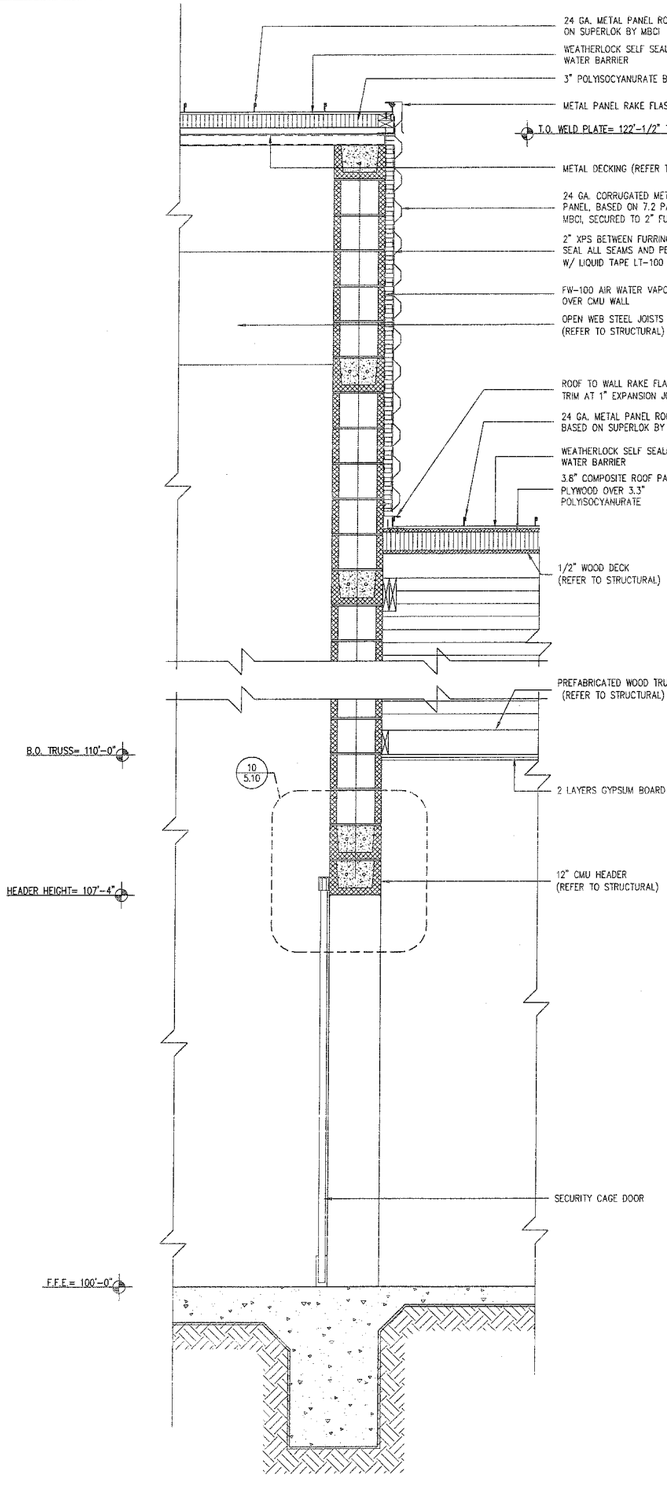


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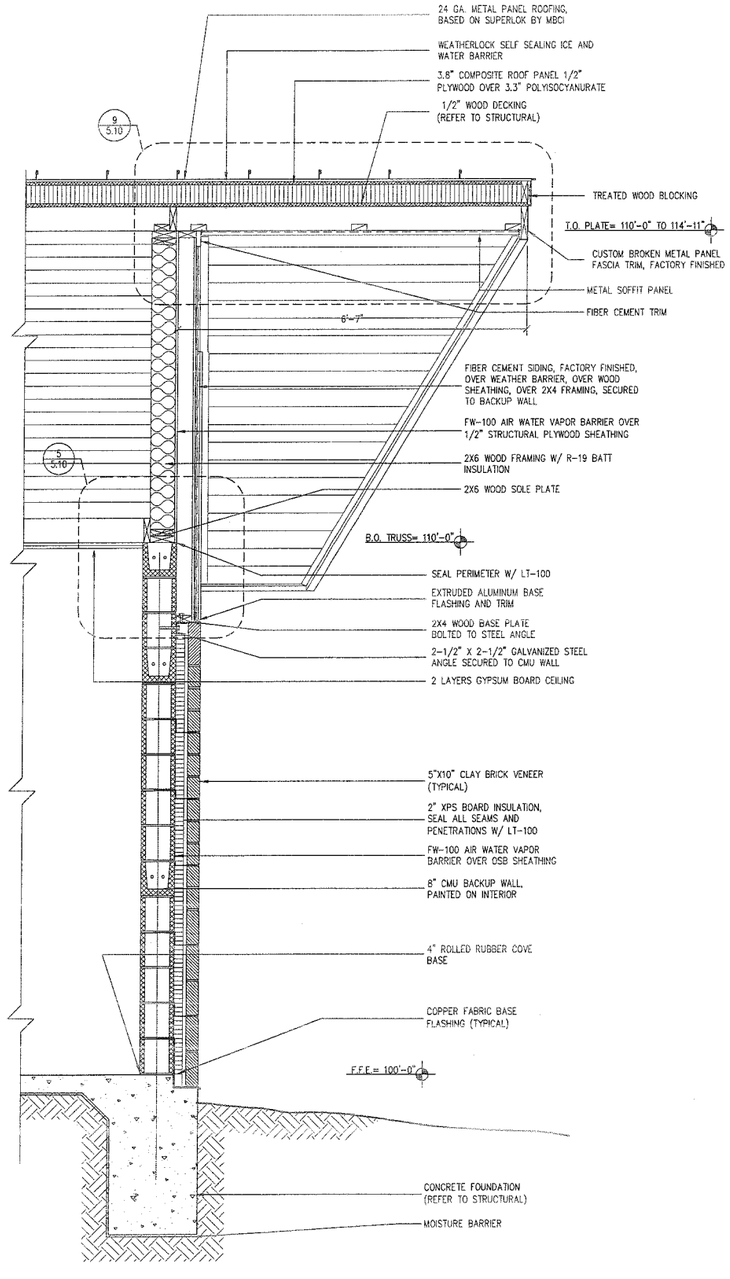


REF: 4/5.4
## 3 WALL SECTION
SCALE: 3/4"=1'-0"

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LINN - SAN MANUEL
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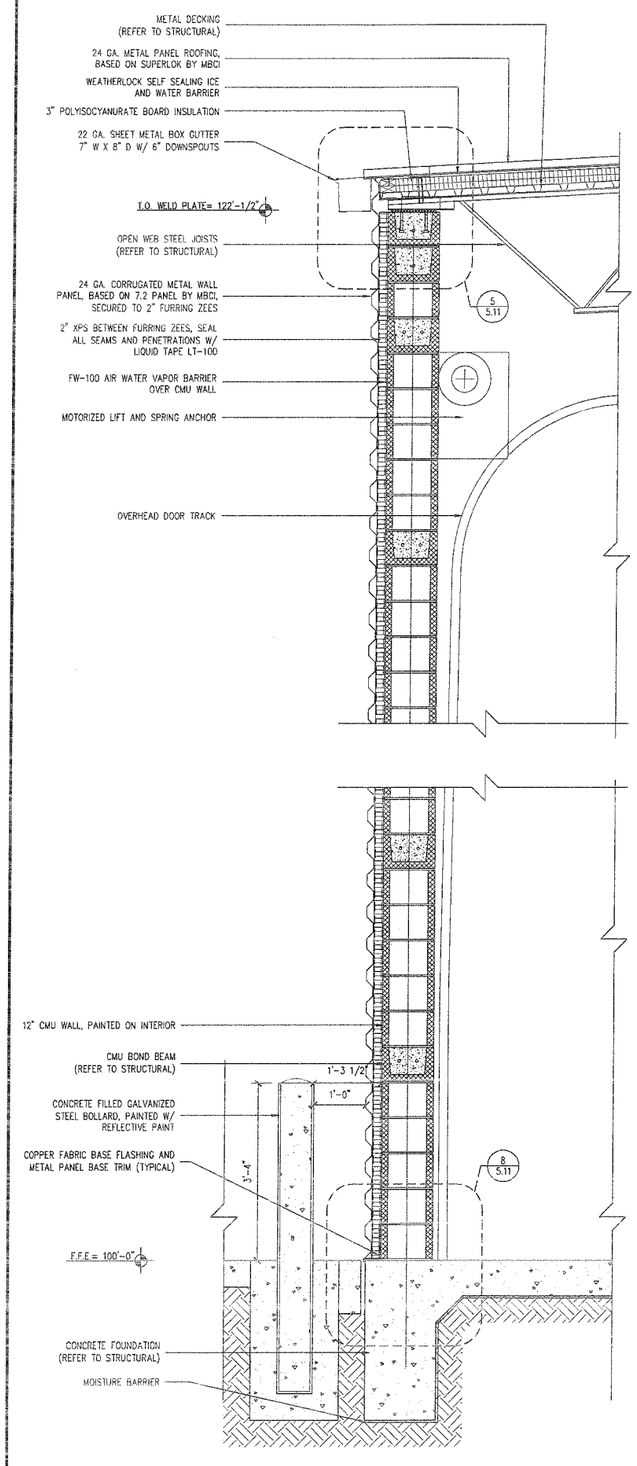


REF: 5/5.4
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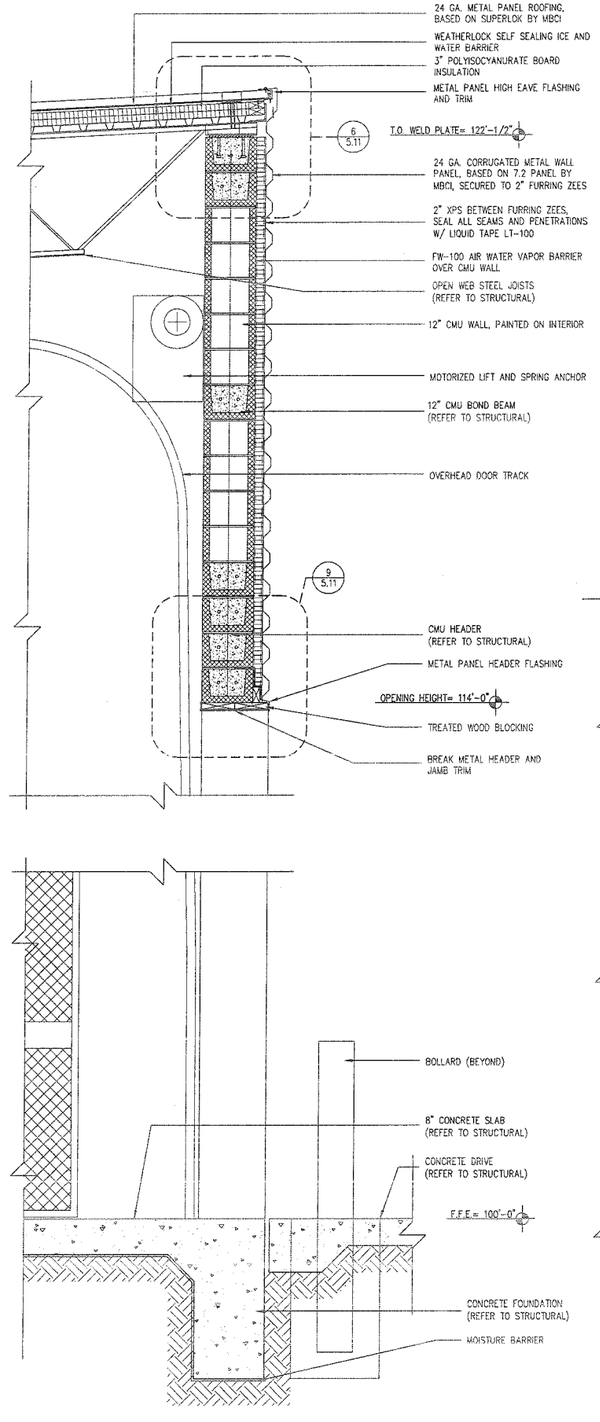
SCALE: 3/4"=1'-0"

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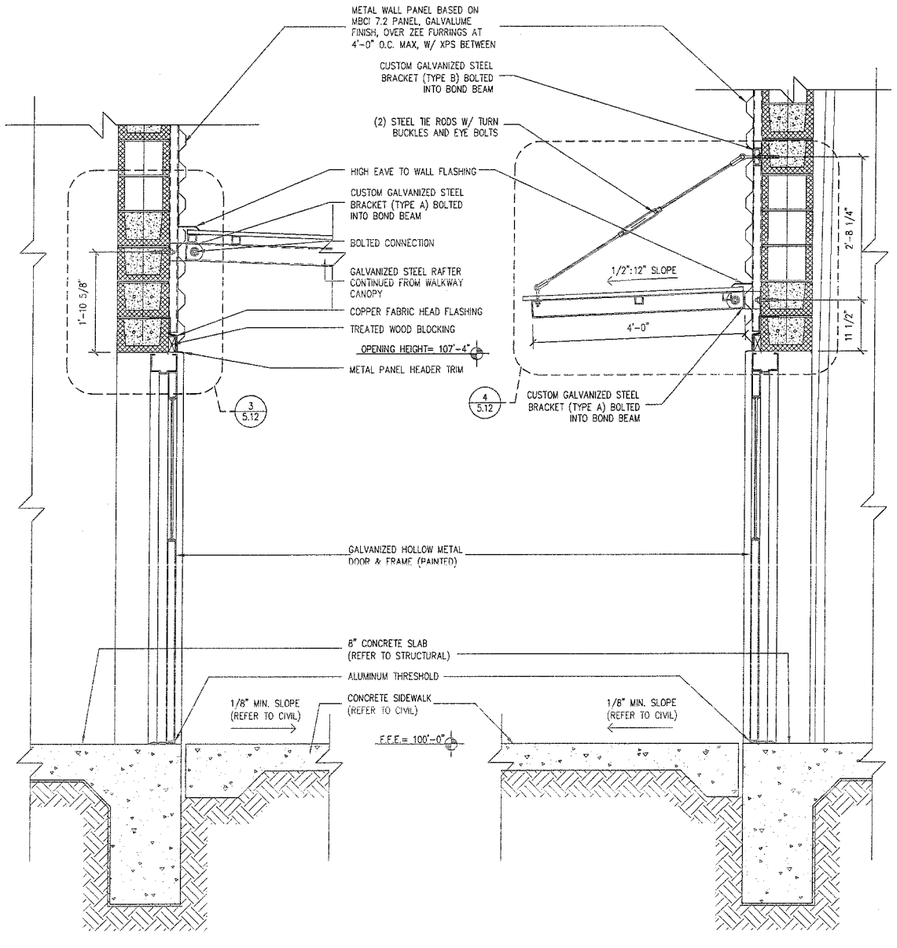


REF: 1/4.1
## 3 WALL SECTION
SCALE: 3/4"=1'-0"




REF: 1/4.1
## 4 WALL SECTION
SCALE: 3/4"=1'-0"

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LINN - SAN MANUEL
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PRECINCT NO. 4

PROJECT : LINN-SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

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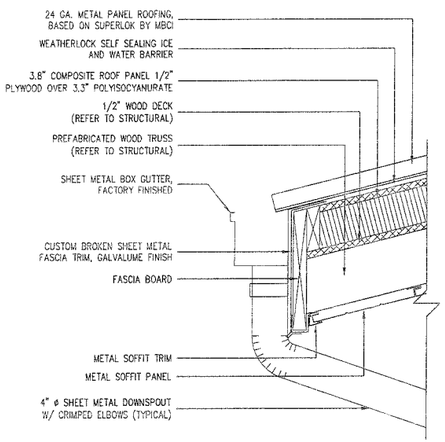


REF: 1/5.5
1 SECTION DETAIL
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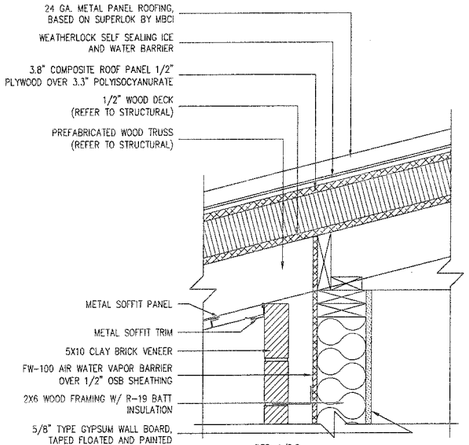


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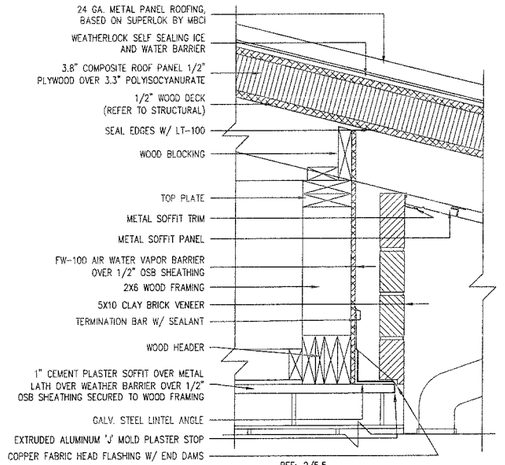


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3 SECTION DETAIL
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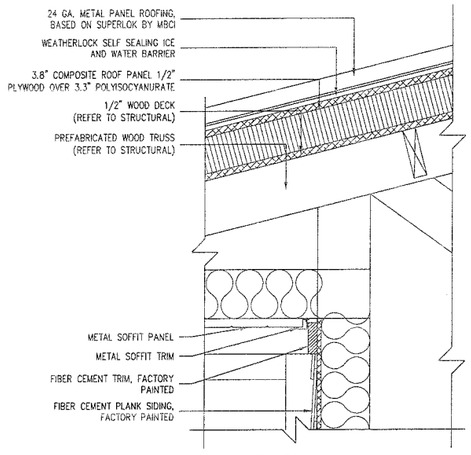


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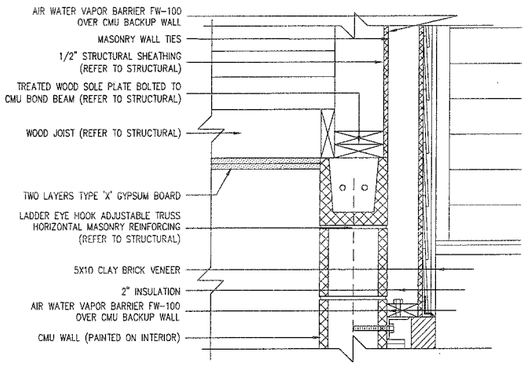


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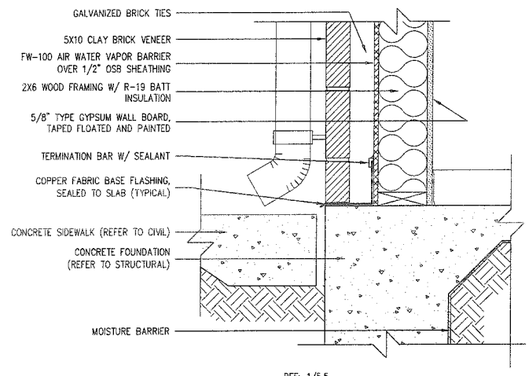


REF: 1/5.5
6 SECTION DETAIL
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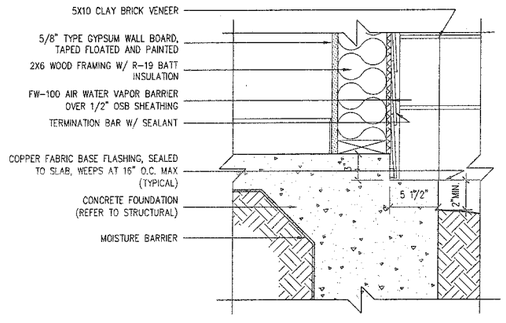


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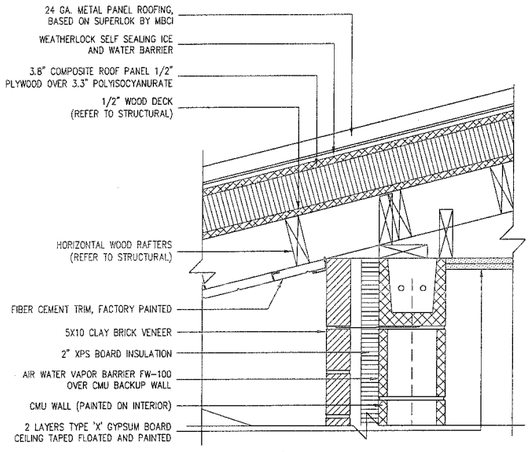


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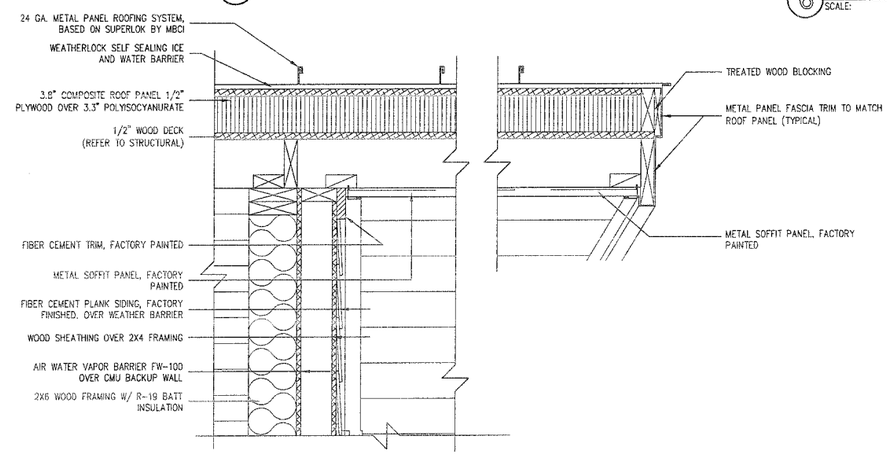


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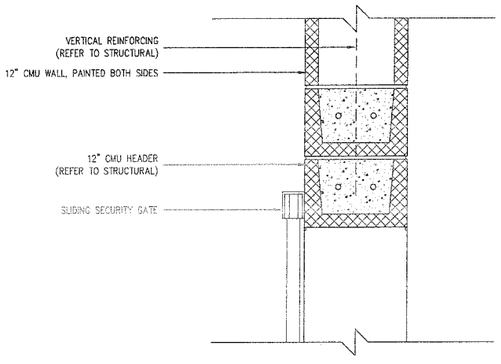


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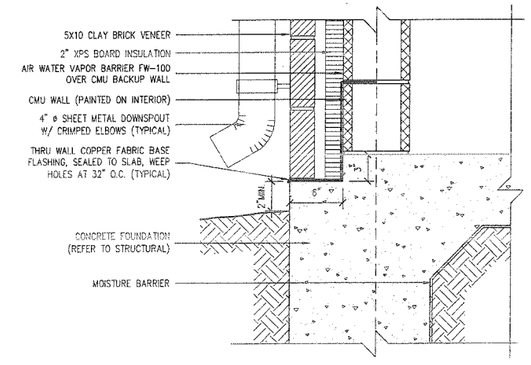


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PRECINCT NO. 4

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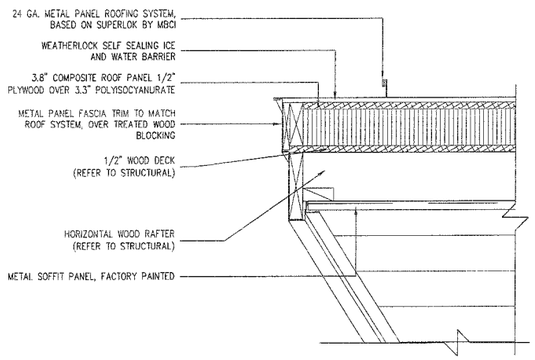


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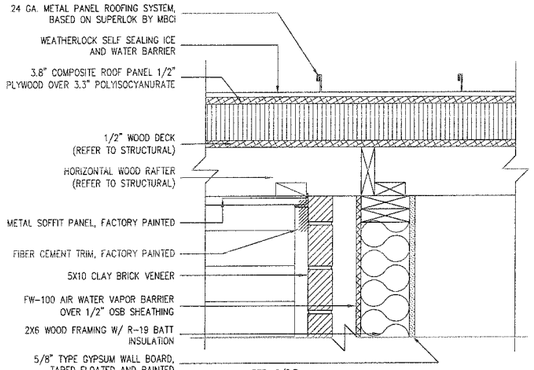


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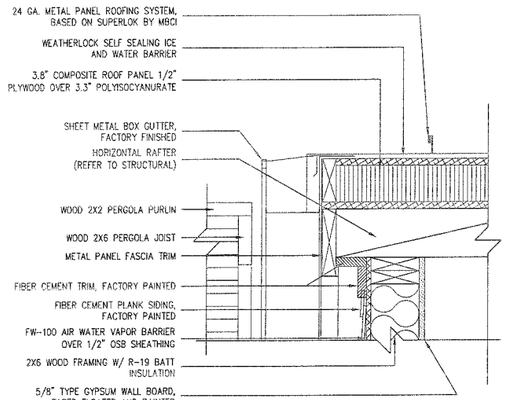


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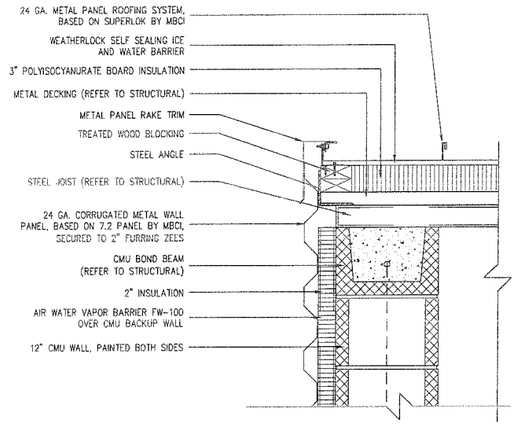


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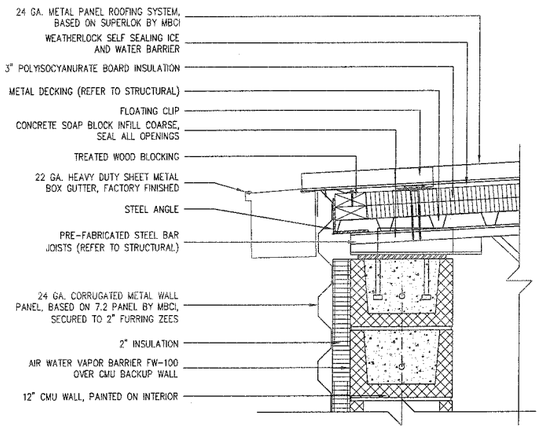


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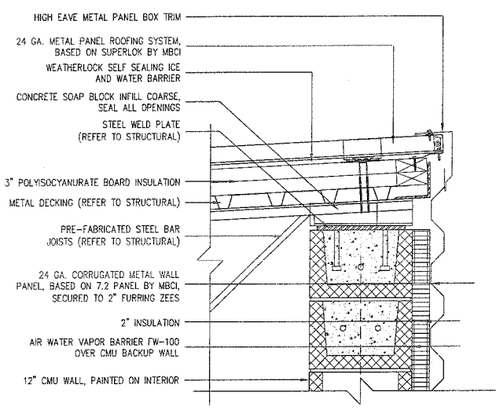


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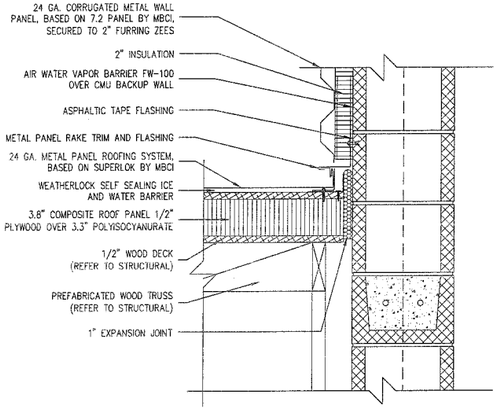


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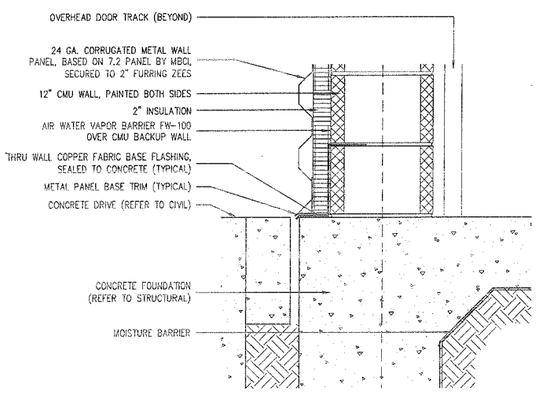


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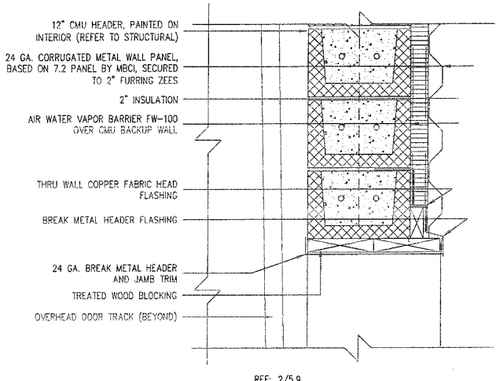


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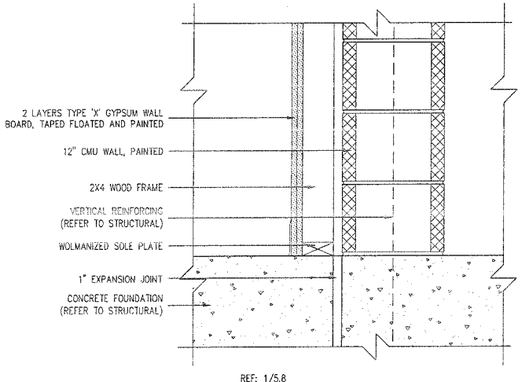


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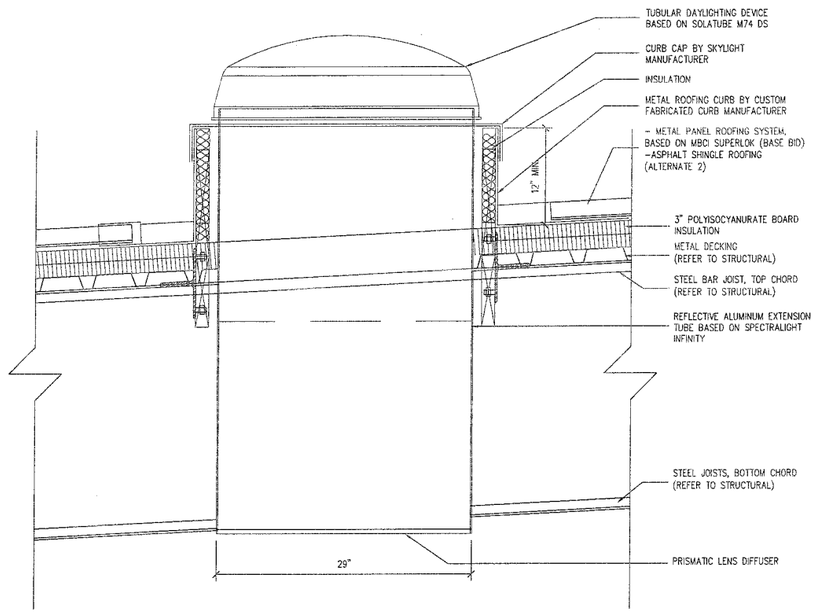


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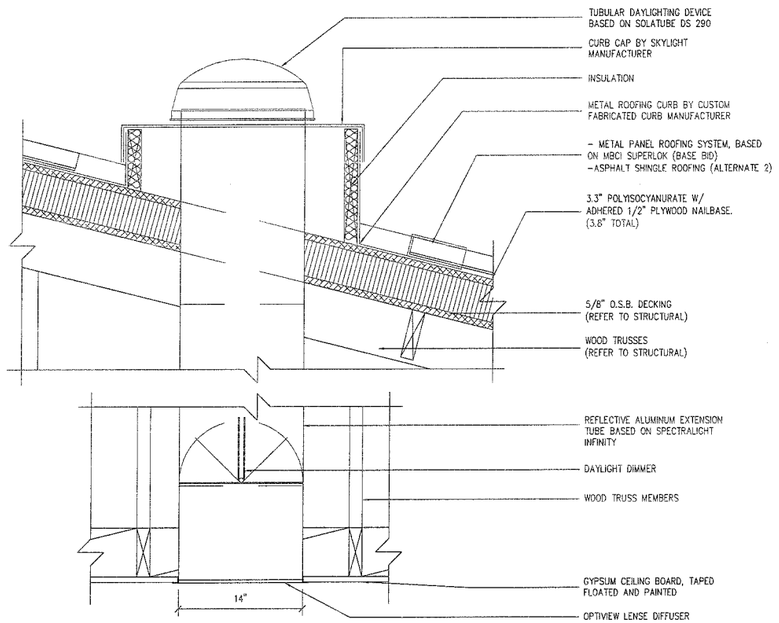


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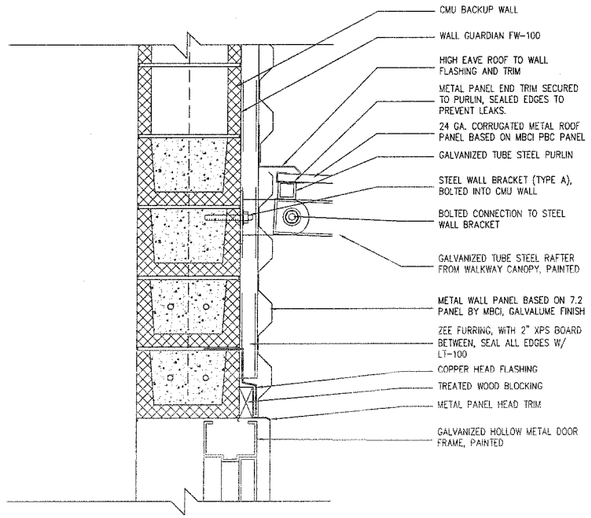


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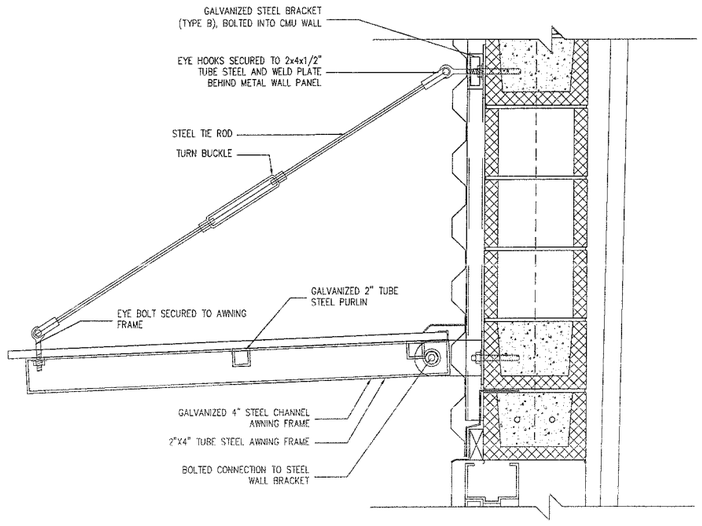


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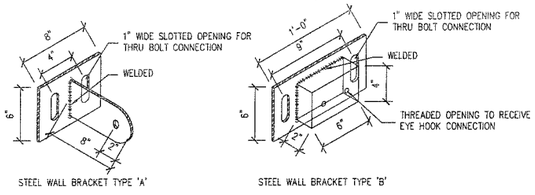


5 WALL BRACKET ISOMETRIC DETAIL
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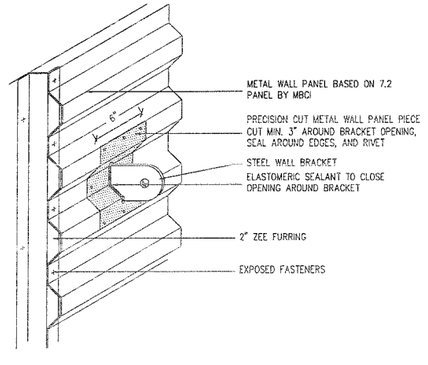


6 WALL BRACKET PENETRATION DETAIL
SCALE: 1-1/2"=1'-0"

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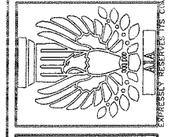


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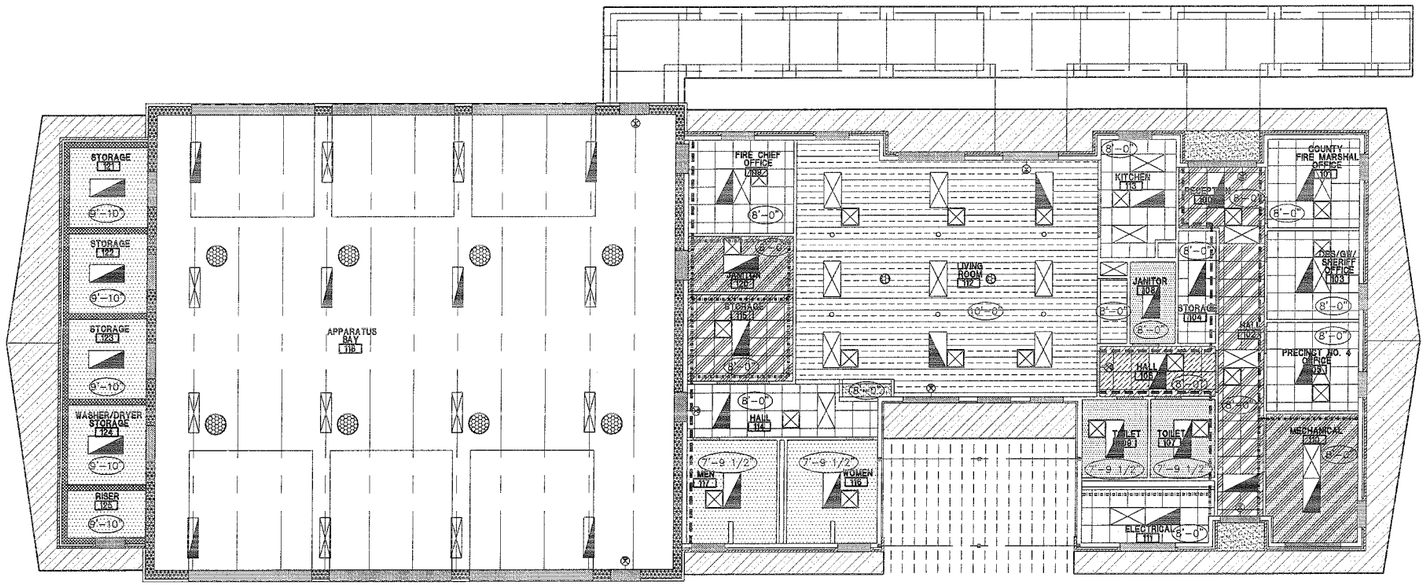



1 REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"

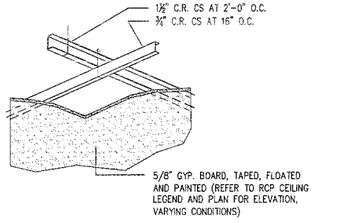
## CEILING LEGEND

- C-1 ACOUSTICAL CEILING TILE AND GRID 2x2
- C-2 SUSPENDED TYPE X GYPSUM BOARD
- C-3 MOISTURE RESISTANT TYPE X GYPSUM BOARD, PAINTED
- C-4 CEMENT PLASTER SOFFIT
- C-5 BEADED L-12 METAL SOFFIT PANEL
- C-6 EXPOSED STRUCTURE
- C-7 ACOUSTICAL CEILING TILE AND GRID 2x2 1 HOUR FIRE RATED
- C-8 MOISTURE RESISTANT TYPE X GYPSUM BOARD, PAINTED 1 HOUR FIRE RATED
- 21" SOLATUBE LOCATION
- 14" SOLATUBE LOCATION

GENERAL NOTES:
1. WALLS NOTED AS FIRE RATED MUST MEET MINIMUM SEPARATION REQUIREMENTS WITH ADJACENT SPACES.

## WALL LEGEND

- SOLID WALL
- BULKHEAD WALL
- 1 HOUR FIRE RATED WALL (20 MIN. DOOR)
- 1 HOUR FIRE RATED WALL (45 MIN. DOOR)
- (X'-X") ROOM CEILING HEIGHT




2 SUSPENDED GYPSUM BOARD CEILING DETAIL (TYP)
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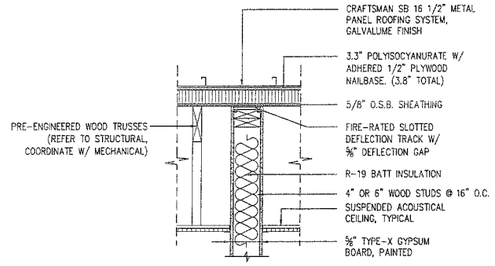


3 HEAD OF 1 HR. RATED WALL (TYP.)
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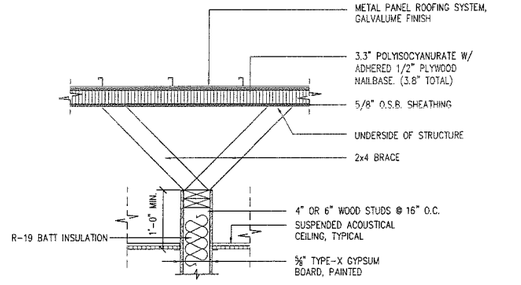


4 TYPICAL WALL ABOVE CEILING
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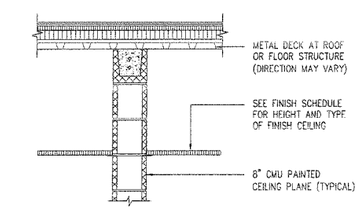


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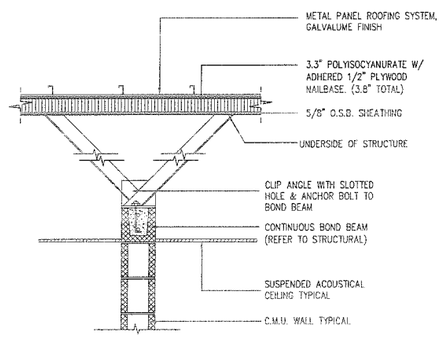


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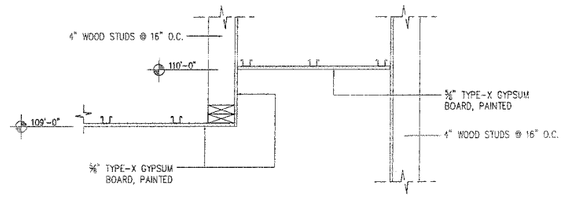


7 CEILING DETAIL
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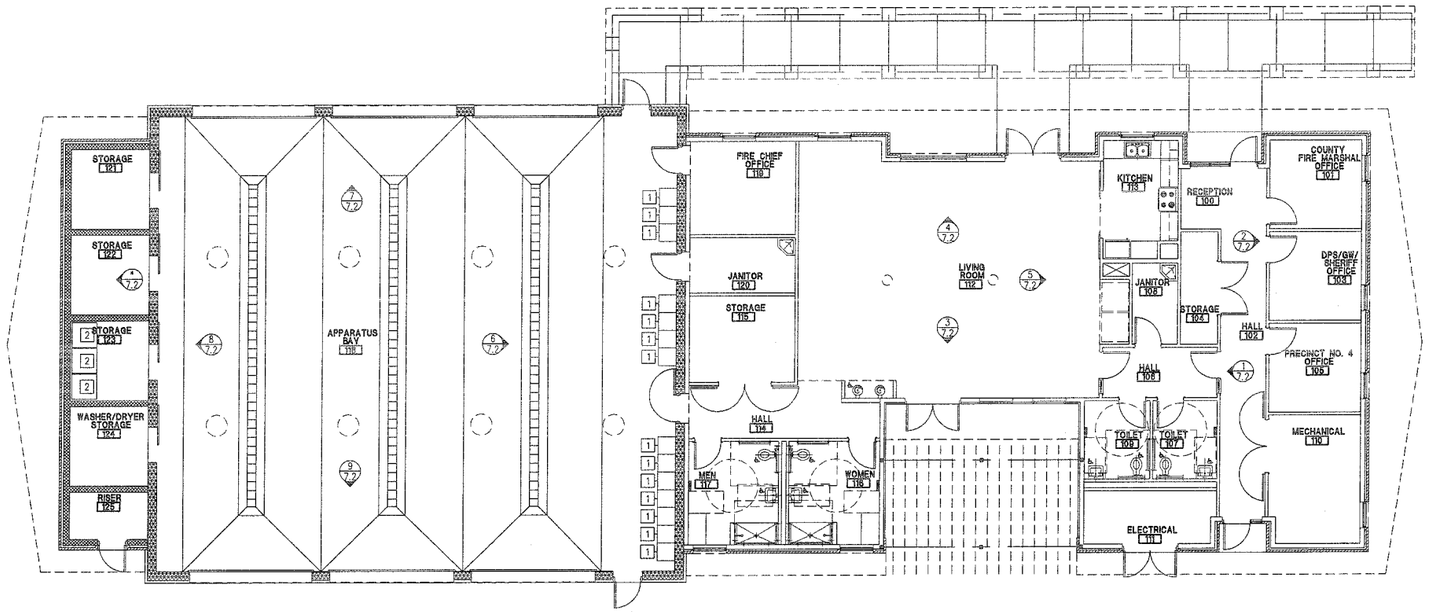
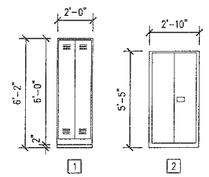



1 FIXTURE PLAN
SCALE: 1/8"=1'-0"




## STORAGE CABINET SCHEDULE

| NO. | FIXTURE | W" X D" X H" | REMARKS |
|---|---|---|---|
| 1 | FIRE FIGHTER GEAR LOCKER | 24" X 24" X72" | CONCRETE BASE |
| 2 | FLAMMABLE STORAGE CABINET | 36" X 24" X 34" | – |

## STORAGE CABINET LEGEND AND GENERAL NOTES

[X] CABINET TYPE, REFER TO CASEWORK SCHEDULE.

1. FLAMMABLE STORAGE CABINETS BASED ON SURE-GRIP EX FLAMMABLE SAFETY CABINET BY JUSTRITE MANUFACTURING MODEL NO. 896080
   - 18 GUAGE STEEL – DOUBLE VENTED
   - COLOR YELLOW – SELF CLOSING DOORS W/ FUSIBLE LINK
2. FIRE FIGHTER GEAR LOCKERS BASED ON PATRIOT LINE BY PENCO
   - PATRIOT WELDED TURNOUT LOCKER
   - 16 GUAGE STEEL WALLS, SHELVES, TOP, AND DOUBLE DOORS
   - 1" DIA. COAT ROD – INTEGRAL BASE – HEAVY DUTY COAT HOOKS
3. ALL METAL STORAGE CABINETS AND LOCKERS TO BE FACTORY POWDER COATED
4. FIELD VERIFY ALL DIMENSIONS.

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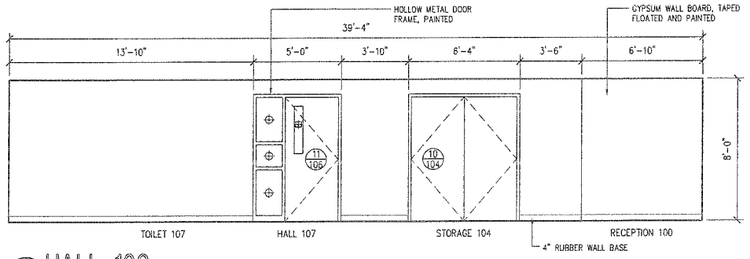


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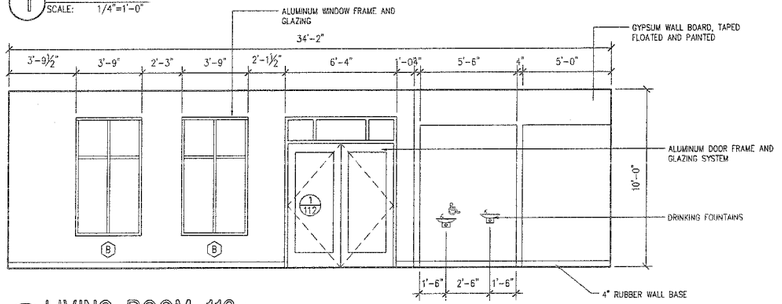


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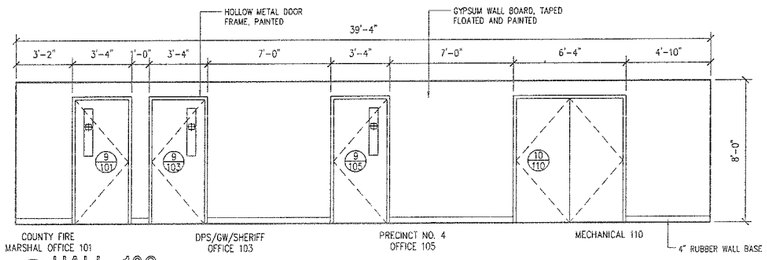


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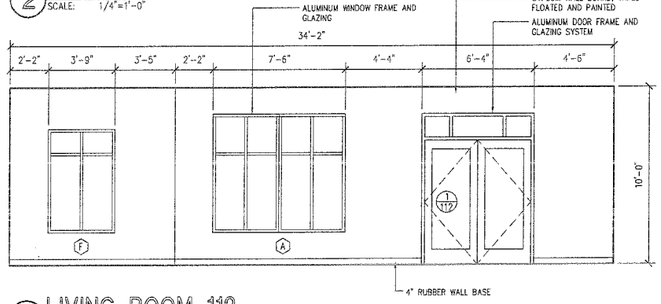


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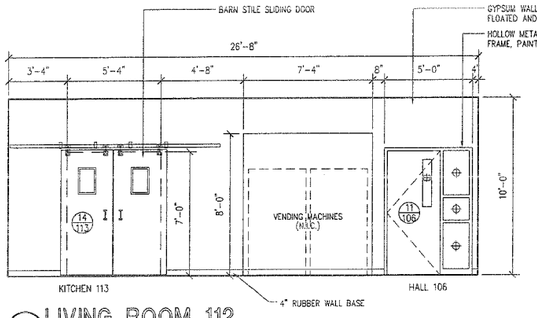


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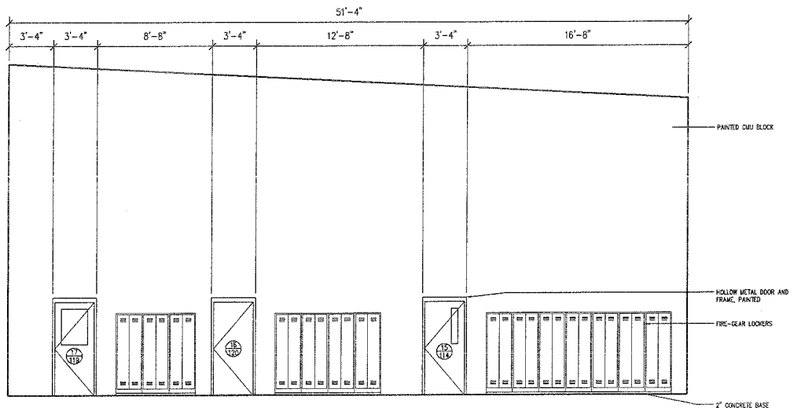


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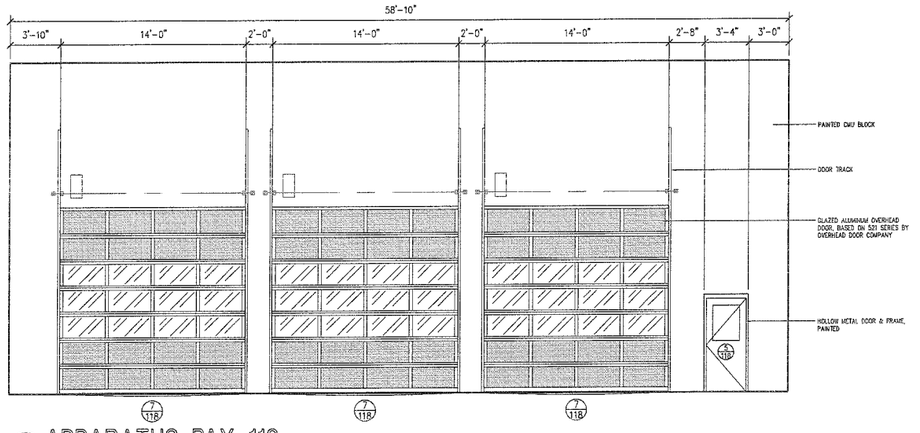


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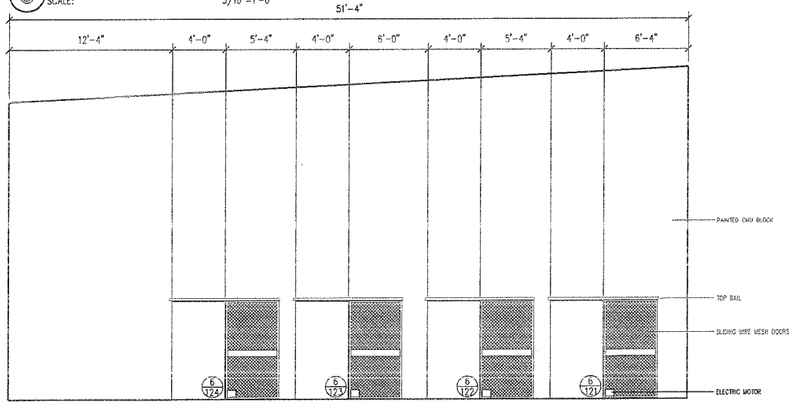


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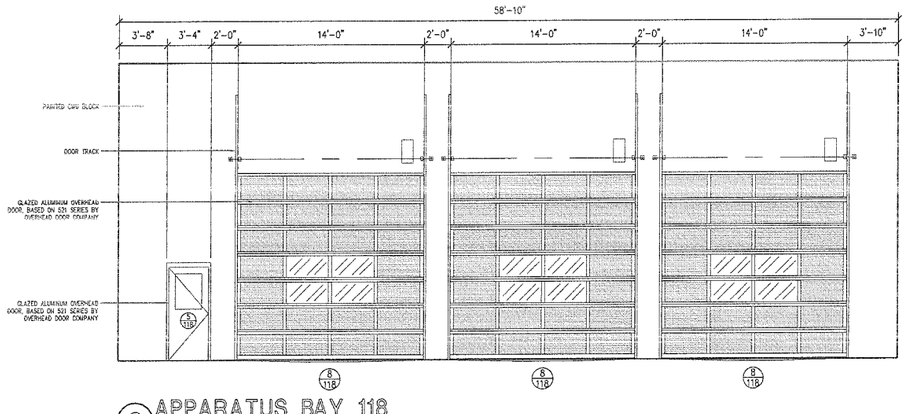


9 APPARATUS BAY 118
SCALE: 3/16"=1'-0"

PROJECT #: 201310
DATE:
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CHECKED BY: H.R.G.
REVISION:
1:
2:
3:
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LINN - SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN-SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

HECTOR R. GARCIA 13962
LICENSE EXPIRES: 03/31/2014

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SHEET: 7.2

# GENERAL LEGEND

## MECHANICAL

GENERAL MECHANICAL NOTES:

A. THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION EFFORTS. PROVIDE ALL NECESSARY OFFSETS AND FITTINGS AS REQUIRED BY FIELD CONDITIONS.

B. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER AND/OR OWNER.

C. THE CONTRACTOR IS FULLY RESPONSIBLE FOR PERFORMING THE WORK IN FULL COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES UNDER THIS SECTION OF THE CONTRACT. IF THE CONTRACTOR DETERMINES THAT THE CONTRACT DOCUMENTS AND PLANS ARE NOT IN COMPLIANCE WITH THE APPLICABLE LOCAL CODES, HE SHALL INFORM THE OWNER PRIOR TO CONSTRUCTION START FOR DIRECTION. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO MEET APPLICABLE LOCAL CODES, AND REWORK SHALL BE AT CONTRACTOR'S EXPENSE.

D. CONTRACTOR SHALL HANG AND INSTALL ALL DUCTWORK TIGHT WITH THE BUILDING STRUCTURE TO ACCOMMODATE NEW CEILINGS. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH ARCHITECTURAL AND ELECTRICAL DESIGN. ALL DUCTWORK SHALL BE MODIFIED AS NECESSARY AND REQUIRED TO FIT AROUND BUILDING STRUCTURES, ARCHITECTURAL BUILD-OUT. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.

E. CONTRACTOR SHALL INSTALL ALL EXHAUST SYSTEMS, INCLUDING FANS AND EXHAUST DUCTS. PROVIDE COMPLETE NEW SYSTEMS AS INDICATED.

F. CONTRACTOR SHALL PROVIDE ALL CEILING DIFFUSERS AS SHOWN. CONNECT EACH DIFFUSER TO THE MAIN DISTRIBUTION DUCT WITH A FLEX-DUCT SECTION; CONNECTIONS SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAIL SHOWN IN THESE PLANS. EACH FLEX-DUCT CONNECTION SHALL INCLUDE A BUTTERFLY DAMPER TO BE INSTALLED AT THE TRUNK DUCT.

G. CONTRACTOR SHALL PROVIDE ALL DUCTWORK REQUIRED TO COMPLETE THE HVAC SYSTEM. TIE IN BRANCH DUCTS TO MAIN DUCTS WITH SHEET METAL FLANGES. FLANGE CONNECTION SHALL BE FASTENED WITH CRIMPED SHEET METAL STRIPS AND SEALED WITH SILICONE CAULK.

H. ALL OPENINGS CUT IN MASONRY AND PLASTER WALLS OR CONCRETE FLOORS SHALL BE CORE DRILLED OR SAWED WHEN POSSIBLE. CONTRACTOR SHALL CHECK BUILDING CONSTRUCTION BEFORE MAKING PENETRATIONS TO AVOID CUTTING THROUGH STRUCTURAL BEAMS AND REINFORCING. CONTRACTOR SHALL INFORM THE ENGINEER IF REINFORCING IS CUT OR DAMAGED WHILE MAKING OPENINGS. CONTRACTOR SHALL REINFORCE ALL OPENINGS AS REQUIRED BY DRAWINGS AND SPECIFICATIONS. PATCH AND SEAL OPENINGS WITH 6000 PSI CEMENT GROUT. INSTALL DECORATIVE TRIM (EQUIPMENT FLANGES, FRAMING OR ESCUTCHEONS) AROUND OPENINGS IN FINISHED AREAS. COORDINATE ALL CUTTING AND PATCHING WITH THE OTHER TRADES.

I. ON ANY WORK SHOWN ON MECHANICAL DRAWINGS REQUIRING DEMOLITION OF EXISTING OR NEW BUILDING STRUCTURES AND FINISHES, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE THE NECESSARY DEMOLITION. CONTRACTOR SHALL PATCH AND REPAIR ALL DEMOLITION WORK. PATCHING SHALL BE COMPLETED WITH THE SAME MATERIALS AS THE SURROUNDING AREAS, OR WITH OWNER-APPROVED PATCHING MATERIALS. ALL REFINISHING SHALL BE APPROVED BY THE OWNER.

J. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE INSTALLATION OF THE AIR DISTRIBUTION SYSTEM SHOWN. DUCTWORK, DUCT ACCESSORIES AND CONTROLS SHOWN AND REQUIRED SHALL BE SUPPLIED AND INSTALLED. ALL INSTALLATION WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE CODES, INCLUDING NFPA 90A AND 90B.

K. CONTRACTOR SHALL BALANCE ALL AIR DISTRIBUTION SYSTEMS TO ACHIEVE THE AIR VOLUME REQUIREMENTS INDICATED. BALANCING SHALL INCLUDE ADJUSTMENT OF ALL MANUAL VOLUME DAMPERS, SPLITTER DAMPERS, ZONE DAMPERS (IF REQUIRED), BUTTERFLY DAMPERS AND INDIVIDUAL DIFFUSER VOLUME DAMPERS (FINAL BALANCING ONLY). CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A COMPLETE BALANCING REPORT WHICH INCLUDES VOLUME, ROOM REFERENCE AND ZONE VOLUME TOTALS.

L. MOUNT ALL THERMOSTATS (SENSORS) 48" ABOVE THE FINISHED FLOOR LEVEL UNLESS NOTED OTHERWISE THERMOSTATS SHOWN SHALL BE IN CONTROL OF THE ZONE SYSTEM WHICH IS SUPPLYING AIR TO THE AREA WHERE THE THERMOSTAT IS LOCATED. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF EACH THERMOSTAT WITH THE ROOM FINISHES AND USES. CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONTROL VOLTAGE WIRING AND CONDUIT FOR THERMOSTAT INSTALLATION.

M. CONTRACTOR SHALL COORDINATE THE FINAL LOCATIONS OF ALL CEILING DIFFUSERS WITH LIGHTING INSTALLATIONS AND ARCHITECTURAL REFLECTED CEILING PLANS. MOVE THE DIFFUSER LOCATIONS IF REQUIRED TO AVOID OBSTRUCTIONS FROM DUCTWORK AND LIGHT FIXTURES. COORDINATE RELOCATION WITH ENGINEER.

N. VERIFY THE LOCATION OF ALL WALLS, PARTITIONS, DOORS, CABINETS, AND CEILINGS FROM ACTUAL FIELD MEASUREMENTS.

O. PROVIDE SMOKE DETECTOR AND SHUTDOWN CONTROLS ON AIR HANDLERS AND SUPPLY FANS. SMOKE DETECTORS SHALL BE PROVIDED, INSTALLED AND WIRED FOR SHUT DOWN BY DIVISION 16. PROVIDE BOTH SUPPLY AND RETURN SIDE DEVICES.

P. CONTRACTOR SHALL INSTALL NEW REFRIGERANT PIPING FLUSH WITH THE BUILDING STRUCTURE AND MECHANICAL ROOM BOUNDARIES AS SHOWN. CONTRACTOR SHALL COORDINATE ALL INSTALLATION WORK WITH DUCTS AND ELECTRICAL CONDUIT. MECHANICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE WORK SCOPE OF OTHER TRADES AND PARTICIPATE IN COORDINATING ALL CONSTRUCTION EFFORTS.

Q. ALL PIPING SHALL BE INSULATED WITH FLEXIBLE ELASTOMERIC AND JACKETED WITH ALUMINUM. REFER TO THE SPECIFICATIONS.

## ELECTRICAL

### GENERAL ELECTRICAL SITE NOTES:

A. ELECTRICAL CONTRACTOR SHALL CONTACT UTILITY COMPANY SERVICE REPRESENTATIVE AND COORDINATE SERVICE INSTALLATION PRIOR TO COMMENCING WORK.

B. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER ALL FEES AND CONSTRUCTION COSTS CHARGED BY THE POWER, TELEPHONE AND CABLE UTILITY PROVIDERS FOR MAIN LINE EXTENSIONS OF SERVICE FOR A NEW INSTALLATION.

C. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL POWER, TELEPHONE AND CABLE TO THE NEW FACILITY.

D. ELECTRICAL CONTRACTOR SHALL INSTALL ALL UNDERGROUND CONDUIT, CONDUCTORS AND CABLES AS SPECIFIED. REFER TO SPECIFICATION SECTIONS FOR REQUIREMENTS.

### GENERAL ELECTRICAL LIGHTING NOTES:

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS (RCP) FOR EXACT LOCATION OF LIGHT FIXTURES. FURNISH FIXTURES WITH TRIM COMPATIBLE WITH THE TYPE OF CEILING AS INDICATED IN RCP.

B. CONNECT EXIT/EMERGENCY LIGHTS AND EMERGENCY BALLASTS IN EMERGENCY LIGHTS IN EACH SPACE TO UNSWITCHED HOT LEGS OF THE LOCAL LIGHTING CIRCUIT

C. COORDINATE PLACEMENT OF LIGHT FIXTURE WITH ACTUAL INSTALLATION OF MECHANICAL EQUIPMENT AND DUCTWORK.

D. COORDINATE LOCATIONS OF ALL WIRING SWITCHES AND MOUNTING HEIGHTS WITH OWNERS DRAWINGS PRIOR TO ROUGH IN.

E. COORDINATE INSTALLATION OF CONDUIT WITH OTHER TRADES PRIOR TO ROUGH-IN.

F. FURNISH AND INSTALL WALL MOUNTED EXIT LIGHT FIXTURES ABOVE DOOR. ALIGN BOTTOM OF LIGHT FIXTURE WITH MASONRY. REFER TO DETAILS FOR REQUIREMENTS.

### GENERAL ELECTRICAL POWER NOTES:

A. DIMENSIONS INDICATED ARE TO BE VERIFIED AND ADJUSTED AS REQUIRED BY EQUIPMENT AND/OR FIELD CONDITIONS.

## PLUMBING

### GENERAL PLUMBING NOTES:

A. COORDINATE EXACT LOCATION OF ALL FLOOR DRAINS WITH MECHANICAL EQUIPMENT LOCATION AND CONDENSATE DRAIN REQUIREMENTS PRIOR TO ANY INSTALLATION.

B. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH TRAP PRIMER CONNECTION.

C. PLUMBING CONTRACTOR SHALL ADHERE TO ALL CITY CODES AND OTHER STATE CODES AND LOCAL CODES THAT HAVE AUTHORITY OVER THIS PROJECT.

D. PLUMBING CONTRACTOR SHALL EXTEND ALL CONDENSATE AND INDIRECT DRAINS FROM EQUIPMENT TO FLOOR DRAINS.

E. PLUMBING CONTRACTOR SHALL TERMINATE ALL WATER ROUGH-IN WITH SHUT-OFF VALVES BEFORE CONNECTING TO EQUIPMENT AND RELATED FIXTURES.

F. PLUMBING CONTRACTOR TO COORDINATE WITH MECHANICAL CONTRACTOR FOR ANY INSTALLATION OF PIPING AND DUCTWORK PRIOR TO BEGINNING OF CONSTRUCTION.

G. INSULATE "P" TRAPS AND SUPPLIES AT HANDICAP LAVATORIES WITH INSULATION KIT.

H. PROVIDE VACUUM BREAKER TO ALL FIXTURES WITH HOSE CONNECTION AND APPLIANCES WITH DIRECT CONNECTIONS TO DOMESTIC WATER.

I. REFER TO OWNERS DRAWINGS FOR MOUNTING HEIGHTS OF ALL PLUMBING FIXTURES.

J. ALL VENTS THROUGH ROOF SHALL BE FLASHED A MINIMUM OF 12" ABOVE ROOF. ALL VENTS SHALL BE MINIMUM OF 10' AWAY FROM ANY OUTSIDE AIR INTAKE.

K. PROVIDE CEILING ACCESS PANEL FOR WATER ISOLATION VALVES, WATER HAMMER ARRESTORS AND TRAP PRIMER VALVES IN OTHERWISE INACCESSIBLE AREAS.

## SPECIAL SYSTEMS

### GENERAL SPECIAL SYSTEMS NOTES:

A. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL POWER SOURCE WIRING IN ACCORDANCE WITH MILLWORK. ALL INSTALLATIONS SHALL COMPLY WITH ADA REQUIREMENTS.

B. ELECTRICAL CONTRACTOR SHALL VERIFY ALL REQUIREMENTS BEFORE ANY ROUGH-IN IN ORDER TO COORDINATE MANUFACTURER'S DRAWINGS FOR EQUIPMENT LOCATION AND INSTALLATION ACCESSORIES.

C. COORDINATE RUNS FOR CONDUIT UP IN JOIST AND FOR SUSPENDING REQUIREMENTS IN ACCORDANCE WITH STRUCTURAL PLANS.

D. FURNISH DUCT SMOKE DETECTOR FOR RETURN DUCT. COORDINATE EXACT LOCATION IN ACCORDANCE MECHANICAL DRAWINGS. FURNISH AND INSTALL TEST SWITCH RECESSED TO CEILING, RIGHT BELOW LOCATION OF UNIT. LABEL "SMOKE DUCT DETECTOR TEST SWITCH". LABEL SHALL INCLUDE EQUIPMENT NAME ID TAG.

E. ALL CABLES ABOVE CEILING SHALL BE PLENUM RATED.

F. SEAL PENETRATION WITH FIRE PROOF SEALANT UL LISTED FOR FIRE WALLS. BOTH ENDS SHALL BE CHAMFERED FOR A NON SHARP EDGES.

G. ALL DATA-CONDUITS SHALL STUB-UP, ACCESSIBLE, ABOVE LAY-IN CEILING.

H. CONDUITS SHALL BE REAMED AND COMPLETED WITH CONNECTORS AND INSULATED BUSHINGS AT BOTH ENDS.

I. BETWEEN ANY TWO PULL POINTS THERE SHALL BE NO CONDUIT WITH GREATER THAN 180 DEGREES OF BENDS OR EQUIVALENT.

J. WHERE CONDUIT LENGTH EXCEEDS 100FT AND/OR TWO 90 DEGREE BENDS OR EQUIVALENT PROVIDE PULL BOXES AS REQUIRED.

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STATE OF TEXAS — J. GABRIEL HINOJOSA — 96585 — LICENSED PROFESSIONAL ENGINEER — 02-01-2024

STATE OF TEXAS — JOSE ANTONIO NICANOR — 108783 — LICENSED PROFESSIONAL ENGINEER — 02-01-2024

PRE-BID SET

NOT FOR CONSTRUCTION


SIGMA ENGINEERS, PLLC
TBPE Firm No. F-14767
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LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY


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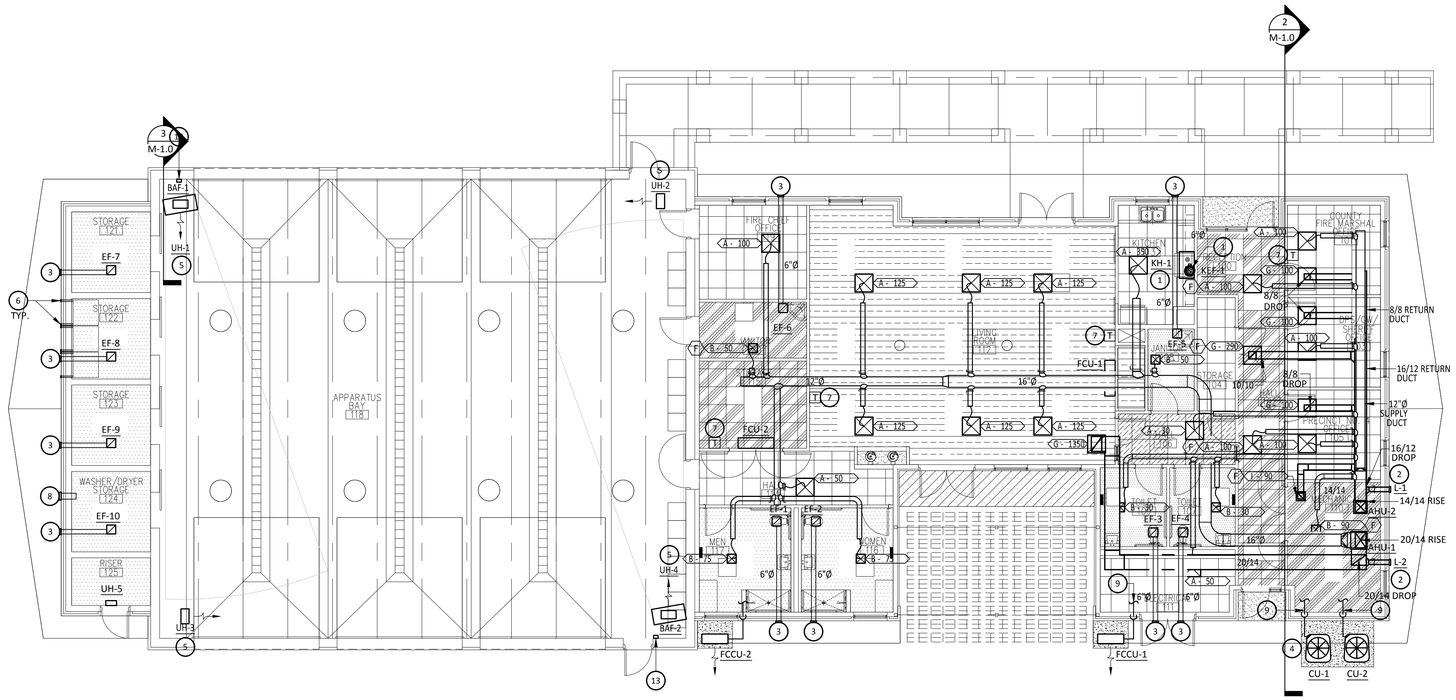
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STORAGE 122
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14/14 RISE
20/14 RISE
20/14 DROP
8/8 DROP
L-1
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6"Ø
8"Ø
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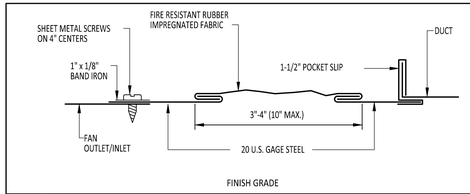
16"Ø
FIRE SPRINKLER RISER
FIRE SPRINKLER RISER
FIRE SPRINKLER RISER




## 1 FLEXIBLE CONNECTION DETAIL
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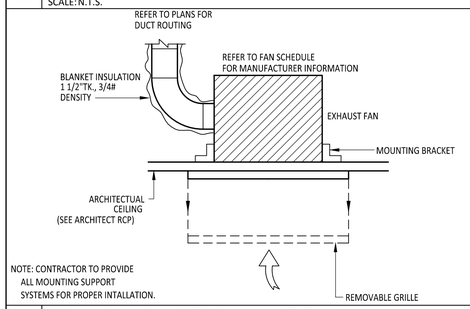


## 2 CEILING MOUNTED EXHAUST FAN
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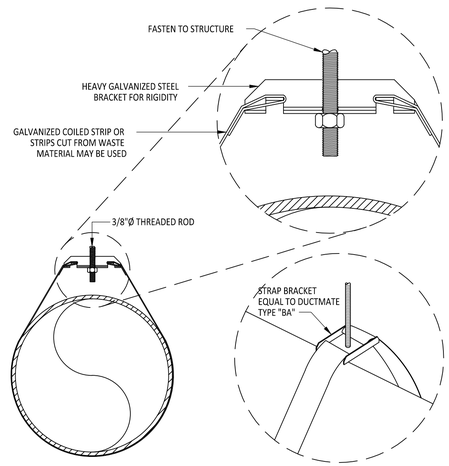


## 3 ROUND DUCT STRAP BRACKET
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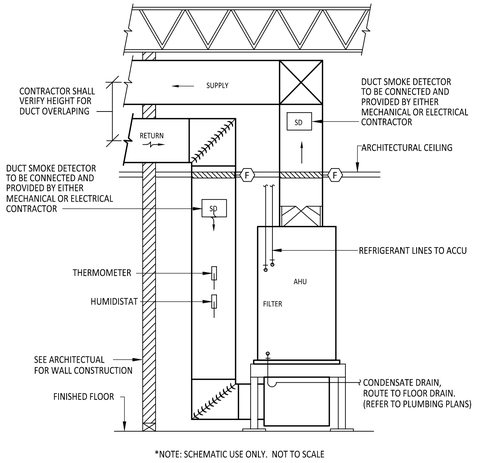


*NOTE: SCHEMATIC USE ONLY. NOT TO SCALE

## 4 FAN/COIL - SECTION VIEW
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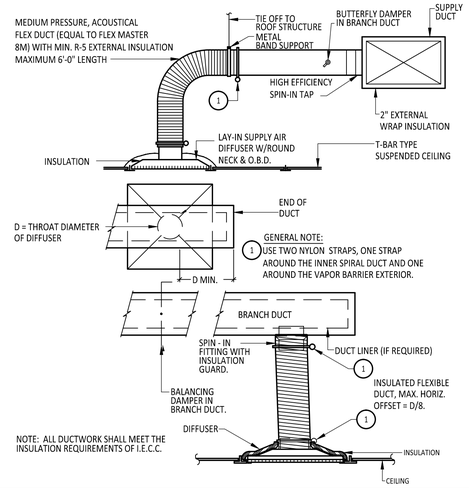
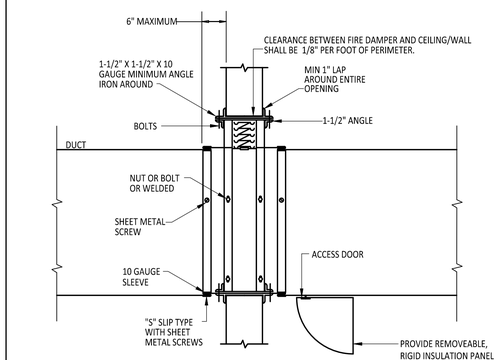



## 5 SUPPLY AIR DIFFUSER
SCALE: N.T.S.




## 6 WALL/ CEILING FUSIBLE LINK FIRE DAMPER
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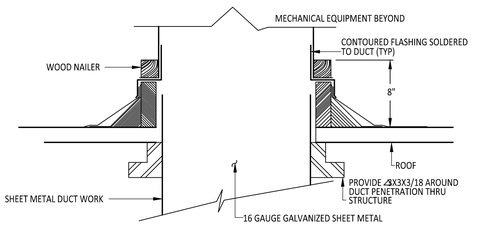
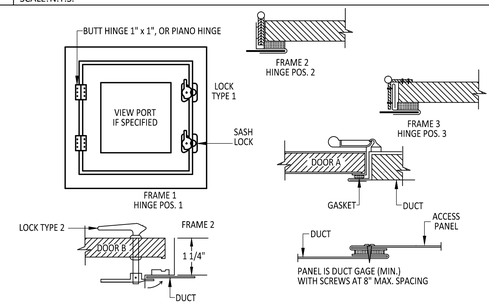


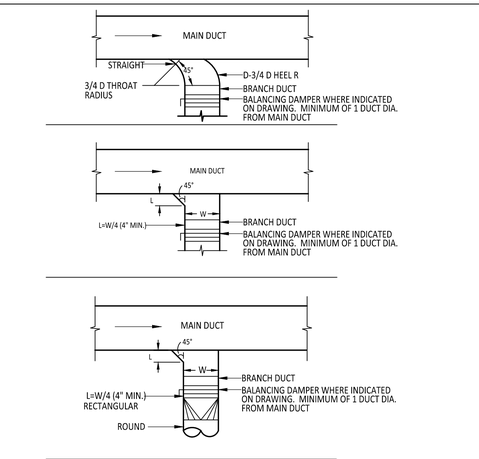

NOTE: PENETRATIONS THROUGH SKYLIGHTS SHALL BE MADE WATERPROOF. SEAL OPEN AREAS OF SKYLIGHT WITH SHEETMETAL AND PROVIDE SHEETMETAL CANT ANGLED TO DRAIN WATER AWAY FROM DUCT PENETRATION AND ONTO ROOF. ALL PENETRATIONS SHALL BE MADE IN ACCORDANCE WITH SMACNA MANUAL OR AS APPROVED BY THE CONTRACTING OFFICER.

## 7 DUCT ROOF PENETRATION
SCALE: N.T.S.

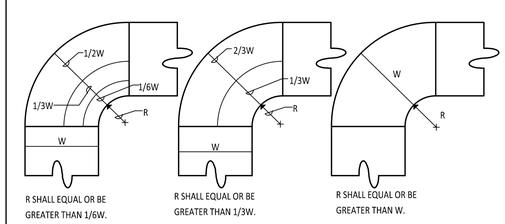



| | DOOR SIZE | NO. HINGES | NO. LOCKS | METAL GAGE FRAME | METAL GAGE DOOR | METAL GAGE BACK |
|---|---|---|---|---|---|---|
| 2" W.G. STATIC AND LESS | 12" x 12" | 2 | 1-S | 24 | 26 | 26 |
| | 16" x 20" | 2 | 2-S | 22 | 24 | 26 |
| | 24" x 24" | 3 | 2-S | 22 | 22 | 26 |
| 3" W.G. STATIC | 12" x 12" | 2 | 1-S | 22 | 22 | 26 |
| | 16" x 20" | 2 | 1-S,1-T,1-B | 20 | 20 | 26 |
| | 24" x 24" | 3 | 2-S,1-T,1-B | 20 | 20 | 24 |
| 4" W.G. TO 10" W.G. | 12" x 12" | 2 | 1-S,1-T,1-B | 20 | 20 | 26 |
| | 16" x 20" | 3 | 2-S,1-T,1-B | 18 | 18 | 24 |
| | 24" x 24" | 3 | 2-S,2-T,2-B | 18 | 18 | 24 |
| S = SIDE OPPOSITE HINGES, T = TOP, B = BOTTOM | | | | | | |

## 8 DUCT ACCESS DOOR DETAIL
SCALE: N.T.S.

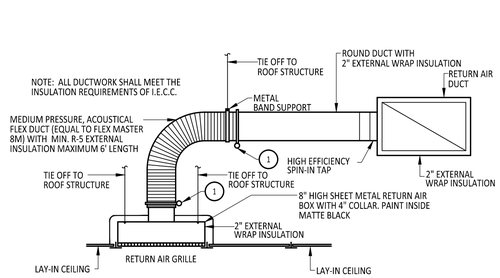



## 9 TYPICAL BRANCH CONNECTION
SCALE: N.T.S.



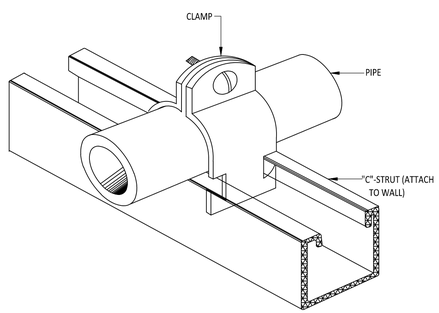

NOTES:
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND
2. ALL STANDARD RADIUS ELBOWS SHOWN ON PLANS MAY BE MADE SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

## 10 RADIUS DUCT ELBOW DETAIL
SCALE: N.T.S.

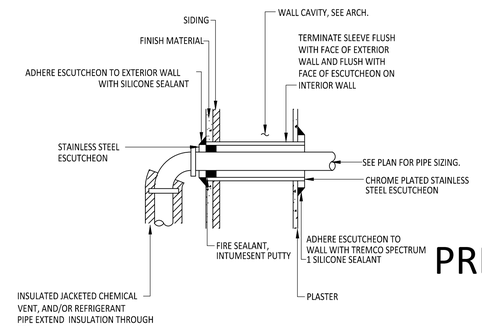



1 USE TWO NYLON STRAPS -ONE STRAP AROUND INNER SPIRAL DUCT, ONE AROUND VAPOR BARRIER EXTERIOR.

## 11 RETURN AIR GRILLE BOX CONNECTION
SCALE: N.T.S.




## 12 WALL SUPPORT DETAIL
SCALE: N.T.S.




## 13 TYPICAL EXTERIOR WALL PENETRATION
SCALE: N.T.S.

**PRE-BID SET**

NOT FOR CONSTRUCTION

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701 S. 15th Street
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PROJECT #: 13023
DRAWN BY: J.V.
CHECKED BY: G.H.
REVISION:
1:
2:
3:
4:

PROJECT: LINN – SAN MANUEL EMERGENCY SERVICES FACILITY PRECINCT NO. 4
OWNER: LINN–SAN MANUEL, TEXAS
HIDALGO COUNTY

STATE OF TEXAS · J. GABRIEL HINOJOSA · 96585 · LICENSED PROFESSIONAL ENGINEER

08-30-2011

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SHEET: M-2.0

## SPLIT DX UNIT SCHEDULE

| AIR HANDLING UNIT | | | | | | | | | | | | | | | CONDENSING UNIT | | | | | | | EFFICIENCY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAG | MANUF. | MODEL | AIRFLOW (CFM) | OUTSIDE AIR (CFM) | E.S.P. (IN. WC) | POWER (HP) | TOTAL CAPACITY (BTU/HR) | SENSIBLE CAPACITY (BTU/HR) | EAT-DB °F | EAT-WB °F | LAT-DB °F | LAT-WB °F | ELECTRIC HEAT (KW) | VOLTAGE | MCA | MOCP | TAG | MANUF. | MODEL | AMBIENT AIR TEMP. °F | VOLTAGE | MCA | MOCP | EER (SEER) |
| SDX-1 | TRANE | GAM5B0 | 1500 | 140 | 0.6 | 0.75 | 46,000 | 33,755 | 77 | 64 | 55.2 | 53.7 | 7 | 208/3 | 51 | 60 | SDXCU-1 | TRANE | 4TTR6048B1 | 100 | 208/3 | 26 | 45 | 15.5 |
| SDX-2 | TRANE | GAM5B0 | 730 | 70 | 0.6 | 0.33 | 21,600 | 16,010 | 77 | 64 | 55.6 | 54.3 | 4 | 208/1 | 25 | 25 | SDXCU-2 | TRANE | 4TTR6024B1 | 100 | 208/3 | 9 | 15 | 16.25 |

NOTES:

1. PROVIDE WITH SINGLE POINT POWER FOR INDOOR UNIT AND INDEPENDENT SINGLE POINT POWER FOR OUTDOOR UNIT.
2. SPACE MOUNTED 7-DAY PROGRAMMABLE THERMOSTAT TO BE PROVIDED BY UNIT MANUFACTURER.
3. PROVIDE TUBULAR STEEL SUPPORT FRAME FOR AIR HANDLING UNIT.
4. CONTACT RIGO GARZA FOR TRANE PRODUCTS AT 956-447-1795.
5. PROVIDE DUAL CIRCUIT CONDENSING UNIT SDXCU-1
6. PROVIDE SINGLE CIRCUITE CONDENSING UNIT FOR SDXCU-2

## UNIT HEATER SCHEDULE

| MARK | MANUFACTURER | MODEL | SERVES | ELECTRIC HEAT | ELECTRICAL | | | PERFORMANCE | | | REC | APPROX. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | KW | VOLTS/Ø/HZ. | AMPS | CONTROL VOLTAGE | TEMP. RISE (°F) | AIR THROW | CFM | MOUNTING HEIGHT | WEIGHT (LBS.) |
| UH-1 | REDDI | F3FUH07C03 | APPARATUS BAY 118 | 7.5 | 208/3/60 | 21 | 208 | 42 | 36' | 575 | 9' | 44 |
| UH-2 | REDDI | F3FUH07C03 | APPARATUS BAY 118 | 7.5 | 208/3/60 | 21 | 208 | 42 | 36' | 575 | 9' | 44 |
| UH-3 | REDDI | F3FUH07C03 | APPARATUS BAY 118 | 7.5 | 208/3/60 | 21 | 208 | 42 | 36' | 575 | 9' | 44 |
| UH-4 | REDDI | F3FUH07C03 | APPARATUS BAY 118 | 7.5 | 208/3/60 | 21 | 208 | 42 | 36' | 575 | 9' | 44 |
| UH-5 | REDD-i | F2F5103N | FIRE RISER | 3.3 | 208/3/60 | 6.9 | 208 | 26 | 12' | 400 | 9' | 25 |

NOTES:

1 . INTEGRAL DISCONNECT SWITCH.
2 . UNIT-MOUNTED THERMOSTAT.
3 . OVERHEAT PROTECTION, AUTOMATIC RESET TYPE.
4 . HORIZONTAL DISCHARGE CONFIGURATION.
5 . WALL/CEILING BRACKET.

## MECHANICAL GENERAL LEGEND DUCTWORK SYMBOLS

| DESCRIPTION | SINGLE LINE | DOUBLE LINE |
|---|---|---|
| ACCESS DOOR | AD | AD |
| BACKDRAFT DAMPER | BDD | BDD |
| FIRE DAMPER | (F) | (F) |
| FLEXIBLE CONNECTION | FC | FC |
| MOTORIZED DAMPER | M | M |
| CONTROL DAMPER | CD M | CD M |
| VOLUME DAMPER, MANUAL | VD | VD |
| DUCT ELBOW WITH TURNING VANES | | |
| DUCT SECTION - SUPPLY AIR | | |
| DUCT SECTION - EXHAUST AIR | | |
| DUCT SECTION - RETURN, OUTSIDE, OR RELIEF AIR | | |
| DUCT, INCLINED DROP | | |
| DUCT, INCLINED RISE | | |
| FLEXIBLE DUCT - ROUND | 8"Ø | |
| DUCT TRANSITION | 14/10 → 10/10 | 14/10 → 10/10 |
| DUCT TRANSITION (SQUARE OR RECTANGULAR TO ROUND) | 10/10 → 8"Ø | 12/12 → 8"Ø |
| RECTANGULAR DUCT, SIZE IN INCHES, FIRST DIMENSION IS SIDE SHOWN (NET CLEAR INSIDE DIMENSION) | 10/14 | 10/14 |

| DESCRIPTION | SINGLE LINE | DOUBLE LINE |
|---|---|---|
| ROUND DUCT, DIAMETER IN INCHES (NET CLEAR INSIDE DIMENSION) | 8"Ø | 8"Ø |
| AIR FLOW IN DIRECTION OF ARROW | | |
| 45° BRANCH TAKE-OFFS | | |
| CONICAL LATERAL BRANCH TAKE-OFFS | | |
| CEILING SUPPLY DIFFUSERS | | |
| DIRECTION SUPPLY GRILLE, HATCH INDICATES BLOCKED QUADRANT | | |
| CEILING RETURN GRILLE/REGISTER | | |
| CEILING EXHAUST FAN (EF-_) | | EF-_ |
| CEILING EXHAUST GRILLE/REGISTER | | |
| SIDEWALL SUPPLY GRILLE/REGISTER | | |
| SIDEWALL RETURN/EXHAUST GRILLE/REGISTER | | |
| EXTRACTOR | | |
| DUCT TEE WITH SPLITTER DAMPER | | |
| DOOR UNDERCUT | UC | UC |
| DOOR LOUVER | L | L |

## MISCELLANEOUS SYMBOLS

- (P) DUCT STATIC PRESSURE SENSOR
- SD DUCT SMOKE DETECTOR
- $CO_2$ CARBON DIOXIDE SENSOR
- NEW CONNECTION TO EXISTING
- (H) HUMIDISTAT
- RH RELATIVE HUMIDITY SENSOR
- T THERMOSTAT OR TEMPERATURE SENSOR (MOUNT 48" AFF)
- T DUCT TEMPERATURE SENSOR
- TC TIME CLOCK
- F FREEZESTAT

- DIFFUSER, GRILLE OR REGISTER MARK
- A - 200 / 12 X 8 — AIR FLOW (CFM) / RECTANGULAR FACE SIZE (WHERE APPLICABLE)
- 01 / M2.01 — DIRECTION OF SECTION; IDENTIFYING NUMBER OR LETTER FOR SECTIONS; NUMBER OF REFERENCE DRAWING WHERE SECTION IS SHOWN.
- 01 / M2.01 — IDENTIFYING NUMBER OR LETTER FOR DETAILS; NUMBER OF REFERENCE DRAWING WHERE DETAIL IS SHOWN.
- ENLARGED DETAIL REFERENCE
- MATCHLINE
- LINE WITH HATCHING DESIGNATES DEMOLITION WORK

## LOUVER SCHEDULE

| MARK | SERVES | CFM | WIDTH (IN) | HEIGHT (IN) | MINIMUM FREE AREA (FT2) | PD AT 750 FPM (" w.g.) | MANUF. MODEL |
|---|---|---|---|---|---|---|---|
| L-1 | AHU-1 | 140 | 12 | 12 | 0.25 | 0.05 | RUSKIN EME520DD |
| L-2 | AHU-2 | 70 | 12 | 12 | 0.25 | 0.05 | RUSKIN EME520DD |

NOTES:

1. FINISH SHALL BE KYNAR FINISH. PAINT COLOR BY ARCHITECT. COORDINATE FINAL ELEVATION LOCATION WITH ARCHITECT.
2. LOUVER SHALL PROVIDE MINIMUM 99% EFFECTIVENESS IN PREVENTING WATER PENETRATIONIN WIND DRIVEN RAIN TEST (29 mph, 3 in/hr).

## □RI□□E DI□□USER RE□ISTER SC□EDU□E

| MARK | SERVICE | DESCRIPTION | MANUFACTURER MODEL NO. | MAX. NC. LEVEL (1) | REMARKS |
|---|---|---|---|---|---|
| A | SUPPLY | 24"X24" MODULE SIZE, ALUMINUM, LOUVERED, LAY IN DIFFUSER WITH 4 WAY THROW, ROUND NECK, FACE SIZE AS INDICATED BELOW. | PRICE AMD | 30 | WHITE FINISH |
| B | SUPPLY | 12"X12" MODULE SIZE, ALUMINUM, LOUVERED, SURFACE-MOUNTED DIFFUSER WITH 4-WAY THROW, ROUND NECK, FACE SIZE AS INDICATED BELOW. | PRICE AMD | 30 | WHITE FINISH |
| G | RETURN | 24"X24" EGGCRATE FACE, CEILING RETURN GRILL WITH BORDER FOR LAY-IN CEILING, ALUMINUM CONSTRUCTION. | PRICE 80 | 30 | WHITE FINISH |
| I | RETURN | 12"X12" EGGCRATE FACE, CEILING RETURN GRILLE, SURFACE MOUNTED, ALUMINUM CONSTRUCTION. | PRICE 80 | 30 | WHITE FINISH |

(F) =THIS WILL DESIFNATE A STEEL FIRE RATED AIR DEVICE TYPE.

CBA = COLOR BY ARCHITECT

* = SEE ARCHITECTURAL DRAWINGS PROPER BORDER TYPES

AIR OUTLET DESIGNATION ON PLANS: MARK — A - 200 / 12 X 8 — AIR FLOW (CFM / RECTANGULAR FACE SIZE (WHERE APPLICABLE)

| CAPACITY | FACE | NECK/FLEXIBLE CONNECTION |
|---|---|---|
| 0-150 | 6 X 6 | 6" |
| 151-285 | 9 X 9 | 8" |
| 286-440 | 12 X 12 | 10" |
| 441-550 | 12 X 12 | 12" |
| 551-750 | 15 X 15 | 14" |
| 750-1000 | 18 X 18 | 16" |

NOTE: COORDINATE ALL AIR DEVICE TYPE WITH ARCHITECTURAL RCP.

## EXHAUST FAN SCHEDULE

| MARK | CFM | SERVICE | LOCATION | TYPE | RPM | ESP | HP | DRIVE | VOLTAGE | MAX. SONES | CONTROL | MANUFACTURER | MODEL | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EF-1 | 100 | MENS 117 | CEILING | CABINET | 1050 | 0.5 | 129 WATTS | DIRECT | 120/1 | 4.5 | LIGHTS | GREENHECK | SP-B150 | 1-4 |
| EF-2 | 100 | WOMENS 116 | CEILING | CABINET | 1050 | 0.5 | 129 WATTS | DIRECT | 120/1 | 4.5 | LIGHTS | GREENHECK | SP-B150 | 1-4 |
| EF-3 | 100 | TOILET 109 | CEILING | CABINET | 1050 | 0.5 | 129 WATTS | DIRECT | 120/1 | 4.5 | LIGHTS | GREENHECK | SP-B150 | 1-4 |
| EF-4 | 100 | TOILET 107 | CEILING | CABINET | 1050 | 0.5 | 129 WATTS | DIRECT | 120/1 | 4.5 | LIGHTS | GREENHECK | SP-B150 | 1-4 |
| EF-5 | 100 | JAN. 120 | CEILING | CABINET | 1050 | 0.5 | 129 WATTS | DIRECT | 120/1 | 4.5 | LIGHTS | GREENHECK | SP-B150 | 1-4 |
| EF-6 | 100 | JAN. 108 | CEILING | CABINET | 1050 | 0.5 | 129 WATTS | DIRECT | 120/1 | 4.5 | LIGHTS | GREENHECK | SP-B150 | 1-4 |
| EF-7 | 400 | STORAGE 121 | CEILING | CABINET | 1070 | 0.5 | 240 WATTS | DIRECT | 120/1 | 4 | LIGHTS | GREENHECK | SP-A510 | 1-4 |
| EF-8 | 100 | STORAGE 122 | CEILING | CABINET | 1070 | 0.5 | 240 WATTS | DIRECT | 120/1 | 4 | LIGHTS | GREENHECK | SP-A510 | 1-4 |
| EF-9 | 100 | STORAGE 128 | CEILING | CABINET | 1070 | 0.5 | 240 WATTS | DIRECT | 120/1 | 4 | LIGHTS | GREENHECK | SP-A510 | 1-4 |
| EF-10 | 100 | WASHER/DRYER STOARAGE 124 | CEILING | CABINET | 1070 | 0.5 | 240 WATTS | DIRECT | 120/1 | 4 | LIGHTS | GREENHECK | SP-A510 | 1-4 |

NOTES:

1. FAN SHALL HAVE INTEGRAL DISCONNECT SWITCH FROM FACTORY.
2. FAN SHALL BE PROVIDED WITH BACK DRAFT DAMPER.
3. FAN SHALL BE PROVIDED WITH FACTORY MOUNTED FAN SPEED CONTROL.
4. FAN SHALL BE PROVIDED HOODED WALL CAP WITH ROUND CONNECTION EQUAL TO GREENHECK MODEL WC-6.

## BIG ASS FAN SCHEDULE

| TAG | MANUFACTURER | DESCRIPTION | WEIGHT | MOTOR | RPM | VOLT/PH | FLA | CIRCUIT SIZE | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| BAF-1 | BIG ASS FANS | 14' POWERFOIL X 2.0 | 309 lbs | 1.5 HP | 95 | 208V/3 | 3 A | 15 A | A,B,C,D,E,F |
| BAF-2 | BIG ASS FANS | YELLOWJACKET | 105 lbs | 0.5 hp | 300-1160 | 208V/1 | 6.8 A | 15 A | F,G |
| BAF-3 | BIG ASS FANS | YELLOWJACKET | 105 lbs | 0.5 hp | 300-1160 | 208V/1 | 6.8 A | 15 A | F,G |

NOTES:

A. VERIFY EXTENISON TUBE LENGTH AND MOUNTING BRACKET WITH MANUFACTURER PRIOR TO ORDERING.
B. SUPPLY WITH POWERFOIL AIRFOILS AND WINGLETS.
C. SUPPLY WITH WALL MOUNTED DIGITAL WALL KEYPAD CONTROLLER FULLY INTEGRATED WITH THE ONBOARD CONTROLLER.
D. SUPPLY WITH C-FACED MOTOR AND HERMETICALLY SEALED GEARBOX.
E. EXTENSION TUBES 4' OR LONGER SHALL BE INSTALLED WITH GUY WIRES PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
F. CONTACT BIG ASS FANS AT 877-244-3267 FOR PRICING INFORMTION AND FACTORY INSTALLATION SCOPE OF WORK.
G. PORTABLE BASE WITH 8" SHATTER-RESISTANT WHEELS.

MINIMUM FAN PLACEMENT REQUIREMENTS:

1. BOTTOM OF FAN SHOULD BE AT LEAST 10' AFF FOR POWERFOIL.
2. FAN SHOULD BE AT LEAST 2' AWAY, IN ANY DIRECTION, FROM ANY POSSIBLE OBSTRUCTIONS
3. FANS SHOULD NOT BE MOUNTED WITHIN TWO FAN DIAMETERS OF ANY LARGE AIR MOVING EQUIPMENT.
4. FANS SHALL BE AT THE SAME ELEVATION LEVEL OR HIGHER THAN RADIANT HEATERS AND OUTSIDE THE MINIMUN CLEARANCE TO COMBUSTIBLES

## KITCHEN HOOD SCHEDULE

| TAG | MANUFACTURER | MODEL | WIDTH | FAN TYPE | VENTING | CFM | MAX. DUCT LENGTH |
|---|---|---|---|---|---|---|---|
| HOOD: KH-1 FAN: KEF-1 | DENLAR | D1036-I_-DF (NFPA101) | 36 | IN-LINE DUCT FAN | VERTICAL DUCT | 510 | 35 FEET |

NOTES:

1 NFPA 101 UPGRADE PACKAGE
2 UNIT SHALL BE WALL MOUNTED SO THAT THE BOTTOM OF THE MOUNTING BRACKET SITS 18" TO 26" ABOVE THE COOK TOP.
3 UNIT SHALL BE OF STAINLESS STEEL CONSTRUCTION (#18 & #20GA, POLISHED 304) W/ NO SHARP EDGES AND BRUSHED FINISH.
4 UNIT SHALL HAVE FIRE SUPPRESSION SYSTEM FACTORY INSTALLED.
5 ACTIVATION OF THE MECHANICAL FIRE SUPPRESSION SYSTEM SHALL BE BY 212 OR 280 DEGREE FUSIBLE LINK (30" VS 36").
6 WET CHEMICAL EXTINGUISHING AGENT: LOW PH AMEREX 660 (PRESSURIZED POTASSIUM CITRATE / POTASSIUM ACETATE MIX).
7 UNIT SHALL HAVE CENTRIFUGAL FAN WITH AIR DELIVERY OF 380 TO 610 CFM, FAN SPEED CONTROLLER WILL BE INFINITELY VARIABLE.
8 UNIT SHALL BE ETL LISTED, TESTED TO UL300A STANDARDS, FAN MOTOR SHALL BE PERMANENTLY LUBRICATED AND MEET UL507.
9 UNIT SHALL INCLUDE A FUEL SHUT-OFF DEVICE FOR GAS & ELECTRIC APPLIANCES, ACTIVATED AT SUPPRESSION SYSTEM DISCHARGE.
10 UNIT SHALL ALSO AUTOMATICALLY DISCONNECT RANGE ELEMENT ONCE A CERTAIN PRE-SET TEMPERATURE IS REACHED.
11 UNIT SHALL HAVE MULTIPLE ALARM CONTACTS PRE-INSTALLED (LOCAL, REMOTE & TROUBLE ALARMS) AND AN AUDIBLE BUZZER.
12 LIGHTING SHALL BE BY 60 WATT SHATTER-PROOF BULB.

## DUCTLESS SPLIT SYSTEM SCHEDULE

### FAN COIL UNIT

| | |
|---|---|
| INDOOR UNIT MARK | FCU-1 |
| INDOOR UNIT TYPE | WALL |
| MAX SUPPLY CFM | 600 |
| MINIMUM O/A (CFM) | N/A |
| ENTERING AIR (DB/WB) | 78/64 |
| TOTAL COOLING CAP. (BTUH) | 22000 |
| SENSIBLE COOLING CAP. (BTUH) | 15400 |
| HEATING CAPACITY (BTUH) | 22000 |
| VOLTAGE/PHASE | 208/1 |
| MCA | N/A |
| MAX. FUSE SIZE | N/A |
| FLA | 0.2 |
| MANUFACTURER | LG |
| MODEL NO. | LSN240H |
| WEIGHT (LBS) | 28 |

### CONDENSING UNIT

| | |
|---|---|
| OUTDOOR UNIT MARK | FCCU-1 |
| VOLTAGE/PHASE | 208/1 |
| MCA | 14 |
| MAX. FUSE SIZE (AMPS) | 20 |
| POWER FACTOR (%) | 91.5 |
| AMB. AIR TEMP. (CLG°F/HTG°F) | 95/47 |
| REFRIGERANT | R-410A |
| COOLING MODE OPER. RANGE | 64°F - 118°F |
| HEATING MODE OPER. RANGE | 23°F - 75°F |
| MANUFACTURER | LG |
| MODEL NO. | LSU240H |
| WEIGHT (LBS) | 92 |
| EER (SEER) | (17.0) |
| HTG EFF. (HSPF) | 8.5 |
| MAX EQUIV. LINE LENGTH (FT) | 66 |
| MAX. VERTICAL RISE (FT) | 32.8 |

NOTES:

1 ELECTRICAL CONTRACTOR TO PROVIDE SINGLE CIRCUIT POWER FROM SERVICE TO OUTDOOR UNIT AND WIRE TO INDOOR UNIT.
2 PROVIDE INDOOR UNITS WITH MOUNTING BRACKETS.
3 CONTRACTOR TO PROVIDE 4" CONCRETE PAD TO ANCHOR MOUNT CONDENSING UNIT.
4 BOTH LIQUID AND SUCTION LINES MUST BE INSULATED (1/2" FLEXIBLE ELASTOMERIC IS ACCEPTABLE).
5 SIGHT GLASSES, FILTER DRYERS, AND FIELD SUPPLIED EXPANSION VALVES ARE NOT TO BE USED ON DAIKIN EQUIPMENT.
6 PROVIDE INVERTER DRIVEN COMPRESSOR FOR IMPROVED HUMIDITY CONTROL.
7 INSTALL PER MANUFACTURERS INSTRUCTIONS AND PIPING RECOMMENDATIONS.
8 PROVIDE WALL MOUNTED AND WIRED 7-DAY PROGRAMMABLE THERMOSTAT IN LIEU OF WIRELESS REMOTE.
9 PROVIDE CONDENSATE PUMP, FACTORY MOUNTED OR FIELD WIRED TO INDOOR UNIT (SINGLE POINT POWER).
10 PROVIDE INDOOR UNIT WITH 3 STAGE AIRFLOW CONTROL (H/M/L).

PRE-BID SET

NOT FOR CONSTRUCTION


SIGMAHN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501


PROJECT #: 13023
DRAWN BY: J.V.
CHECKED BY: G.H.
REVISION:
1:
2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS · J. GABRIEL HINOJOSA · 96585 · LICENSED PROFESSIONAL ENGINEER
05-04-2021


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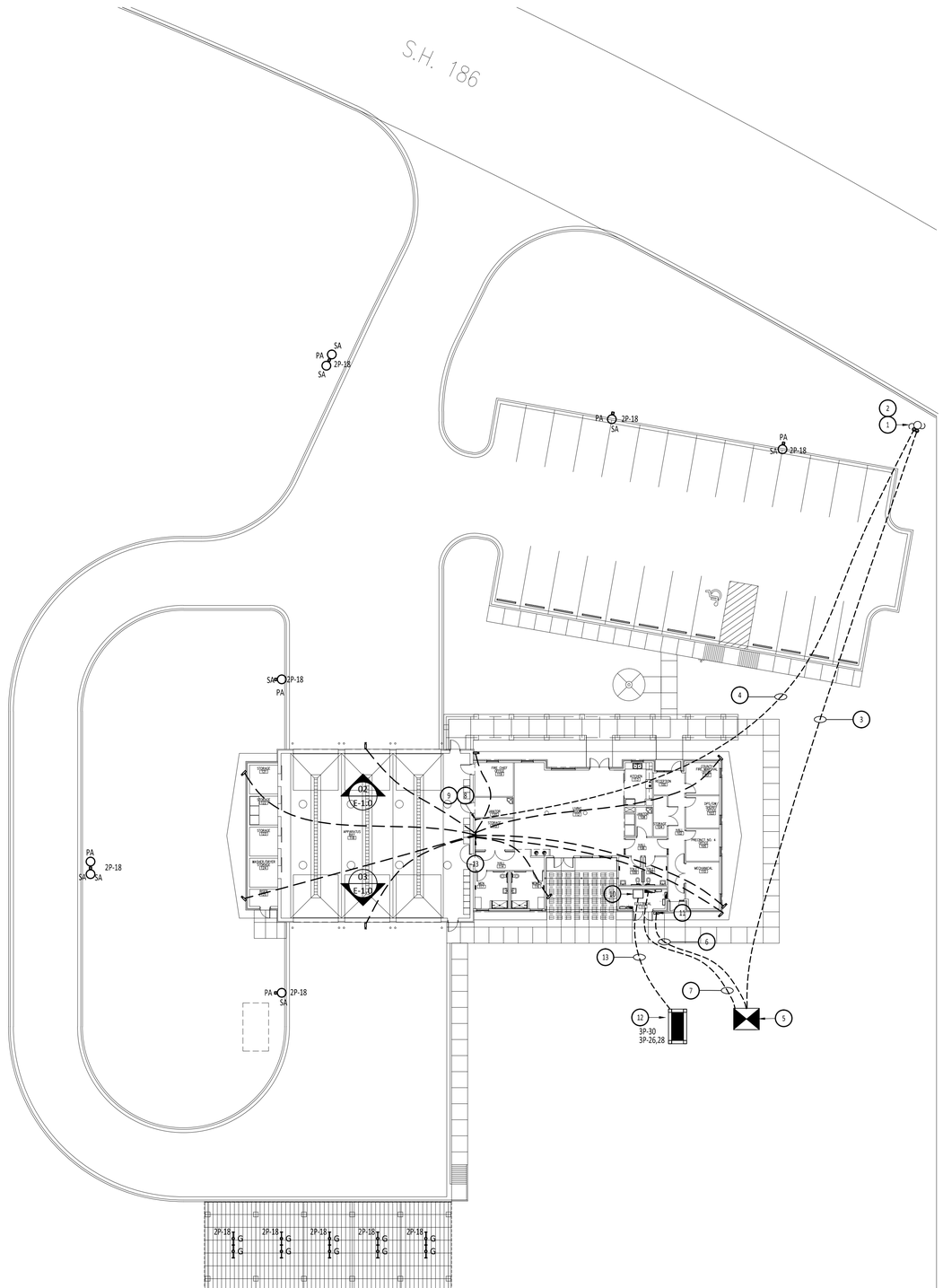
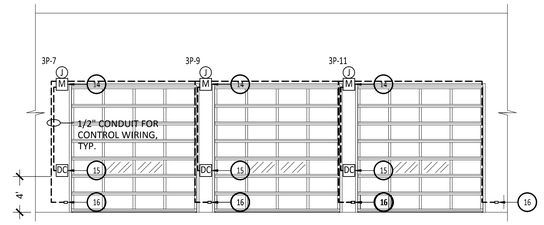
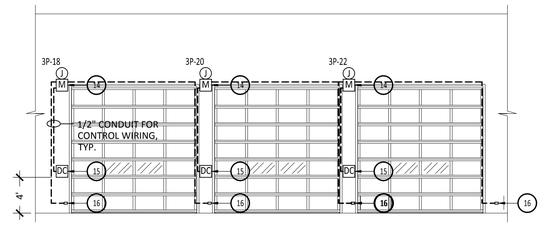


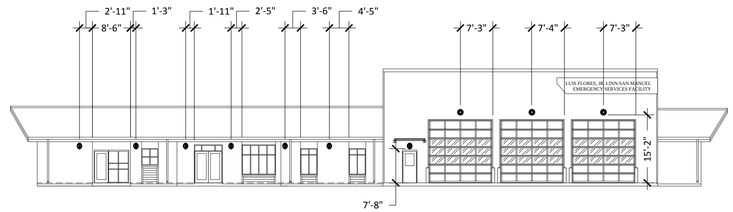

1 ELECTRICAL SITE PLAN
SCALE: 1" = 10'-0"



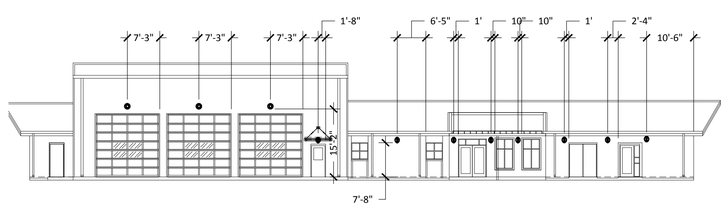

2 NORTH OVERHEAD DOORS INTERIOR ELEVELATION
SCALE: N.T.S




3 SOUTH OVERHEAD DOORS INTERIOR ELEVELATION
SCALE: N.T.S




4 NORTH BUILDING ELEVATION
SCALE: N.T.S




5 SOUTH BUILDING ELEVATION
SCALE: N.T.S.

## GENERAL NOTES:

1. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

## KEY NOTES:

1. APPROXIMATE LOCATION OF UTILITY POWER RISER POLE/UNDERGROUND PRIMARY.
2. APPROXIMATE LOCATION OF TELEPHONE RISER POLE/UNDERGROUND PRIMARY SERVICES.
3. FURNISH AND INSTALL 4-INCH CONDUIT WITH NYLON PULL CORD FOR PRIMARY ELECTRICAL SERVICE. CONDUIT MINIMUM DEPTH SHALL BE 48-INCHES TO TOP OF CONDUIT.
4. FURNISH AND INSTALL 4-INCH CONDUIT WITH NYLON PULL CORD FOR TELEPHONE SERVICE. CONDUIT MINIMUM DEPTH SHALL BE 24-INCHES TO TOP OF CONDUIT.
5. APPROXIMATE LOCATION OF UTILITY PAD MOUNTED TRANSFORMER.
6. FURNISH AND INSTALL 1/2- INCH PVC CONDUIT FOR METERING CABLE. MINIMUM DEPTH OF 36- INCHES TO TOP OF CONDUIT.
7. ELECTRICAL SERVICE ENTRANCE CONDUCTORS. REFER TO RISER DIAGRAM FOR CONDUIT AND CABLING REQUIREMENTS. MINIMUM DEPTH OF 36-INCHES TO TOP OF CONDUIT.
8. APPROXIMATE LOCATION OF TELEPHONE DEMARCATIONS. REFER TO DETAILS FOR INTER-SYSTEMS GROUNDING REQUIREMENTS.
9. FURNISH AND INSTALL QTY.(1) 4-INCH RIGID METAL CONDUIT WITH 200 LB NYLON PULL CORD 12-INCHES FROM WEST WALL. CONDUIT SHALL BE PAINTED BLUE AND SHALL EXTEND 4-INCHES ABOVE CONCRETE FOUNDATION SLAB.
10. APPROXIMATE LOCATION OF AUTOMATIC TRANSFER SWITCH.
11. APPROXIMATE LOCATION OF STANDBY GENERATOR. FURNISH AND INSTALL CIRCUITS FOR BLOCK HEATER AND BATTERY CHARGER CONSISTING OF 2#10, 1#10G, 3/4 INCH CONDUIT FOR BLOCK HEATER AND 2#12, 1#12G, 1/2 INCH CONDUIT FOR BATTERY CHARGER.
12. STANDBY ELECTRICAL SERVICE CONDUCTORS. REFER TO RISER DIAGRAM FOR CONDUIT AND CABLING REQUIREMENTS. MINIMUM DEPTH OF 36-INCHES TO TOP OF CONDUIT.
13. FURNISH AND INSTALL CAMERA WIREWAY NEMA 1, 16"L X 8"H X 8"W. FURNISH WITH STRESS RELIEF CABLE J-HOOKS. INSTALL QTY.(2) 4-INCH CONDUITS FROM WIREWAY TO TELECOM CABINET. REFER TO DETAILS FOR MOUNTING REQUIREMENTS.
14. ELECTRIC MOTOR OPERATOR.
15. OVERHEAD DOOR OPERATOR CONTROLS.
16. ENTRAPMENT PROTECTION SENSORS. EXTEND CABLING TO BUMPER SENSORS AS REQUIRED.

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McAllen, Texas 78501

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2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT: LINN–SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

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STATE OF TEXAS
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LICENSED PROFESSIONAL ENGINEER
2021.12.20

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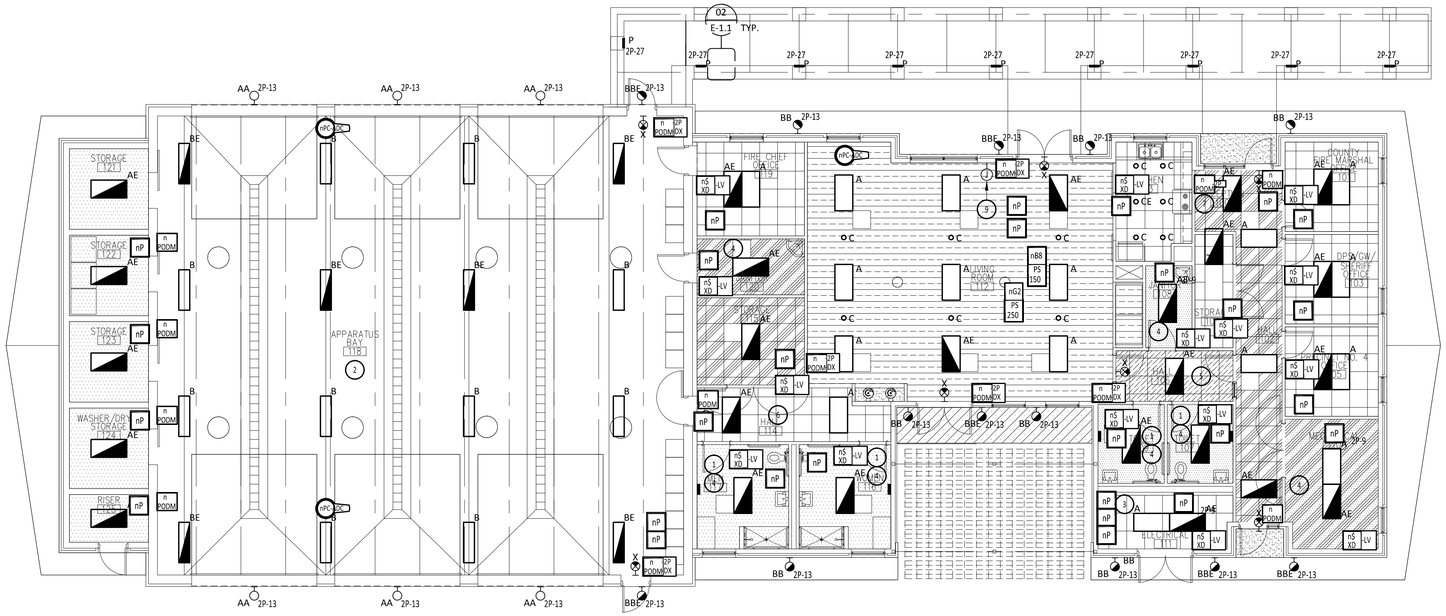



## LIGHTING CONTROLS LEGEND:

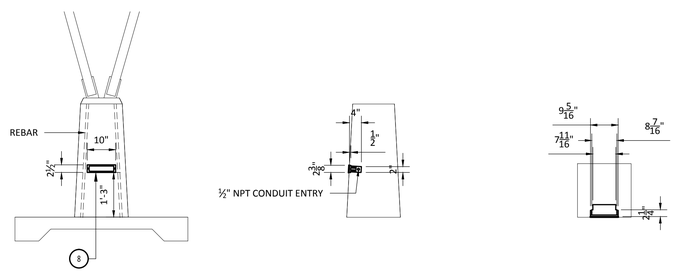
- nB8 PS 150 — NBRG 8 KIT
  BRIDGE-8 PORT WITH 150
  MA POWER SUPPLY
- nG2 PS 150 PS 150 — NGWY2 KIT
  NGATEWAY2 KIT CONSISTS OF A NGWY2 CTRL UNIT, A NGATEWAY2 GFX, TWO PS 150 (150 MA POWER SUPPLY), SENSORVIEW SOFTWARE MAX DEVICES 1500
- n PODM — NPODM [COLOR]
  1 CHANNEL ON/OFF TOGGLE
- n PODM 2P — nPODM 2P [COLOR]
  2 CHANNEL ON/OFF TOGGLE
- n PODM 2P DX — NPODM 2P DX [COLOR]
  2 CHANNEL ON/OFF TOGGLE WITH DIMMING
- nS XD LV — NWSX PDT LV [COLOR]
  WALL SWITCH DECORATOR SENSOR, DUAL TECHNOLOGY (PDT), LOW VOLTAGE
- nPC ADC — NCM PC ADC
  COMBINATION ON/OFF & AUTOMATIC DIMMING CONTROL PHOTOCELL-CEILING MOUNT, LOW VOLTAGE
- nP — nPP16
  POWER PACK: 120/277 VAC

NOTES

1. SENSORS IN ELECTRICAL/MECHANICAL LOCATIONS NEED TO BE VERIFIED WITH AUTHORITY HAVING JURISDICTION. REFER TO NEC 110.26.D)
2. "ILLUMINATION. ILLUMINATION SHALL BE PROVIDED FOR ALL WORKING SPACES ABOUT SERVICE EQUIPMENT, SWITCHBOARDS, PANELBOARDS, OR MOTOR CONTROL CENTERS INSTALLED INDOORS. ADDITIONAL LIGHTING OUTLETS SHALL NOT BE REQUIRED WHERE THE WORK SPACE IS ILLUMINATED BY AN ADJACENT LIGHT SOURCE OR AS PERMITTED BY 210.70(A)(1), EXCEPTION NO. 1, FOR SWITCHED RECEPTACLES. IN ELECTRICAL EQUIPMENT ROOMS, THE ILLUMINATION SHALL NOT BE CONTROLLED BY AUTOMATIC MEANS ONLY."
3. SENSOR PLACEMENT AND TYPES WERE PLACED WITH CURRENT PROJECT INFORMATION. ADDITIONAL SENSORS AND TYPES OF SENSORS MAY BE REQUIRED TO PROVIDE COMPLETE COVERAGE DEPENDING ON DRAWING CHANGES, EMS/BMS, FINAL PARTITION HEIGHT/PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT/PLACEMENT AND SHELVING HEIGHT/PLACEMENT.
4. CEILING MOUNTED EXTENDED RANGE 360° SENSORS: FOR MAXIMUM DISTANCE ROTATE TO SENSOR CLOCKWISE SO THAT THE SCREW AXIS IS POSITIONED 7.5° OFF THE ENTRANCE AXIS. WHEN WALKING ACROSS A SENSOR'S BEAM, DETECTION WILL OCCUR AT APPROXIMATELY 28', WHEN WALKING DIRECTLY INTO A SENSOR'S BEAM, DETECTION WILL OCCUR AT APPROXIMATELY 24'. (REFER TO CUT SHEET FOR PICTORIAL OF ALIGNMENT)
5. SENSOR MASKING KITS MAY BE REQUIRED TO LIMIT COVERAGE DEPENDING ON YOUR REQUIREMENTS.
6. FURNISH ALL WIRING DEVICES WITH WHITE FINISH.

| SENSOR FEATURE OPTIONS | | WALL SWITCH/POD COLOR OPTIONS | |
|---|---|---|---|
| ABBREVIATION | DEFINITION | ABBREVIATION | DEFINITION |
| ADC | PHOTOCELL WITH DIMMING | IV | IVORY |
| D | DIMMING | GR | GREY |
| R | RELAY | WH | WHITE |
| DZ | DUAL ZONE | AL | ALMOND |
| LV | LOW VOLTAGE | SENSOR ACCESSORIES | |
| LT | LOW TEMP | NAME | DEFINITION |
| NL | NIGHT LIGHT | WV BR | WIDE VIEW CEILING MOUNTING BRACKET |
| P | PHOTOCELL | FB1 | DEEP FIXTURE BRACKET |
| PDT | PASSIVE DUAL TECHNOLOGY | FB2 | DEEP FIXTURE BRACKET WITH HARDWARE |
| V | VANDAL RESISTANT | | |
| 2P | 2 POLE | | |
| 347 | 347 VOLT | | |
| 208 | 208 OR 240 VOLT | | |
| 480 | 480 VOLT | | |

1 ELECTRICAL LIGHTING PLAN
SCALE: 1/8" = 1'-0"




FRONT VIEW — SECTION VIEW — PLAN VIEW

2 CANOPY COLUMN DETAIL
SCALE: N.T.S.

## GENERAL NOTES:

1. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.

## KEY NOTES:

1. POWER PACKS TO BE USED TO CONTROL RESTROOM EXHAUST FAN. FAN SHALL REMAIN ON 5 MINUTES AFTER LIGHTS ARE TURNED OFF. POWER PACK WILL ALSO CONTROL THE COVE LIGHT FIXTURE TYPE C.
2. FURNISH AND INSTALL LIGHT FIXTURES IN THIS SPACE AT 20' AFF.
3. nPOD 2P SHALL CONTROL EXTERIOR LIGHTING. REFER TO DETAILS FOR REQUIREMENTS.
4. FURNISH FIXTURES WITH FLANGE KIT.
5. THIS FIXTURE SHALL BE CONTROLLED WITH HALL LIGHTING 102.
6. THESE LIGHT FIXTURE SHALL BE CONTROLLED WITH LIVING ROOM 112.
7. THIS LIGHT SWITCH SHALL CONTROL EXTERIOR LIGHTING.
8. RECESSED WALL LUMINAIRE. COORDINATE WITH STRUCTURAL COLUMN DETAILS TO AVOID CONFLICT WITH STEEL REBAR. ELECTRICAL CONTRACTOR SHALL FURNISH ALL ROUGH-IN CONCEALED WITHIN CONCRETE COLUMNS. SURFACE MOUNTED J-BOXES, AND CONDUIT WILL NOT BE ACCEPTABLE.
9. FURNISH AND INSTALL SINGLE GANG BOX FOR SOLATUBE DIMMING CONTROL 22 GAUGE CABLING AND WIRING DEVICE (DIMMER) SHALL BE BY SOLATUBE MANUFACTURER. CONDUIT AND ELECTRICAL CONNECTIONS SHALL BE BY THE ELECTRICAL CONTRACTOR. ROUTE CABLING AND 1/2-INCH CONDUIT TO DIMMER CONTROL BOX LOCATED AT THE SOLATUBE.

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LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS · JOSE ANTONIO NICANOR · 108783 · LICENSED PROFESSIONAL ENGINEER · 04/04/2020

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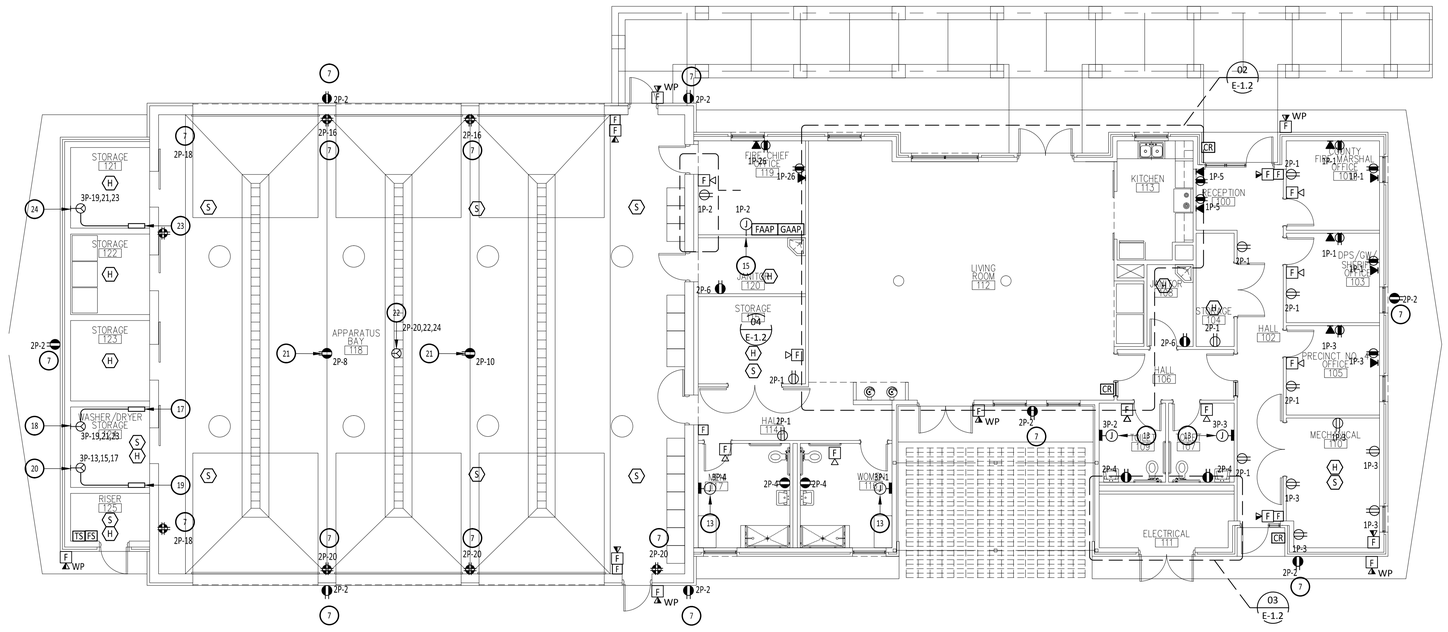
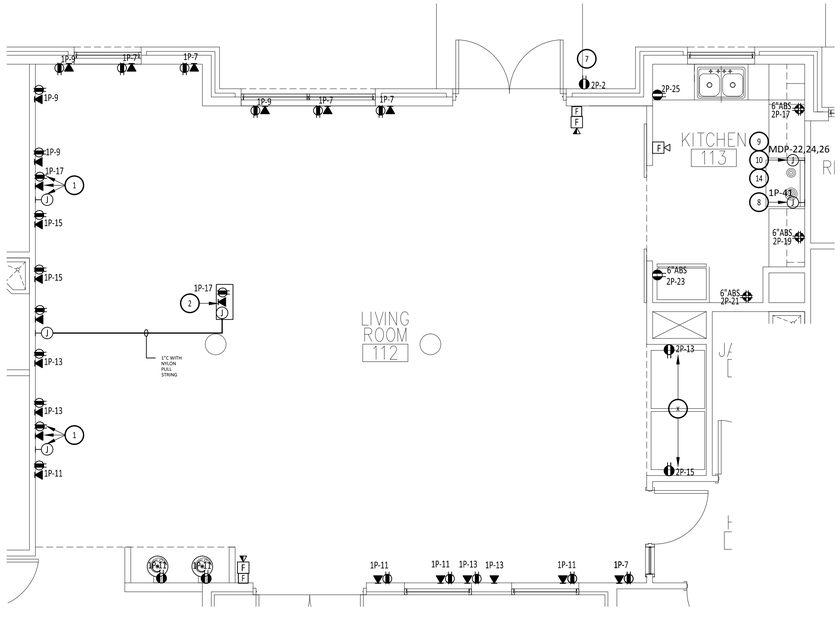


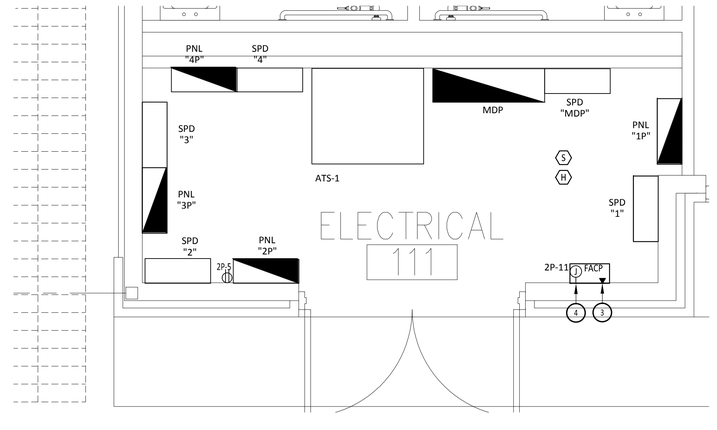

1 ELECTRICAL POWER AND SPECIAL SYSTEMS PLAN

SCALE: 1/8" = 1'-0"



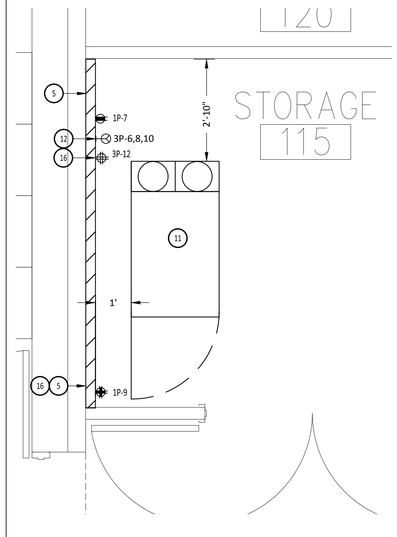

2 ELECTRICAL POWER AND SPECIAL SYSTEMS ENLARGMENT PLAN

SCALE: 1/4" = 1'-0"




3 ELECTRICAL EQUIPMENT ENLARGMENT PLAN

SCALE: 1/2" = 1'-0"




4 TELECOM. EQUIP. PLAN

SCALE: 1/2" = 1'-0"

## KEY NOTES:

1. FURNISH AND INSTALL QTY.(2) 4-INCH SQUARE BOX WITH MUD RING ADAPTERS FOR SINGLE FACE PLATE FOR TELEVISION AUDIO/VIDEO DEVICES. MOUNT AT ONE (1) 96-INCHES ABOVE FINISH FLOOR. MOUNT ONE (1) AT 15-INCHES ABOVE FINISH FLOOR. FURNISH AND INSTALL 1-INCH CONDUIT BETWEEN J-BOXES.
2. APPROXIMATE LOCATION OF CEILING MOUNTED PROJECTOR MOUNTING RECESSED AUDIO/VIDEO J-BOX AND RECESSED RECEPTACLE. FURNISH AND INSTALL 4-INCH SQUARE J-BOX FOR AUDIO/VIDEO.
3. FURNISH AND INSTALL TWO TELEPHONE DROPS FOR FIRE ALARM. MOUNT AT THE SAME ELEVATION OF THE FIRE ALARM CONTROL PANEL.
4. FURNISH AND INSTALL J-BOX FOR POWER TO FIRE ALARM CONTROL PANEL. MOUNT AT THE SAME ELEVATION OF THE FIRE ALARM CONTROL PANEL.
5. APPROXIMATE LOCATION OF TELEPHONE BACK BOARD.
6. FURNISH AND INSTALL QTY.(1) 4-INCH SQUARE BOX WITH MUD RING ADAPTERS FOR SINGLE FACE PLATE FOR TELEVISION AUDIO/VIDEO DEVICES. MOUNT AT 155-INCHES ABOVE FINISH FLOOR. FURNISH AND INSTALL 1-INCH CONDUIT BETWEEN J-BOX AND J-BOX LOCATED AT THE TELEVISION. REFER TO KEYNOTE 1.
7. FURNISH AND INSTALL EXTRA-DUTY WEATHER PROOF WHILE-IN-USE HOODS EQUAL TO THOMAS & BETTS RED-DOT CODE KEEPER FOR ALL GFCI DUPLEX RECEPTACLES LOCATED ON THE EXTERIOR OF THE BUILDING. ALL CONDUIT SHALL BE CONCEALED WITHIN WALLS. SURFACE MOUNTED CONDUIT, OR J-BOX ARE NOT PERMITTED.
8. FURNISH AND INSTALL POWER FOR HOOD CONTROL AND LIGHTS. COORDINATE FINAL PLACEMENT WITH HOOD WIRING CHASE.

## GENERAL NOTES:

1. REFER TO SHEET MEP-1.0 FOR GENERAL NOTES.
2. REFER TO DETAIL SHEETS FOR PROJECTORS, PROJECTOR SCREEN, PROJECTOR MOUNTING HARDWARE, AUDIO/VIDEO EQUIPMENT, MULTIMEDIA CONTROLLERS AND OTHER SPECIAL SYSTEM EQUIPMENT.

## KEY NOTES CONT.:

9. ROUTE POWER TO ELECTRIC RANGE THROUGH SHUNT TRIP BREAKER LOCATED IN THE HOOD CONTROL PANEL. MAKE FINAL CONNECTIONS TO EQUIPMENT PER MANUFACTURER RECOMMENDATIONS.
10. INTERFACE FIRE ALARM DEVICE WITH HOOD CONTROL PANEL.MAKE FINAL CONNECTIONS TO EQUIPMENT PER MANUFACTURER RECOMMENDATIONS.
11. APPROXIMATE LOCATION OF TELECOMMUNICATION EQUIPMENT COOLING CABINET "RACK-1". REFER TO DETAILS FOR RACK REQUIREMENTS.
12. FURNISH POWER FOR CABINET COOLING UNIT.
13. POWER FOR HAND DRYERS. FURNISH AND INSTALL SO THAT J-BOX ALIGNS WITH HAND DRYER BOTTOM MOUNTING SCREW.
14. FURNISH AND INSTALL RECEPTACLE TYPE NEMA 14-50R FOR RANGE. FURNISH AND INSTALL BRANCH CIRCUIT CONSISTING OF 3#6, 1#10G, 3/4-INCH CONDUIT. CONTRACTOR MUST VERIFY WITH THE TYPE OF RANGE USED PRIOR TO INSTALLING RECEPTACLE, CIRCUIT AND BREAKER.
15. APPROXIMATE LOCATION OF GENERATOR ANNUCIATING PANEL. MOUNT ADJACENT TO FIRE ALARM ANNUCIATING PANEL.
16. FURNISH AND INSTALL POWER FOR UPS. COORDINATE WITH OWNER RECEPTACLE REQUIRED. FURNISH BRANCH CIRCUIT CONSISTING OF 3#10, 1#12G, 1/2 INCH GROUND.
17. FURNISH AND INSTALL 200A/NF/3P, NEMA 4, SAFETY DISCONNECT SWITCH FOR POWER TO DRYER.
18. APPROXIMATE LOCATION OF ELECTRICAL CONNECTION FOR COMMERCIAL DRYER. FURNISH AND INSTALL FEEDERS CONSISTING OF 3#1, 1#6G, 1-1/4 INCH CONDUIT. ELECTRICL CONTRACTOR SHALL REFER TO EQUIPMENT INSTALLATION MANUAL, AND VERIFY VOLTAGE ROTATION REQUIREMENTS.
19. FURNISH AND INSTALL 60A/NF/3P, NEMA 4, SAFETY DISCONNECT SWITCH FOR POWER TO WASHER.
20. APPROXIMATE LOCATION OF ELECTRICAL CONNECTION FOR COMMERCIAL WAHSER. FURNISH AND INSTALL FEEDERS CONSISTING OF 3#6, 1#10G, 3/4 INCH CONDUIT. ELECTRICAL CONTRACTOR SHALL REFER TO EQUIPMENT INSTALLATION MANUAL, AND VERIFY VOLTAGE ROTATION REQUIREMENTS.
21. FURNISH AND INSTALL COMPACT EFFICIENCY HEAVY DUTY POWER CORD REEL WITH INCANDESCENT CAGE DROP LIGHT EQUAL TO COXREELS PC10-3016 E OR EQUAL. SUPPORT TO BUILDING JOIST. MOUNT DUPLEX RECEPTACLE ADJACENT TO REEL.+
22. APPROXIMATE LOCATION OF BIG ASS FAN. FURNISH AND INSTALL INTERFACE RELAY TO FIRE ALARM CONTROL PANEL. FURNISH AND INSTALL THREE PHASE NEMA RECEPTACLE PER MANUFACTURER RECOMMENDATIONS. MOUNT RECEPTACLE ADJACENT TO FAN CEILING MOUNTED CONTROLLER.
23. FURNISH AND INSTALL 60A/NF/3P NEMA 4, SAFETY DISCONNECT SWITCH FOR POWER TO AIR COMPRESSOR.
24. APPROXIMATE LOCATION OF ELECTRICAL CONNECTION FOR AIR COMPRESSOR. FURNISH AND INSTALL 3#6, 1#10G,1-INCH CONDUIT.

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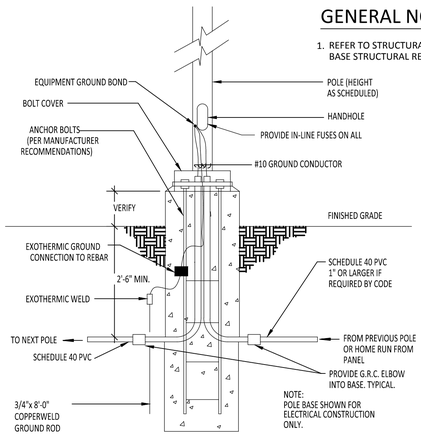
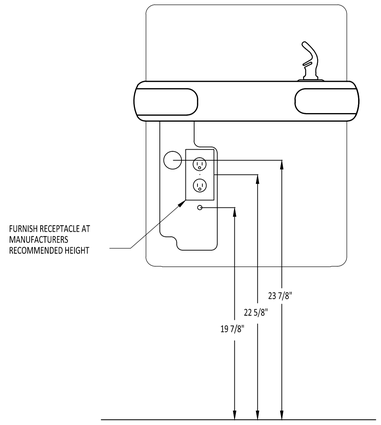
## GENERAL NOTES:

1. REFER TO STRUCTURAL DRAWINGS FOR POLE BASE STRUCTURAL REQUIREMENTS.




## 1 TYPICAL LIGHT POLE ELECTRICAL DETAIL

SCALE: N.T.S.

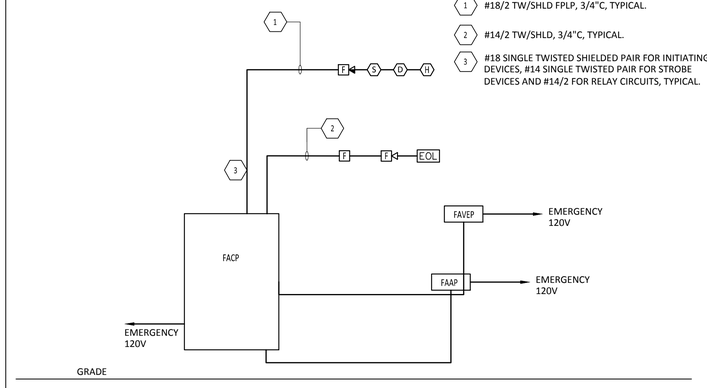



## 2 WATER COOLER RECEPTACLE DETAIL

SCALE: N.T.S.

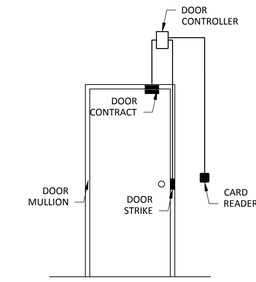
## KEYED NOTES:

1. #18/2 TW/SHLD FPLP, 3/4"C, TYPICAL.
2. #14/2 TW/SHLD, 3/4"C, TYPICAL.
3. #18 SINGLE TWISTED SHIELDED PAIR FOR INITIATING DEVICES, #14 SINGLE TWISTED PAIR FOR STROBE DEVICES AND #14/2 FOR RELAY CIRCUITS, TYPICAL.



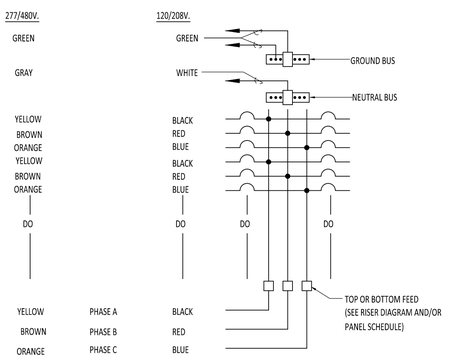

## 3 FIRE ALARM RISER DIAGRAM

SCALE: N.T.S.



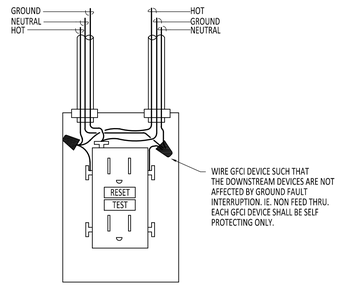

## 4 SINGLE DOOR ACCESS CONTROL DETAIL

SCALE: N.T.S.



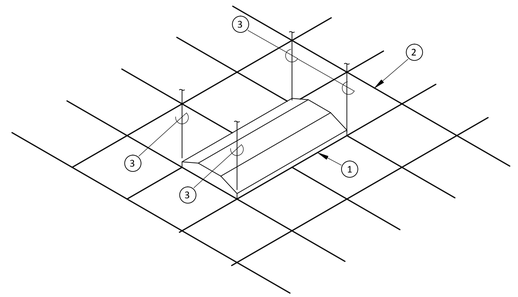

## 5 TYPICAL PANEL COLOR CODE DETAIL

SCALE: N.T.S.




## 6 GFCI RECEPTACLE - WIRING DIAGRAM

SCALE: N.T.S.

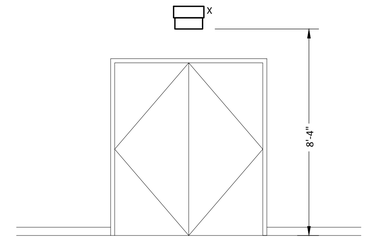


NOTES BY SYMBOL " "

1. 2'x 4' LAY-IN FLUORESCENT FIXTURE
2. SUSPENDED CEILING
3. TIE WIRE, CONNECT TO ALL FOUR CORNERS OF FIXTURE TO STRUCTURE ABOVE, INDEPENDENT OF CEILING SUPPORTS.

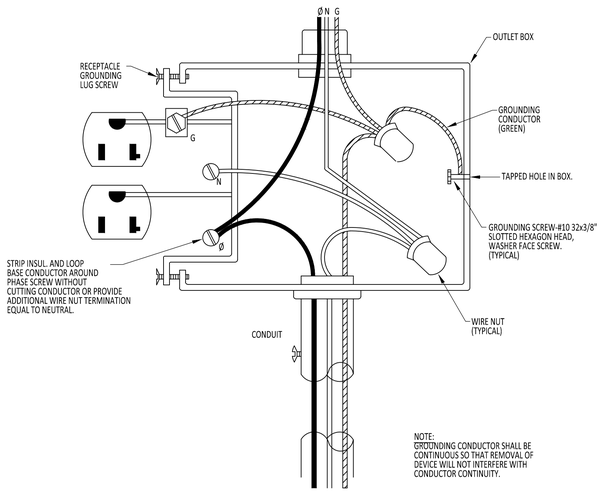
## 7 TYPICAL LAY-IN FIXTURE SUPPORT

SCALE: N.T.S.



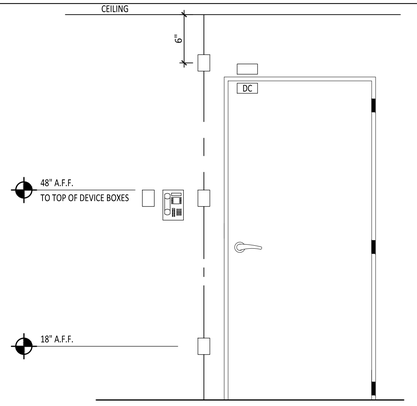

## 8 EXIT LIGHT INSTALLATION

SCALE: N.T.S.




## 9 TYPICAL RECEPTACLE GROUNDING DETAIL

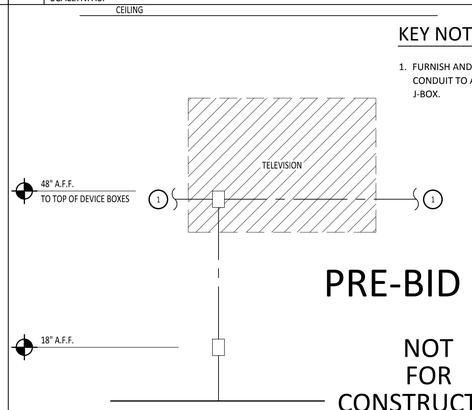
SCALE: N.T.S.




NOTES:
- VIEW IS OF INTERIOR LOOKING OUT. IMAGE MAY BE MIRRORED.
- WHEN POSSIBLE KEEP WALL DEVICES ALIGNED NEXT TO DOOR.

## 10 GENERAL DEVICE DETAIL

SCALE: N.T.S.




## 11 TELEVISION DEVICE DETAIL

SCALE: N.T.S.

PROJECT #: 13023
DATE:
DRAWN BY: J.V.
CHECKED BY: J.A.N.
REVISION:
1:
2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT: LINN–SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

STATE OF TEXAS · JOSE ANTONIO NICANOR · 108783 · LICENSED PROFESSIONAL ENGINEER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# ELECTRICAL GENERAL LEGEND

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

| SYMBOL | DESCRIPTION | MNTG. HT. UNO (SEE NOTE 1) |
|---|---|---|
| | **POWER** | |
| | SINGLE RECEPTACLE - 20A/125V/1P/3W/G NEMA 5-20R | 15" AFF |
| | DUPLEX RECEPTACLE, 20A, GROUND FAULT INTERCEPTOR; C = CEILING MOUNTED. | 15" AFF |
| | DUPLEX RECEPTACLE, 20A, INSULATED GROUND DEVICE WITH INSULATED GROUNDING CONDUCTOR; CLG = CEILING MOUNTED. | 15" AFF |
| | QUADPLEX RECEPTACLE, 20A, GROUND FAULT INTERCEPTOR; CLG = CEILING MOUNTED. | AS REQD. |
| | QUADPLEX RECEPTACLE, 20A, INSULATED GROUND DEVICE WITH INSULATED GROUNDING CONDUCTOR; CLG = CEILING MOUNTED. | AS REQD. |
| E | DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT | |
| | SPECIAL PURPOSE RECEPTACLE; MOTOR OR EQUIPMENT CONNECTION | |
| J | JUNCTION BOX - SIZE & MOUNTING AS REQUIRED | 15" AFF |
| | MULTIOUTLET ASSEMBLY - LENGTH AND OUTLET SPACING AS INDICATED | - |
| 30/-/3 | DISCONNECT SWITCH - 30/-/3 INDICATES 30A, 3-POLE, NONFUSED; 30/30/3 INDICATES 30A, 3-POLE, 30A FUSE | AS REQD. |
| CB 30/3 | CIRCUIT BREAKER DISCONNECT SWITCH - THERMAL MAGNETIC CB IN NEMA 1 ENCL; AMPS/POLES AS INDICATED | AS REQD. |
| 30/30/3 | DISCONNECT SWITCH - 30/30/3 INDICATES 30A, 3-POLE, 30A FUSE | AS REQD. |
| 2 | MOTOR STARTER FVNR UNO; NUMBER INDICATES NEMA SIZE | AS REQD. |
| CB 2 | COMBINATION MOTOR CONTROLLER/DISCONNECT SWITCH | AS REQD. |
| | PANELBOARD | - |
| | MOTOR | - |
| ~ | SINGLE LINE CONTINUATION | - |
| GAAP | GENERATOR ANNUNCIATOR PANEL | - |
| X,X,X | THREE SINGLE POLE DEVICE CIRCUIT NUMBERS | - |
| X/X/X | MULTI-POLE DEVICE CIRCUIT NUMBERS | - |
| | TRANSFORMER | - |

| SYMBOL | DESCRIPTION | MNTG. HT. UNO (SEE NOTE 1) |
|---|---|---|
| | **FIRE ALARM** | |
| DH | DOOR HOLDER OR DOOR RELEASE | - |
| F | FIRE ALARM PULL STATION | 48" AFF |
| F | FIRE ALARM AUDIBLE/VISUAL SIGNAL; WP = WEATHER PROOF; S = WITH INTEGRAL VOICE ACTIVATED SPEAKER. | 80" AFF |
| F | FIRE ALARM AUDIBLE SIGNAL; WP = WEATHER PROOF; S = WITH INTEGRAL VOICE ACTIVATED SPEAKER. | 80" AFF |
| F | FIRE ALARM VISUAL SIGNAL; WP = WEATHER PROOF; S = WITH INTEGRAL VOICE ACTIVATED SPEAKER. | 80" AFF |
| FS | FIRE ALARM SPRINKLER FLOW SWITCH | - |
| TS | FIRE ALARM SPRINKLER TAMPER SWITCH | - |
| S | FIRE ALARM SMOKE DETECTOR CEILING OR WALL MOUNTED | 80" AFF |
| H | HEAT DETECTOR CEILING OR WALL MOUNTED | - |
| D | DUCT SMOKE DETECTOR | - |
| FACP | FIRE ALARM CONTROL PANEL | - |
| FAAP | FIRE ALARM ANNUNCIATOR PANEL | - |
| VAFP | VOICE ACTIVATED FIRE ALARM PANEL | 80" AFF |

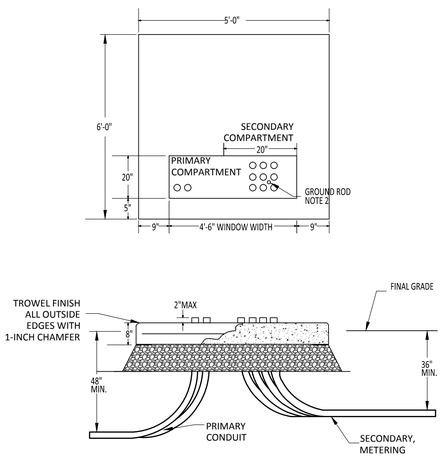
## GENERAL ABBREVIATIONS

ABS ABOVE BACK SPLASH
AFF ABOVE FINISHED FLOOR
BFC BELOW FINISHED CEILING
C CONDUIT
CB CIRCUIT BREAKER
CLG CEILING
EC EMPTY CONDUIT
EP ELECTRICAL PRIMARY
EX EXISTING
F FUSE
G GROUND (EQUIPMENT)
GFI GROUND FAULT INTERRUPTER
HCC HORIZONTAL CROSS CONNECT
IC INTERRUPTING CAPACITY
ICC INTERMEDIATE CROSS CONNECT
IG ISOLATED GROUND
MTD MOUNT OR MOUNTED
NC (N.C.) NORMALLY CLOSED
NF NONFUSED
NIC NOT IN CONTRACT
NL NIGHT LIGHT
NO (N.O.) NORMALLY OPEN
PNL PANEL
RCPT(S) RECEPTACLE(S)
SD (S.D.) SPACE ONLY
SP SPARE
ST (S.T.) SHUNT TRIP
SW SWITCH
TYP TYPICAL
UF UNDERFLOOR
UG UNDERGROUND
UNO UNLESS NOTED OTHERWISE
WG WIRE GUARD
WP WEATHERPROOF
XFMR TRANSFORMER

| SYMBOL | DESCRIPTION | MNTG.HT.UNO (SEE NOTE 1). |
|---|---|---|
| | **SPECIAL SYSTEMS (ROUGH IN ONLY)** | |
| AV | AUDIO, VIDEO, DATA, POWER POKE THRU DEVICE; FURNISH AND INSTALL LEGRAND WIREMOLD TYPE EVOLUTION 8AT SERIES. FURNISH WITH THE FOLLOWING: RECEPTACLES, SIX PORT DATA COMMUNICATION DEVICE, AUDIO/VIDEO DEVICE AND COVER TO MATCH FINISH FLOOR TYPE (CARPET, TILE WOOD, ETC.) | FLOOR |
| | TELEPHONE OR DATA OUTLET. WALL MOUNTED , FURNISH AND INSTALL 4"-SQUARE J-BOX WITH MUDRINGS. ROUTE 1-INCH CONDUIT WITH PULL STRING FROM J-BOX TO A LOCATION ACCESSIBLE ABOVE CEILING, U.N.O. FURNISH J-BOX WITH MUD RING ADAPTER. FURNISH CONDUIT WITH CONDUIT BUSHINGS. | 15" AFF |
| AV | AUDIO AND VIDEO WALL DEVICE. WALL MOUNTED, FURNISH AND INSTALL 4"-SQUARE J-BOX WITH MUDRINGS ADAPTERS. ROUTE 1-1/2 INCH CONDUIT WITH PULL STRING FROM J-BOX TO A LOCATION ACCESSIBLE ABOVE CEILING, U.N.O. FURNISH WITH CONDUIT BUSHINGS. | 15" AFF |
| MM | MULTIMEDIA CONTROLLER. FURNISH AND INSTALL 4"-SQUARE J-BOX WITH MUDRINGS ADAPTERS. ROUTE 1-1/2 INCH CONDUIT WITH PULL STRING FROM J-BOX TO A LOCATION ACCESSIBLE ABOVE CEILING, U.N.O. FURNISH WITH CONDUIT BUSHINGS. | 48" AFF |
| CR | SECURITY SYSTEM CARD READER. FURNISH AND INSTALL SINGLE GANG J-BOX. ROUTE 3/4" CONDUIT WITH PULL STRING FROM J-BOX TO A LOCATION ACCESSIBLE ABOVE CEILING, U.N.O. FURNISH WITH CONDUIT BUSHINGS. | 48" AFF |
| T | ELECTRIFIED HINGES OR POWER TRANSFER DEVICE. FURNISH WITH CABLE TO GO BETWEEN ANY HARDWARE AND HINGE. | AS REQUIRED |
| T | EXIT DEVICE (ELECTRIC STRIKE, ELECTROMAGNETIC). FURNISH AND INSTALL J-BOX ABOVE CEILING, DIRECTLY ABOVE DOOR. | AS REQUIRED |
| | SURVEILLANCE CAMERA. COORDINATE MOUNTING HEIGHT WITH OWNER. FURNISH AND INSTALL 4"-SQUARE BOX WITH 1-INCH CONDUIT WITH PULL STRING FROM J-BOX TO A LOCATION ACCESSIBLE ABOVE BUILDING INTERIOR CEILING, U.N.O. | AS REQUIRED |
| CR KP | ACCESS CONTROL KEYPAD OR CARD READER. FURNISH AND INSTALL SINGLE GANG J-BOX WITH 1/2 INCH CONDUIT WITH PULLS TRING. ROUTE CONDUIT TO A LOCATION ACCESSIBLE ABOVE CEILING. FURNISH WITH CONDUIT BUSHINGS. | 48" AFF |
| MD | MOTION DETECTION SENSOR. FURNISH AND INSTALL MOTION DETECTION DEVICE AND CABLING. ROUTE CABLING TO INTRUSION DETECTION PANEL. | AS REQUIRED |
| D | DOOR CONTACTS "STATUS SWITCH". FURNISH AND INSTALL MOTION DOOR STATUS DEVICE AND CABLING. ROUTE CABLING TO INTRUSION DETECTION PANEL. | AS REQUIRED |
| G | ACOUSTIC GLASS BREAK DETECTORS. FURNISH AND INSTALL MOTION DOOR STATUS DEVICE AND CABLING. ROUTE CABLING TO INTRUSION DETECTION PANEL. | AS REQUIRED |
| IDS | INTRUSION DETECTION SYSTEM PANEL. (DMP-XR500N) | AS REQUIRED |

NOTES:
1. 48" AFF INDICATES TO TOP OF DEVICE; 15" AFF INDICATES TO BOTTOM OF DEVICE; ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.

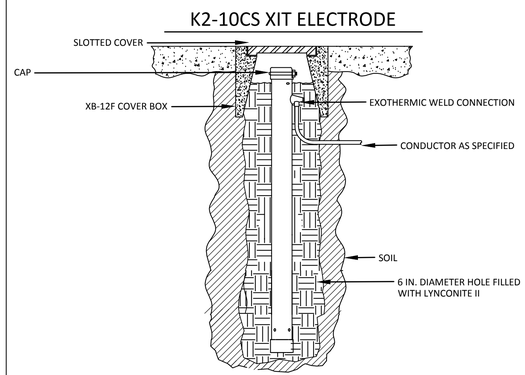
1 ELECTRICAL GENERAL LEGEND
SCALE: N.T.S




## GENERAL NOTES:

A. PAD ASSEMBLIES INCLUDE SITE PREPARATION, BEDDING AND DRAINAGE.
B. SLABS MAY BE PRECAST OR POURED IN PLACE.
C. CONCRETE TESTING 4000 POUNDS PER SQUARE INCH.
D. STEEL REINFORCING SHOULD BE NO. 4 REAR, AATSM-A615 GRADE 60. PLACE APPROXIMATELY 6" OPPOSITE CORNER EACH WAY AND SECURELY TIED TOGETHER.
E. MINIMUM CONCRETE COVER OVER REINFORCING STEEL 5 INCHES.
F. WOOD FLOAT FINISH, LEAVING NO DEPRESSION.
G. CONTACT MVEC REPRESENTATIVE TO INSPECT BEFORE POURING CONCRETE.
H. A CLEAR AREA SHOULD BE MAINTAINED FOR 10 FEET IN FRONT OF PADMOUNT.
I. TOP OF PAD SHOULD BE MINIMUM OF 3" ABOVE GRADE AND BOTTOM OF PAD A MINIMUM OF 5" BELOW GRADE.
J. CONDUITS SHOULD BE IN FRONT BUT NOT UNDER WEIGHT OF TRANSFORMER.

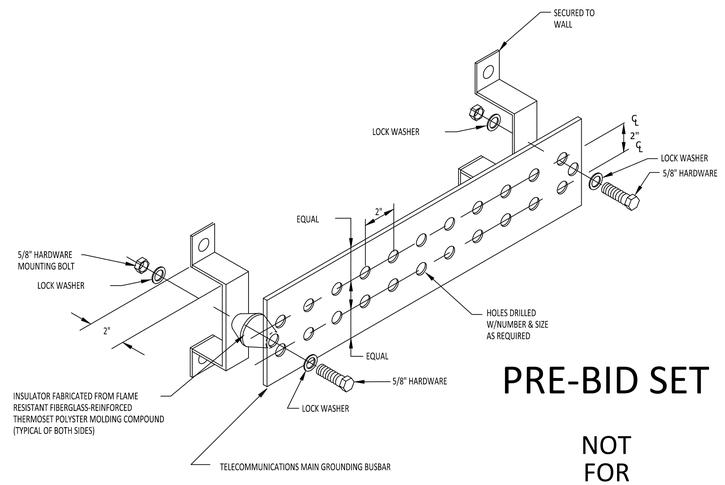
2 TRANSFORMER PAD DETAIL
SCALE: N.T.S




## GENERAL NOTES:

STRAIGHT SHAFT MODEL: INFORMATION & SPECIFICATIONS
A. MANUFACTURER: LYNCOLE XIT GROUNDING, 3547 VOYAGER ST., TORRANCE, CA 90503, PHONE 800-962-2610. WWW.LYNCOLE.COM
B. SHAFT CONFIGURATION: STRAIGHT. STANDARD LENGTHS: 10', 12', & 20', OR CUSTOM.
C. UL AND CSA LISTING: 467.
D. LYNCONITE II BACKFILL MEETS ANSI/NSF ENVIROMENTAL STANDARD 60.
E. MATERIAL: TYPE K COPPER 0.083" NOMINAL WALL THICKNESS.
F. CONSTRUCTION: HOLLOW TUBE, 2.125" O.D., FILLED WITH NON- HAZARDOUS SALTS (CALSOLYTE).
G. WEIGHT: 3.5 LBS PER LINEAL FOOT.
H. GROUND WIRE TERMINATION: EXOTHERMIC CONNECTION TO CONDUCTORS FROM #2 SOLID AWG TO 750 MCM. U-BOLT WITH PRESSURE PLATE PROVIDED AS TEST POINT.
I. MINIMUM LIFE EXPECTANCY: 50 YEARS. WARRANTY: 30 YEARS.
J. STRAIGHT SHAFT MODEL NO: K2-10CS, K2-12CS, K2-20CS.
K. GSA CONTRACT PRICING AVAILABLE.

3 LYNCOLE XIT GROUNDING SYSTEM
SCALE: N.T.S

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SIGMAHN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501

4 WALL MOUNTED SINGLE-PORT GROUND BAR DETAIL
SCALE: N.T.S.

PROJECT #: 13023
DATE:
DRAWN BY: J.V.
CHECKED BY: J.A.N.

REVISION:
1:
2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS · JOSE ANTONIO NICANOR · 108783 · LICENSED PROFESSIONAL ENGINEER · 04/04/2024


Mata & Garcia ARCHITECTS LLP
architecture
project management
interior design
Fernando Mata A.I.A., Partner Hector Rene Garcia R.A., Partner
1314 West Ivy Avenue McAllen, Texas 78501 Tel : (956) 631-1945 Fax : (956) 631-1988



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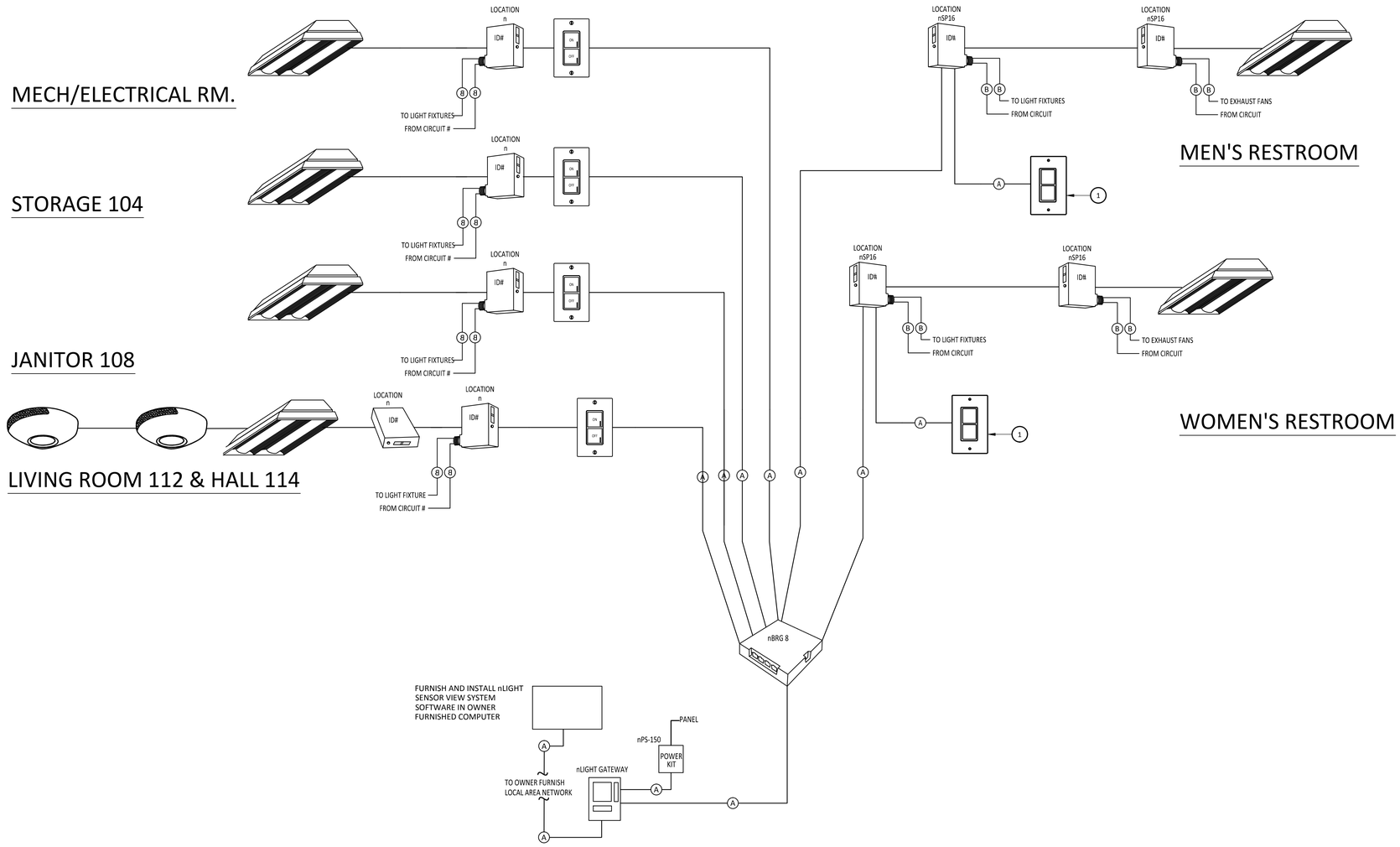


1 LIGHTING CONTROL
SCALE: N.T.S

## CABLE KEY NOTES:

| | |
|---|---|
| CAT 5e CABLING | A |
| POWER (CLASS I) | B |
| POWER (CLASS II) | C |

## GENERAL NOTES:

A. ALL SENSORS, POWER PACKS, DIGITAL SWITCHES, BRIDGES, CABLING AND GATEWAYS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY. ELECTRICAL CONTRACTOR SHALL VERIFY WITH MANUFACTURER ON THE ACTUAL QUANTITY OF ELEMENTS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM.

B. CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER EIGHT HOURS OF LIGHTING CONTROL COMMISSION AND EIGHT HOURS OF OWNER TRAINING.

C. CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER AN 8 HOUR FOLLOW-UP VISIT TO MAKE SENSOR , PROGRAMMING AND CONTROL ADJUSTMENT AND PROVIDE TRAINING TO OWNER.

D. APPROVED SUBSTITUTE LIGHTING CONTROL PRODUCTS BY LEVITON.

## KEY NOTES:

1. EXHAUST FAN SHALL BE CONTROLLED WITH LIGHT OCCUPANCY LIGHT SWITCH. FAN SHALL REMAIN ON FOR 2 MINUTES AFTER LIGHTS HAVE BEEN TURNED OFF.

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McAllen, Texas 78501

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STATE OF TEXAS · JOSE ANTONIO NICANOR · 108783 · LICENSED PROFESSIONAL ENGINEER · 08/31/2021

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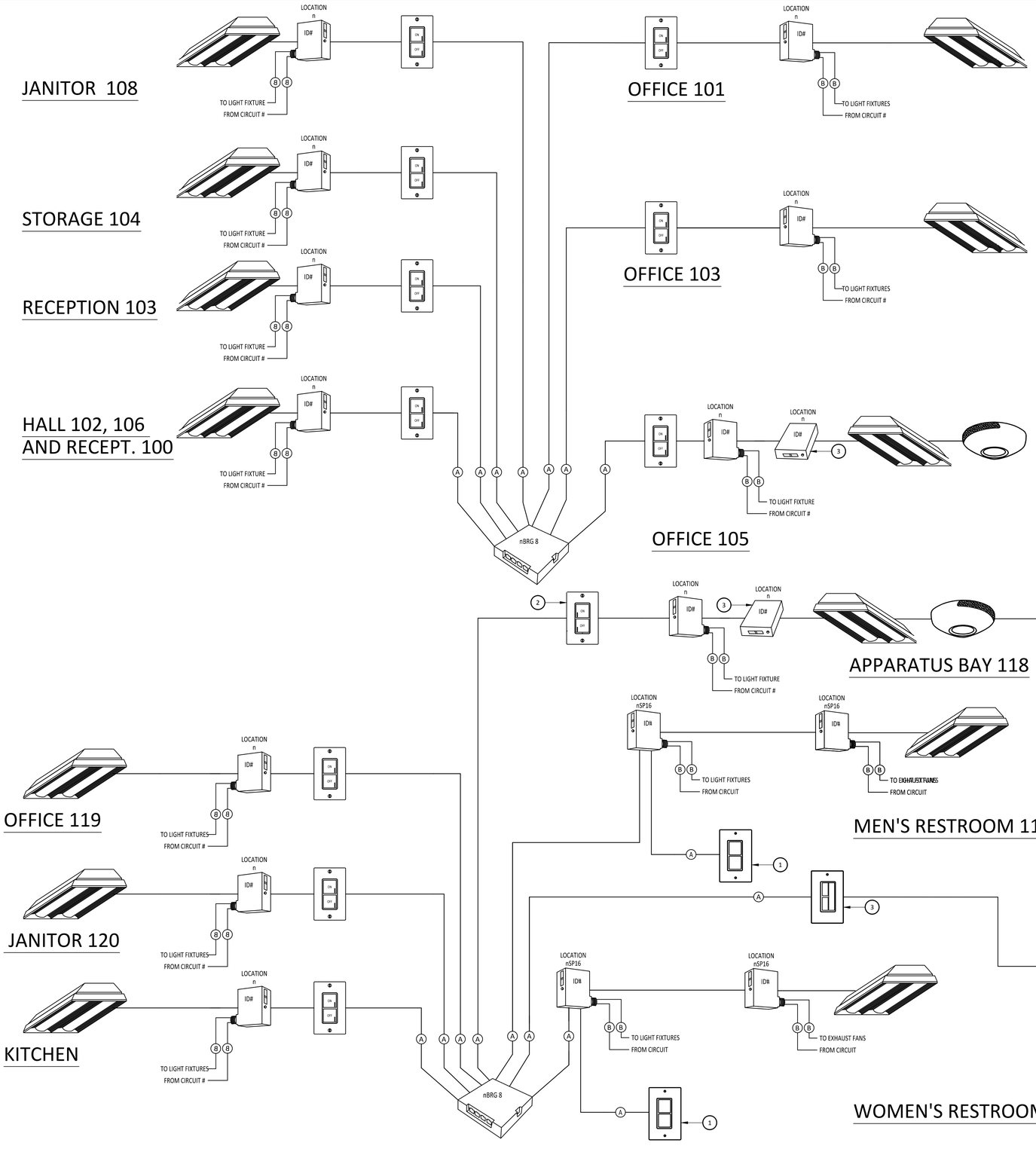


1 LIGHTING CONTROL
SCALE: N.T.S

## GENERAL NOTES:

A. ALL SENSORS, POWER PACKS, DIGITAL SWITCHES, BRIDGES, CABLING AND GATEWAYS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY. ELECTRICAL CONTRACTOR SHALL VERIFY WITH MANUFACTURER ON THE ACTUAL QUANTITY OF ELEMENTS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM.

B. CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER EIGHT HOURS OF LIGHTING CONTROL COMMISSION AND EIGHT HOURS OF OWNER TRAINING.

C. CONTRACTOR SHALL INCLUDE IN HIS BID TO OWNER AN 8 HOUR FOLLOW-UP VISIT TO MAKE SENSOR , PROGRAMMING AND CONTROL ADJUSTMENT AND PROVIDE TRAINING TO OWNER.

D. APPROVED SUBSTITUTE LIGHTING CONTROL PRODUCTS BY LUTRON.

## KEY NOTES:

1. EXHAUST FAN SHALL BE CONTROLLED WITH LIGHT OCCUPANCY LIGHT SWITCH. FAN SHALL REMAIN ON FOR 2 MINUTES AFTER LIGHTS HAVE BEEN TURNED OFF.
2. FURNISH AND INSTALL nPP16 POWER PACKS FOR EXTERIOR LIGHTING CONTROL IN ELECTRICL ROOM, ADJACENT TO ELECTRICAL PANELS.
3. FURNISH AND LIGHT SWITCH TYPE nPODM-2P FOR CONTROL OF EXTERIOR LIGHTING. CONTROL AS FOLLOWS:
   A. BUTTON (1) SHALL CONTROL PERIMETER LIGHTING.
   B. BUTTON (2): SHALL SITE LIGHTING.
4. FURNISH AND INSTALL PHOTOCELL KIT FOR EXTERIOR LIGHTING. MOUNT PHOTOCELL FACING NORTH.

## CABLE KEY NOTES:

| | |
|---|---|
| CAT 5e CABLING | A |
| POWER (CLASS I) | B |
| POWER (CLASS II) | C |

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## PANELBOARD MDP

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION:EXTERIOR
800 A MAIN BREAKER (LSI) — MOUNTING: SURFACE, NEMA 3R ENCLOSURE
BUSES: MAIN - 800 A; NEUTRAL - 100%; EQUIPMENT GROUND;ISOLATED GROUND — Isc = 40,000 A RMS SYM AVAILABLE

| VA:L | VA:R | VA:O | LOAD | BKR | CKT | PH | CKT | BKR | LOAD | VA:L | VA:R | VA:O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | | AHU-1 | 70/3 | 1 | A | 2 | 100/3 | PANEL 1P | L | R | O |
| 0 | 0 | | " | - | 3 | B | 4 | - | " | 0 | 1980 | 0 |
| 0 | 0 | | " | - | 5 | C | 6 | - | " | 0 | 720 | 0 |
| 0 | 0 | 2400 | AHU-2 | 25 | 7 | A | 8 | 100/3 | PANEL 2P | 0 | 360 | 720 |
| 0 | 0 | 2400 | " | - | 9 | B | 10 | - | " | 36 | 4980 | 960 |
| 0 | 0 | 2400 | " | - | 11 | C | 12 | - | " | 0 | 1980 | 960 |
| 0 | 0 | 3120 | CU-1 | 45/3 | 13 | A | 14 | 300/3 | PANEL 3P (ELECTRONIC TRIP, LSI) | 0 | 0 | 27773 |
| 0 | 0 | 3120 | " | - | 15 | B | 16 | - | " | 0 | 0 | 28085 |
| 0 | 0 | 3120 | " | - | 17 | C | 18 | - | " | 0 | 0 | 24079 |
| 0 | 0 | 1080 | CU-2 | 15/3 | 19 | A | 20 | 150/3 | PANEL 4P | 0 | 0 | 13804 |
| 0 | 0 | 1080 | " | - | 21 | B | 22 | - | " | 0 | 0 | 13679 |
| 0 | 0 | 1080 | " | - | 23 | C | 24 | - | " | 0 | 0 | 12639 |
| 0 | 0 | | SPARE | | 25 | A | 26 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | - | 27 | B | 28 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | - | 29 | C | 30 | 60/3 | RANGE | 0 | 0 | 5666 |
| 0 | 0 | | SPARE | | 31 | A | 32 | - | " | 0 | 0 | 5666 |
| 0 | 0 | | SPARE | - | 33 | B | 34 | - | " | 0 | 0 | 5666 |
| 0 | 0 | 62 | CP-1 | 20/1 | 35 | C | 36 | - | ELECTRIC RANGE SHUNT TRIP | 0 | 0 | |
| 0 | 0 | 4000 | WH-1 | 45/3 | 37 | A | 38 | 100/3 | SURGE PROTECTIVE DEVICE | 0 | 0 | |
| 0 | 0 | 4000 | " | - | 39 | B | 40 | - | " | 0 | 0 | |
| 0 | 0 | 4000 | " | - | 41 | C | 42 | - | " | 0 | 0 | |

| | | | |
|---|---|---|---|
| VA:L (LIGHTING) | 36 | CONNECTED | 45 DEMAND |
| VA:R (RECEPTACLES) | 10020 | CONNECTED | 10010 DEMAND |
| VA:O (OTHER) | 171559 | CONNECTED | 171559 DEMAND |
| VA: TOTAL | 181615 | CONNECTED | 181614 DEMAND |
| AMPS: TOTAL | 504 | CONNECTED | 504 DEMAND |

| L | R | O | | TOTAL | | | |
|---|---|---|---|---|---|---|---|
| 0 | 360 | 58562 | VA CONNECTED TO A PHASE | 58922 | VA = | 491 | AMPS CONNECTED TO A PHASE @ 120 VOLTS |
| 36 | 6960 | 58990 | VA CONNECTED TO B PHASE | 65986 | VA = | 550 | AMPS CONNECTED TO B PHASE @ 120 VOLTS |
| 0 | 2700 | 54006 | VA CONNECTED TO C PHASE | 56706 | VA = | 473 | AMPS CONNECTED TO C PHASE @ 120 VOLTS |
| 36 | 10020 | 171559 | **TOTAL** | 181615 | VA | | |

## PANELBOARD 1P

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION: MECHANICAL ROOM
100 A MAIN LUGS ONLY — MOUNTING: SURFACE
BUSES: MAIN -100 A; NEUTRAL - 200%; EQUIPMENT GROUND;ISOLATED GROUND — Isc = 10,000 A RMS SYM AVAILABLE

| VA:L | VA:R | VA:O | LOAD | BKR | CKT | PH | CKT | BKR | LOAD | VA:L | VA:R | VA:O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 720 | | RECEPT. OFFICE 101, 103 | 20/1 | 1 | A | 2 | 20/1 | RECEPT. OFFICE 101,102, 103, 105 | 0 | 1080 | |
| 0 | 360 | | RECEPT. OFFICE 105 | 20/1 | 3 | B | 4 | 20/1 | SPARE | 0 | 0 | |
| 0 | 360 | | RECEPT. OFFICE 100 | 20/1 | 5 | C | 6 | 20/1 | SPARE | 0 | 0 | |
| 0 | 180 | | RECEPT. ELECT. RM 111 | 20/1 | 7 | A | 8 | 20/1 | SPARE | 0 | 0 | |
| 0 | 360 | | QUAD. ELECT. RM 111 | 20/1 | 9 | B | 10 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | 720 | ELECTRIC WATER COOLER | 20/1 | 11 | C | 12 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 13 | A | 14 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 30/2 | 15 | B | 16 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 17 | C | 18 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 19 | A | 20 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 21 | B | 22 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 23 | C | 24 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 30/1 | 25 | A | 26 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 27 | B | 28 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 29 | C | 30 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 31 | A | 32 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 33 | B | 34 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 35 | C | 36 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 37 | A | 38 | 100/3 | SURGE PROTECTIVE DEVICE | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 39 | B | 40 | - | " | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 41 | C | 42 | - | " | 0 | 0 | |

| | | | |
|---|---|---|---|
| VA:L (LIGHTING) | 0 | CONNECTED | 0 DEMAND |
| VA:R (RECEPTACLES) | 3060 | CONNECTED | 3060 DEMAND |
| VA:O (OTHER) | 720 | CONNECTED | 720 DEMAND |
| VA: TOTAL | 3780 | CONNECTED | 3780 DEMAND |
| AMPS: TOTAL | 10 | CONNECTED | 10 DEMAND |

| L | R | O | | TOTAL | | | |
|---|---|---|---|---|---|---|---|
| 0 | 1980 | 0 | VA CONNECTED TO A PHASE | 1980 | VA = | 17 | AMPS CONNECTED TO A PHASE @ 120 VOLTS |
| 0 | 720 | 0 | VA CONNECTED TO B PHASE | 720 | VA = | 6 | AMPS CONNECTED TO B PHASE @ 120 VOLTS |
| 0 | 360 | 720 | VA CONNECTED TO C PHASE | 1080 | VA = | 9 | AMPS CONNECTED TO C PHASE @ 120 VOLTS |
| 0 | 3060 | 720 | **TOTAL** | 3780 | VA | | |

## PANELBOARD 2P

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION: MECHANICAL ROOM
100 A MAIN LUGS ONLY — MOUNTING: SURFACE
BUSES: MAIN -100 A; NEUTRAL - 100%; EQUIPMENT GROUND — Isc = 10,000 A RMS SYM AVAILABLE

| VA:L | VA:R | VA:O | LOAD | BKR | CKT | PH | CKT | BKR | LOAD | VA:L | VA:R | VA:O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1260 | | RECEPT. OFFICE 101,102, 103, 105,114,115 | 20/1 | 1 | A | 2 | 20/1 | GFCI RECEPT. BLDG PERIMETER | 0 | 1620 | |
| 0 | 900 | | RECEPT. MECH. 110 | 20/1 | 3 | B | 4 | 20/1 | GFCI RECEPT. RR. 107, 109, 116, 117 | 0 | 720 | |
| 0 | 180 | | RECEPT. ELECT. RM. 111 | 20/1 | 5 | C | 6 | 20/1 | GFCI RECEPT. 108, 120 | 0 | 360 | |
| 0 | 180 | | RECEPT. ELECT. RM. 111 TELECOM. | 20/1 | 7 | A | 8 | 20/1 | POWER REEL APPARATUS BAY | 0 | 1920 | |
| 0 | 360 | | RECEPT. ELECT. RM. 111 | 20/1 | 9 | B | 10 | 20/1 | POWER REEL APPARATUS BAY | 0 | 1920 | |
| 0 | 0 | | FIRE ALARM PANEL | 20/1 | 11 | C | 12 | 20/1 | SPARE | 0 | | |
| 0 | 0 | | VENDING MACHINE | 20/1 | 13 | A | 14 | 20/1 | APPARATUS BAY 118 S. WALL | 0 | | |
| 0 | 0 | | VENDING MACHINE | 20/1 | 15 | B | 16 | 20/1 | APPARATUS BAY 118 N. WALL | 0 | 720 | |
| 0 | 360 | | KITCHEN GFCI | 20/1 | 17 | C | 18 | 20/1 | APPARATUS BAY 118 W. WALL | 0 | 720 | |
| 0 | 360 | | KITCHEN GFCI | 20/1 | 19 | A | 20 | 20/3 | BIG ASS FAN | 0 | 0 | 960 |
| 0 | 360 | | KITCHEN GFCI | 20/1 | 21 | B | 22 | - | " | 0 | 0 | 960 |
| 0 | 360 | | KITCHEN GFCI | 20/1 | 23 | C | 24 | - | " | 0 | 0 | 960 |
| 0 | 180 | | KITCHEN REFRIGERATOR | 20/1 | 25 | A | 26 | 100/3 | SURGE PROTECTIVE DEVICE | 0 | 0 | |
| 36 | 0 | | CANOPY LIGHTING | 20/1 | 27 | B | 28 | - | " | 0 | 0 | |
| 0 | 0 | | SPARE | 20/1 | 29 | C | 30 | - | " | 0 | 0 | |

| | | | |
|---|---|---|---|
| VA:L (LIGHTING) | 36 | CONNECTED | 45 DEMAND |
| VA:R (RECEPTACLES) | 12480 | CONNECTED | 11240 DEMAND |
| VA:O (OTHER) | 2880 | CONNECTED | 2880 DEMAND |
| VA: TOTAL | 15396 | CONNECTED | 14165 DEMAND |
| AMPS: TOTAL | 43 | CONNECTED | 39 DEMAND |

| L | R | O | | TOTAL | | | |
|---|---|---|---|---|---|---|---|
| 0 | 5520 | 960 | VA CONNECTED TO A PHASE | 6480 | VA = | 54 | AMPS CONNECTED TO A PHASE @ 120 VOLTS |
| 36 | 4980 | 960 | VA CONNECTED TO B PHASE | 5976 | VA = | 50 | AMPS CONNECTED TO B PHASE @ 120 VOLTS |
| 0 | 1980 | 960 | VA CONNECTED TO C PHASE | 2940 | VA = | 25 | AMPS CONNECTED TO C PHASE @ 120 VOLTS |
| 36 | 12480 | 2880 | **TOTAL** | 15396 | VA | | |

## PANELBOARD 3P

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION: MECHANICAL ROOM
300 A MAIN LUGS ONLY — MOUNTING: SURFACE
BUSES: MAIN -300 A; NEUTRAL - 100%; EQUIPMENT GROUND — Isc = 10,000 A RMS SYM AVAILABLE

| VA:L | VA:R | VA:O | LOAD | BKR | CKT | PH | CKT | BKR | LOAD | VA:L | VA:R | VA:O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1725 | HAND DRYER WOMEN'S RR | 20/1 | 1 | A | 2 | 20/1 | HAND DRYER MEN'S RR | 0 | 0 | 1725 |
| 0 | 0 | 1725 | HAND DRYER WOMEN'S RR | 20/1 | 3 | B | 4 | 20/1 | HAND DRYER MEN'S RR | 0 | 0 | 1725 |
| 0 | 0 | | SPARE | 20/1 | 5 | C | 6 | 30/3 | OWNER PROVIDED UPS | 0 | 0 | 2880 |
| 0 | 0 | 1176 | OVERHEAD DOOR | 20/1 | 7 | A | 8 | - | " | 0 | 0 | 2880 |
| 0 | 0 | 1176 | OVERHEAD DOOR | 20/1 | 9 | B | 10 | - | " | 0 | 0 | 2880 |
| 0 | 0 | 1176 | OVERHEAD DOOR | 20/1 | 11 | C | 12 | 20/1 | CABINET COOLING UNIT | 0 | 0 | 1920 |
| 0 | 0 | 5167 | WASHER | 60/3 | 13 | A | 14 | 20/1 | KEF-1 | 0 | 0 | 864 |
| 0 | 0 | 5167 | " | - | 15 | B | 16 | 20/1 | KEF-2 | 0 | 0 | 1176 |
| 0 | 0 | 5167 | " | - | 17 | C | 18 | 20/1 | OVERHEAD DOOR | 0 | 0 | 1176 |
| 0 | 0 | 10560 | DRYER | 110 | 19 | A | 20 | 20/1 | OVERHEAD DOOR | 0 | 0 | 1176 |
| 0 | 0 | 10560 | " | - | 21 | B | 22 | 20/1 | OVERHEAD DOOR | 0 | 0 | 1176 |
| 0 | 0 | 10560 | " | - | 23 | C | 24 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SURGE PROTECTIVE DEVICE | 100/3 | 25 | A | 26 | 30/2 | GEN. BLOCK HEATER CKT. | 0 | 0 | 2500 |
| 0 | 0 | | " | - | 27 | B | 28 | - | " | 0 | 0 | 2500 |
| 0 | 0 | | " | - | 29 | C | 30 | 20/1 | GEN. BATTERY CHARGER CKT. | 0 | 0 | 1200 |

| | | | |
|---|---|---|---|
| VA:L (LIGHTING) | 0 | CONNECTED | 0 DEMAND |
| VA:R (RECEPTACLES) | 0 | CONNECTED | 0 DEMAND |
| VA:O (OTHER) | 79937 | CONNECTED | 79937 DEMAND |
| VA: TOTAL | 79937 | CONNECTED | 79937 DEMAND |
| AMPS: TOTAL | 222 | CONNECTED | 222 DEMAND |

| L | R | O | | TOTAL | | | |
|---|---|---|---|---|---|---|---|
| 0 | 0 | 27773 | VA CONNECTED TO A PHASE | 27773 | VA = | 231 | AMPS CONNECTED TO A PHASE @ 120 VOLTS |
| 0 | 0 | 28085 | VA CONNECTED TO B PHASE | 28085 | VA = | 234 | AMPS CONNECTED TO B PHASE @ 120 VOLTS |
| 0 | 0 | 24079 | VA CONNECTED TO C PHASE | 24079 | VA = | 201 | AMPS CONNECTED TO C PHASE @ 120 VOLTS |
| 0 | 0 | 79937 | **TOTAL** | 79937 | VA | | |

## PANELBOARD 4P

VOLTAGE: 208Y/120 VOLT 3 PHASE 4 WIRE — LOCATION: MECHANICAL ROOM
150 A MAIN LUGS ONLY — MOUNTING: SURFACE
BUSES: MAIN -150 A; NEUTRAL - 100%; EQUIPMENT GROUND — Isc = 10,000 A RMS SYM AVAILABLE

| VA:L | VA:R | VA:O | LOAD | BKR | CKT | PH | CKT | BKR | LOAD | VA:L | VA:R | VA:O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2500 | UH-1 | 30/3 | 1 | A | 2 | 15/3 | UH-5 | 0 | 0 | 1100 |
| 0 | 0 | 2500 | " | - | 3 | B | 4 | - | " | 0 | 0 | 1100 |
| 0 | 0 | 2500 | " | - | 5 | C | 6 | - | " | 0 | 0 | 1100 |
| 0 | 0 | 2500 | UH-2 | 30/3 | 7 | A | 8 | 20/2 | FCCU-1 AND FCU-1 | 0 | 0 | 1165 |
| 0 | 0 | 2500 | " | - | 9 | B | 10 | - | " | 0 | 0 | 1165 |
| 0 | 0 | 2500 | " | - | 11 | C | 12 | 15/2 | FCCU-2 AND FCU-2 | 0 | 0 | 832 |
| 0 | 0 | 2500 | UH-3 | 30/3 | 13 | A | 14 | - | " | 0 | 0 | 832 |
| 0 | 0 | 2500 | " | - | 15 | B | 16 | 15/2 | BAF-1 | 0 | 0 | 707 |
| 0 | 0 | 2500 | " | - | 17 | C | 18 | - | " | 0 | 0 | 707 |
| 0 | 0 | 2500 | UH-4 | 30/3 | 19 | A | 20 | 15/2 | BAF-2 | 0 | 0 | 707 |
| 0 | 0 | 2500 | " | - | 21 | B | 22 | - | " | 0 | 0 | 707 |
| 0 | 0 | 2500 | " | - | 23 | C | 24 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | SURGE PROTECTIVE DEVICE | 100/3 | 25 | A | 26 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | " | - | 27 | B | 28 | 20/1 | SPARE | 0 | 0 | |
| 0 | 0 | | " | - | 29 | C | 30 | 20/1 | SPARE | 0 | 0 | |

| | | | |
|---|---|---|---|
| VA:L (LIGHTING) | 0 | CONNECTED | 0 DEMAND |
| VA:R (RECEPTACLES) | 0 | CONNECTED | 0 DEMAND |
| VA:O (OTHER) | 40122 | CONNECTED | 40122 DEMAND |
| VA: TOTAL | 40122 | CONNECTED | 40122 DEMAND |
| AMPS: TOTAL | 111 | CONNECTED | 111 DEMAND |

| L | R | O | | TOTAL | | | |
|---|---|---|---|---|---|---|---|
| 0 | 0 | 13804 | VA CONNECTED TO A PHASE | 13804 | VA = | 115 | AMPS CONNECTED TO A PHASE @ 120 VOLTS |
| 0 | 0 | 13679 | VA CONNECTED TO B PHASE | 13679 | VA = | 114 | AMPS CONNECTED TO B PHASE @ 120 VOLTS |
| 0 | 0 | 12639 | VA CONNECTED TO C PHASE | 12639 | VA = | 105 | AMPS CONNECTED TO C PHASE @ 120 VOLTS |
| 0 | 0 | 40122 | **TOTAL** | 40122 | VA | | |

## TELECOMMUNICATION RACK VOICE/DATA SCHEDULE

| QTY | MANU. | MODEL NUMBER |
|---|---|---|
| 1 | APC | RACK SYSTEM TYPE# APC NETSHELTER SX AR3100 |
| 1 | APC | RACK AIR REMOVAL UNIT ACF400 |
| 2 | APC | BASIC RACK PDU'S |
| 3 | APC | BLANKING PANEL KIT AR8101 BLK. |
| 2 | APC | VERTICAL CABLE ORGANIZER AR8442. |
| 5 | APC | 2U PATCH CORD ORGANIZER BLACK AR8427 |
| | | |
| | | |

## RACK -1 (MODEL # APC NETSHELTER SX AR3100)

| UNIT SPACE NO. | DEVICES | UNIT SPACE NO. |
|---|---|---|
| 42 | 8U BLANKING PANEL | 42 |
| 41 | " | 41 |
| 40 | " | 40 |
| 39 | " | 39 |
| 38 | " | 38 |
| 37 | " | 37 |
| 36 | " | 36 |
| 35 | " | 35 |
| 32 | 1U BLANKING PANEL | 32 |
| 31 | HORIZONTAL WIRE MANAGEMENT (2U) | 31 |
| 30 | " | 30 |
| 29 | RACK LCD MONITOR (1U) | 29 |
| 28 | KEYBOARD MOUSE DRAWER (1U) | 28 |
| 27 | BLANKING PANEL | 27 |
| 26 | HORIZONTAL WIRE MANAGEMENT (2U) | 26 |
| 25 | " | 25 |
| 24 | SURVEILLANCE SERVER DVR (2U) | 24 |
| 23 | " | 23 |
| 22 | HORIZONTAL WIRE MANAGEMENT (2U) | 22 |
| 21 | " | 21 |
| 20 | ACCESS CONTROL SERVER (2U) | 20 |
| 19 | " | 19 |
| 18 | HORIZONTAL WIRE MANAGEMENT (2U) | 18 |
| 17 | " | 17 |
| 16 | 5U BLANKING PANEL | 16 |
| 15 | " | 15 |
| 14 | " | 14 |
| 13 | " | 13 |
| 12 | " | 12 |
| 11 | " | 11 |
| 10 | 8U BLANKING PANEL | 10 |
| 9 | " | 9 |
| 8 | " | 8 |
| 7 | " | 7 |
| 6 | " | 6 |
| 5 | " | 5 |
| 4 | " | 4 |
| 3 | " | 3 |
| 2 | 1U BLANKING PANEL | 2 |
| 1 | 1U BLANKING PANEL | 1 |

| TELECOMMUNICATION EQUIPMENT IDENTIFICATION | | | |
|---|---|---|---|
| ROW | RACK/ CABINET | UNIT SPACE NO. (1-42) | PORT NO. (1-48) |
| 1 | 1 | 1 | 48 |

EXAMPLE: R-1-1-48

PRE-BID SET

NOT FOR CONSTRUCTION

SIGMAHN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501

1 ELECTRICAL PANEL SCHEDULES
SCALE: N.T.S.

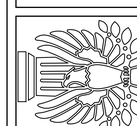
2 TELECOMMUNICATION EQUIPMENT SCHEDULES
SCALE: N.T.S.

PROJECT #: 13023
DATE:
DRAWN BY: J.V.
CHECKED BY: J.A.N.
REVISION:
1:
2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

Mata & Garcia
ARCHITECTS L.L.P
architecture
project management
interior design
Fernando Mata A.I.A., Partner
Hector Rene Garcia R.A., Partner
134 West Ivy Avenue McAllen, Texas 78501
Tel : (956) 631-4945
Fax : (956) 631-4955

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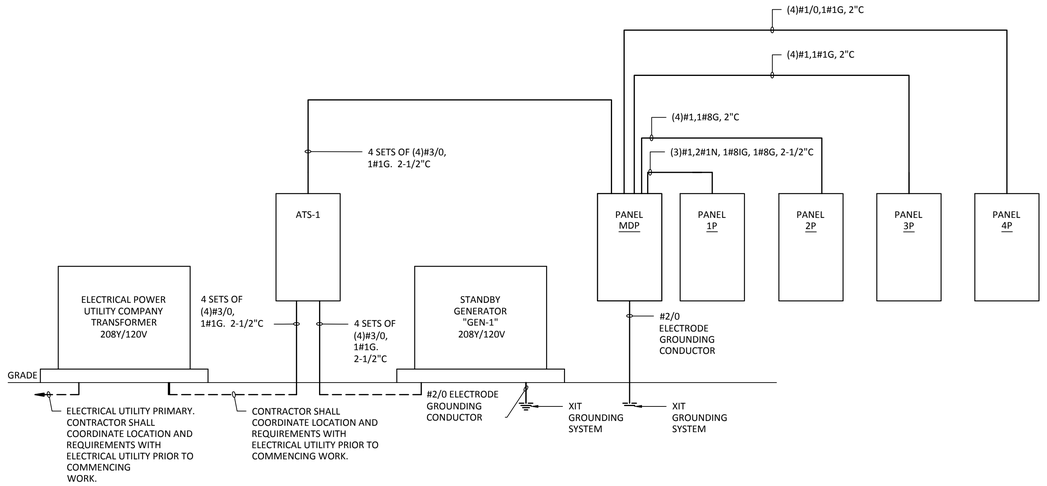
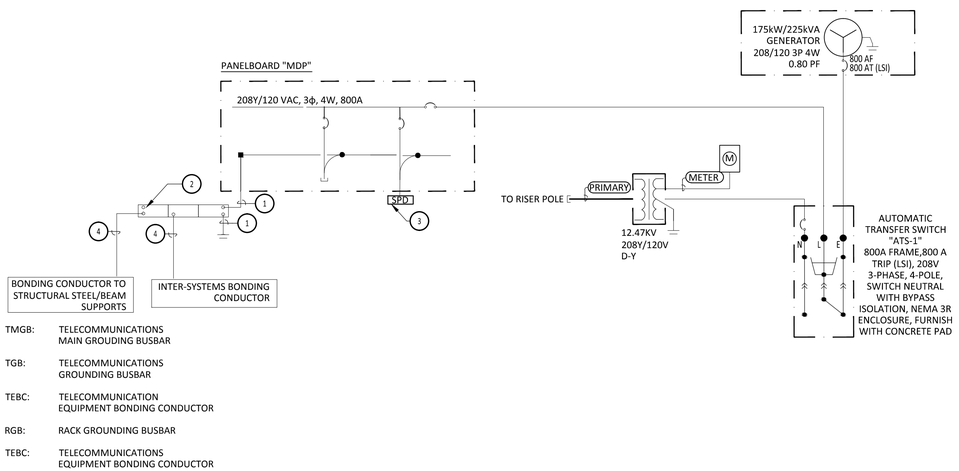



1 ELECTRICAL RISER

SCALE: N.T.S




TMGB: TELECOMMUNICATIONS MAIN GROUDING BUSBAR

TGB: TELECOMMUNICATIONS GROUNDING BUSBAR

TEBC: TELECOMMUNICATION EQUIPMENT BONDING CONDUCTOR

RGB: RACK GROUNDING BUSBAR

TEBC: TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR

2 ELECTRICAL ONE-LINE DIAGRAM

SCALE: N.T.S.

## KEY NOTES:

1. FURNISH AND INSTALL NEW ELECTRODE CONDUCTOR (SIZE #2). ROUTE FROM PANEL "MDP" GROUNDING TERMINAL TO TMGB AND FROM TMGB TO NEW ELECTRODE.TEST TO EQUAL TO OR LESS THAN .1 OHMS. FURNISH AND INSTALL LYNCOLE K2-10CS XIT ELECTRODE. REFER TO LYNCOLE XIT GROUNDING SYSTEM DETAIL FOR XIT ELECTRODE REQUIREMENTS.
2. FURNISH AND INSTALL NEW NEMA RATED TMGB 1/4"X 4 X" 12" WITH WITH STAND OFF INSULATORS BELOW PANEL MDP, INSIDE A NEMA 3R ENCLOSURE. CONNECT ALL BONDING CONDUCTORS TO THIS BAR. APPROVED BONDING METHOD (EXOTHERMIC WELD).
3. FURNISH AND INSTALL NEW SURGE PROTECTION DEVICE EQUAL TO CURRENT TECHNOLOGY # SL3-125KA-208-3Y-SDB-M4E-F2-HPI.
4. FURNISH AND INSTALL INTER-SYSTEMS BONDING CONDUCTOR FOR TELEPHONE, DATA, MULTIMEDIA EQUIPMENT (SIZE # 6 AWG).

# PRE-BID SET

NOT FOR CONSTRUCTION

SIGMAHN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501

PROJECT #: 13023
DATE:
DRAWN BY: J.V.
CHECKED BY: J.A.N.

REVISION:
1:
2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS · JOSE ANTONIO NICANOR · 108783 · LICENSED PROFESSIONAL ENGINEER

Mata & Garcia ARCHITECTS LLP
architecture | project management | interior design
Fernando Mata A.I.A., Partner Hector Rene Garcia R.A., Partner
1311 West Ivy Avenue McAllen, Texas 78501 Tel : (956) 631-1945 Fax : (956) 631-1988

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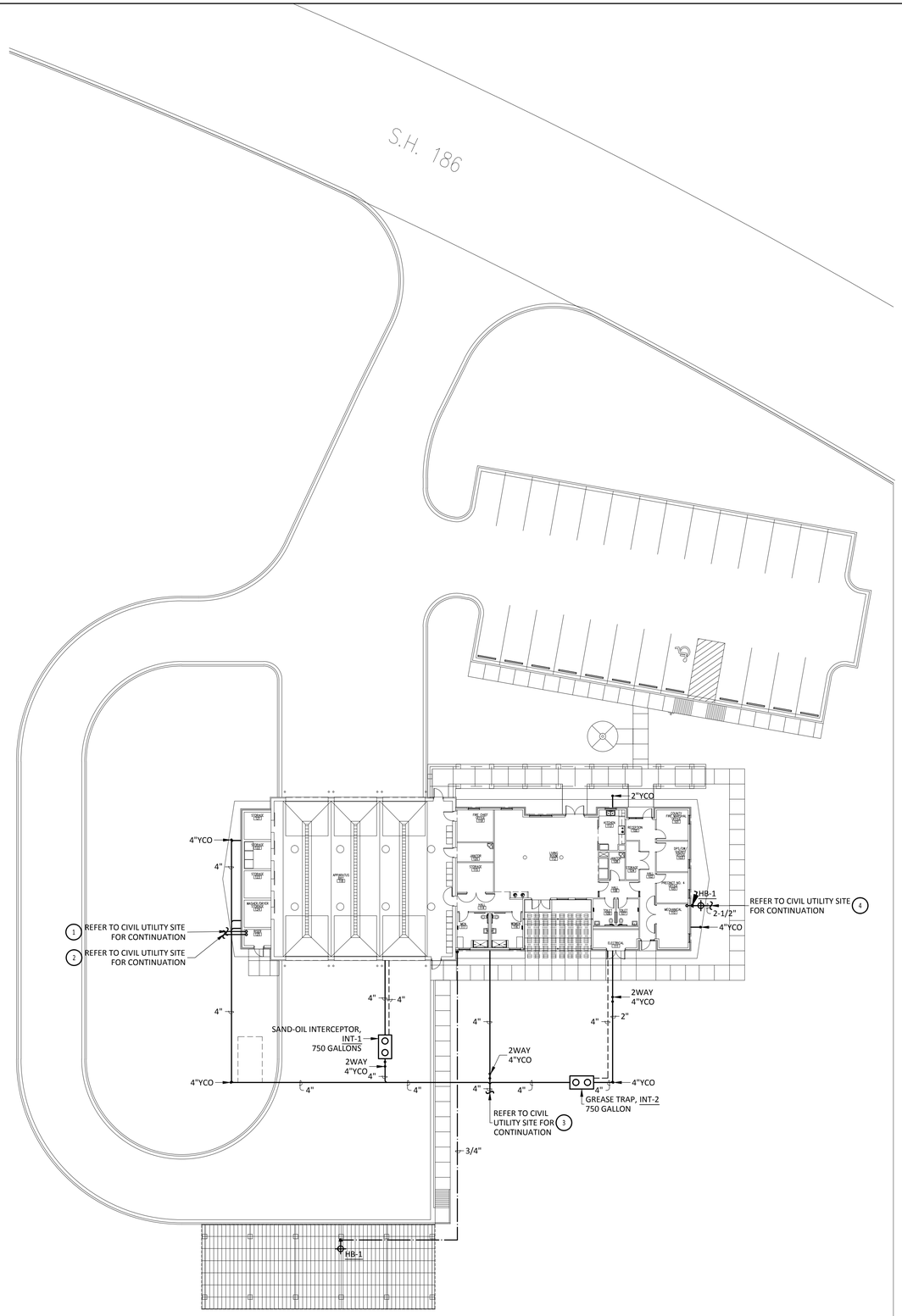


1 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

N

## GENERAL NOTES:

A. REFER TO SHEET MEP-1.0 FOR GENERAL PLUMBING NOTES.

## KEY NOTES:

1. PROPOSED FIRE SPRINKLER SUPPLY LINE, REFER TO CIVIL UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE AND BACK FLOW PREVENTION OF LINE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS.

2. PROPOSED FIRE DEPARTMENT CONNECTION LINE. REFER TO UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS. ALL FIRE PROTECTION PIPE SYSTEMS (INCLUDING ALL UNDERGROUND SERVICE PIPING) SHALL BE INSTALLED BY A LICENSED FIRE PROTECTION CONTRACTOR.

3. 4" SANITARY SEWER LINE. REFER TO CIVIL UTILITY SITE PLAN FOR CONTINUATION.

4. 2-1/2" DOMESTIC WATER SERVICE LINE. REFER TO CIVIL UTILITY SITE PLAN FOR CONTINUATION.

PROJECT #: 13023
DATE:
DRAWN BY: J.V.
CHECKED BY: J.A.N.

REVISION:
1:
2:
3:
4:

LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS
JOSE ANTONIO NICANOR
108783
LICENSED PROFESSIONAL ENGINEER

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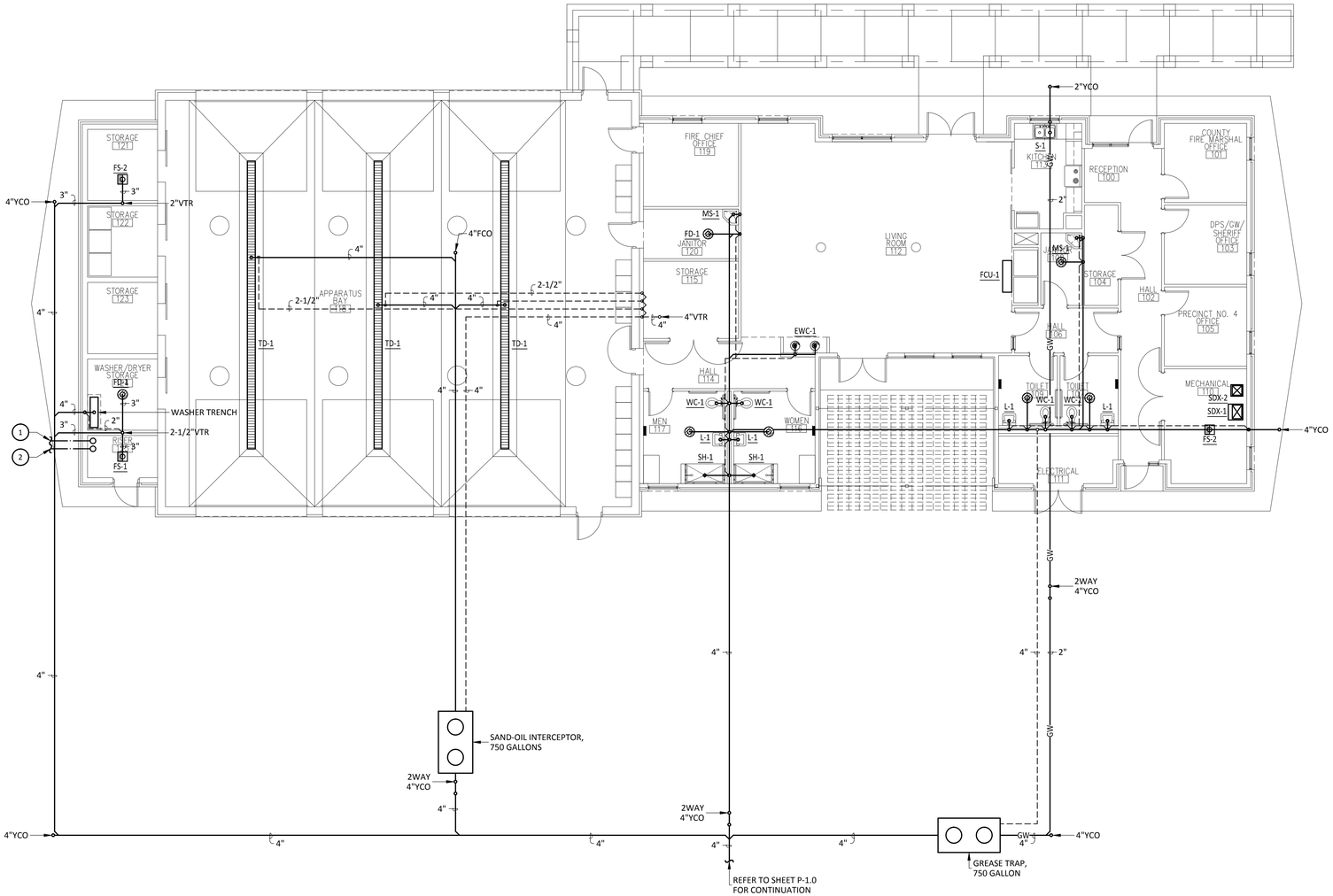
PRE-BID SET

NOT FOR CONSTRUCTION

SIGMAHN ENGINEERS, PLLC
TBPE Firm No. F-14767
701 S. 15th Street
McAllen, Texas 78501

SHEET: P-1.0




1 PLUMBING SEWER PLAN
SCALE: 1/8" = 1'-0"

## GENERAL NOTES:

A. REFER TO SHEET MEP-1.0 FOR PLUMBIGN GENERAL NOTES.

## KEY NOTES:

1. PROPOSED FIRE SPRINKLER SUPPLY LINE, REFER TO CIVIL UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE AND BACK FLOW PREVENTION OF LINE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS.

2. PROPOSED FIRE DEPARTMENT CONNECTION LINE. REFER TO UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS. ALL FIRE PROTECTION PIPE SYSTEMS (INCLUDING ALL UNDERGROUND SERVICE PIPING) SHALL BE INSTALLED BY A LICENSED FIRE PROTECTION CONTRACTOR.

3. FLOOR DRAIN SHALL BE PRIMED BELOW SLAB WITH 1/2" LINE FROM NEAREST WATER CLOSET FLUSH VALVE. CONCEAL LINE IN WALL AND BELOW CONCRETE SLAB.

4. RISE 1/2" TRAP PRIMER LINES IN WALL AND CONNECT TO TRAP PRIMER VALVE ABOVE CEILING. CONCEAL LINES IN WALLS AND BELOW CONCRETE SLAB. REFER TO PLUMBING DETAIL SHEET FOR TRAP PRIMER VALVE REQUIREMENTS.

3. THE GENERAL CONTRACTOR SHALL COORDINATE WITH OWNER PLACEMENT AND ORIENTATION OF NEW GREASE TRAP PRIOR TO EXCAVATING. VERIFY SANITARY DEPTH, RISE AND INVERT PRIOR TO CONNECTING TO EXISTING SYSTEM.

4. ROUTE FULL SIZE CONDENSATE DRAIN LINE NEAREST FLOOR SINK.

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LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS · GABRIEL HINOJOSA · 96585 · LICENSED PROFESSIONAL ENGINEER · 08-30-2021

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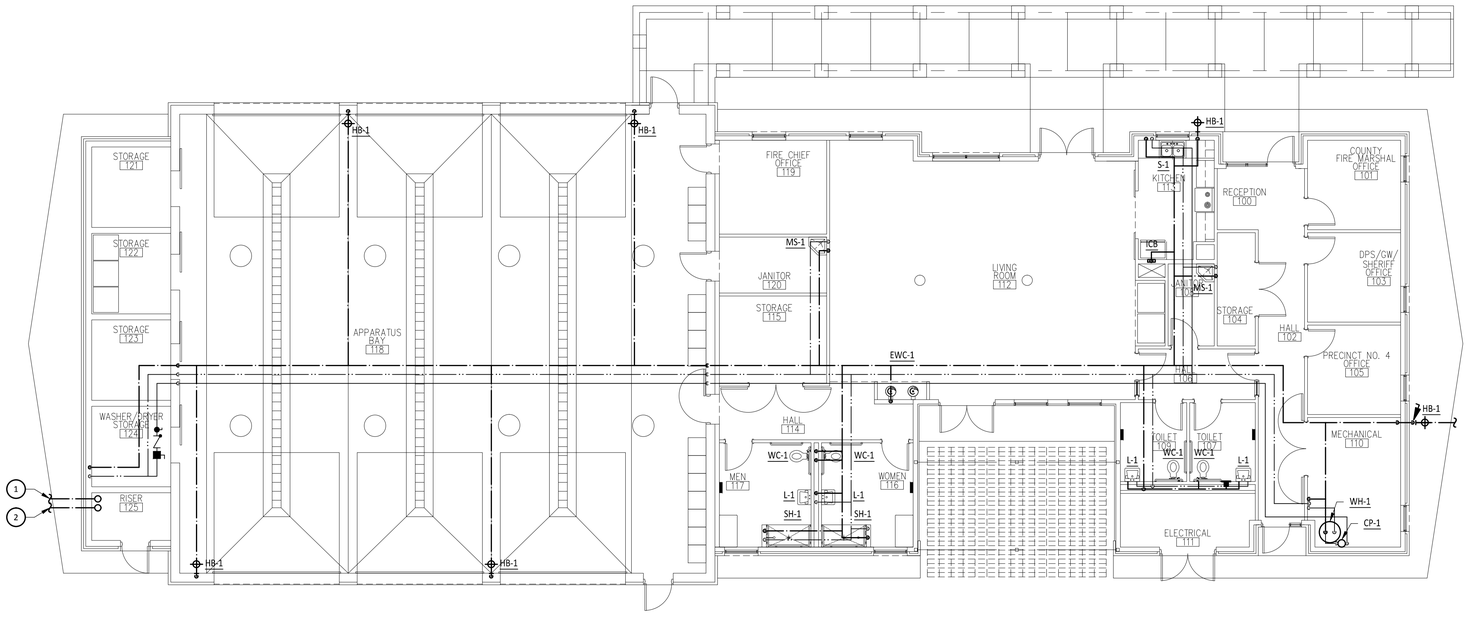


1 PLUMBING WATER PLAN
SCALE: 1/8" = 1'-0"

## GENERAL NOTES:

1. REFER TO SHEET MEP-1.0 FOR PLUMBIGN GENERAL NOTES.

## KEY NOTES:

1. PROPOSED FIRE SPRINKLER SUPPLY LINE, REFER TO CIVIL UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE AND BACK FLOW PREVENTION OF LINE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS.

2. PROPOSED FIRE DEPARTMENT CONNECTION LINE. REFER TO UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS. ALL FIRE PROTECTION PIPE SYSTEMS (INCLUDING ALL UNDERGROUND SERVICE PIPING) SHALL BE INSTALLED BY A LICENSED FIRE PROTECTION CONTRACTOR.

3. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL THERMOSTATIC MIXING VALVE (MV-1) AT LAVATORY TO DELIVER WATER AT 110°F. REFER TO PLUMBING SCHEDULE FOR SPECIFICATIONS. REFER TO PLUMBING DETAIL FOR INSTALLATION REQUIREMENTS.

4. TRAP PRIMER VALVE. DROP 1/2" SOFT DRAWN COPPER PIPING AND ROUTE TO FLOOR DRAINS SHOWN ON P-1.1. ALL PIPING SHALL BE CONCEALED IN WALLS AND BELOW CONCRETE SLAB.

5. WATER HAMMER ARRESTOR IN CHASE. PROVIDE 12"X12" HINGED 16 GAUGE STEEL ACCESS PANEL WITH LOCKABLE KEYED DOOR. PRIME COATED WITH RUST INHIBITIVE ELECTROSTATIC POWDER, BAKED GREY ENAMEL AND SHALL BE PAINTED TO MATCH SURROUNDING AREAS. COORDINATE LOCATION TO AVOID CONFLICTS WITH GRAB BARS, FLUSH VALVE AND/OR OTHER EQUIPMENT AND DEVICES.

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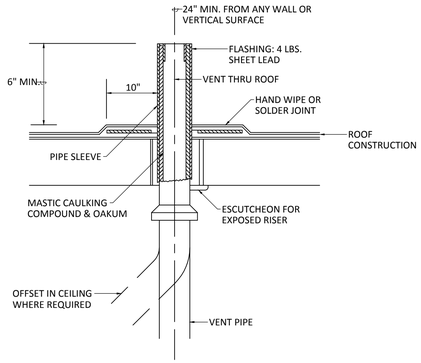
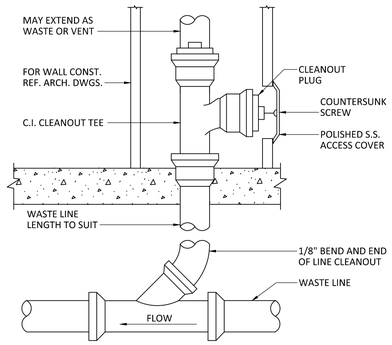


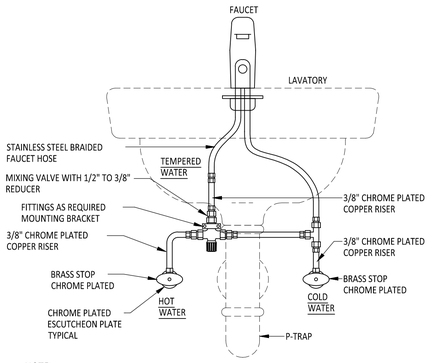

1 VENT THROUGH ROOF DETAIL
SCALE: N.T.S.




2 WALL CLEAN OUT DETAIL
SCALE: N.T.S.

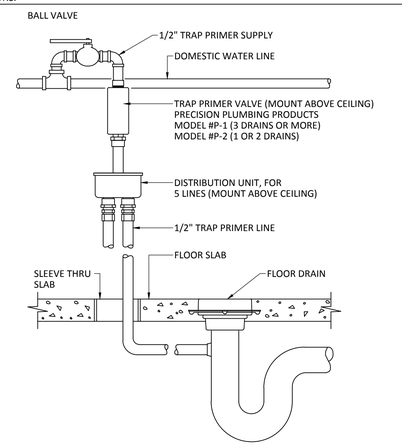
3 WALL CLEAN OUT DETAIL
SCALE: N.T.S.

4 WALL CLEAN OUT DETAIL
SCALE: N.T.S.




NOTE:
1. MIXING VALVE AND WATER LINES SHALL BE INSTALLED BETWEEN WALL AND P-TRAP TAILPIECE
2. PROVIDE AND INSTALL COVER KIT FOR P-TRAP AND STOPS.
3. FIELD INSULATE MIXING VALVE AND PIPING FROM MIXING VALVE TO FAUCET CONNECTION. JACKET INSULATION TO MATCH TRAP COVER KIT.
4. PROVIDE AND INSTALL REQUIRED 1/2" TO 3/8" REDUCERS AND CONNECTION FITTINGS.

5 MIXING VALVE UNDER LAVATORY DETAIL
SCALE: N.T.S.




6 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.

7 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.

8 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.

9 MIXING VALVE UNDER LAVATORY DETAIL
SCALE: N.T.S.

10 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.

11 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.

12 TRAP SEAL PRIMER DETAIL
SCALE: N.T.S.

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STATE OF TEXAS · J. GABRIEL HINOJOSA · 96585 · LICENSED PROFESSIONAL ENGINEER · 08-30-2021

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## PLUMBING SYMBOL LEGEND

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|---|---|---|---|---|---|
| —•— | DOMESTIC COLD WATER LINE | | BALL VALVE | CW | COLD WATER |
| —••— | DOMESTIC HOT WATER LINE | | BALANCING VALVE | DN | DOWN |
| — — | SANITARY SEWER VENT LINE | | CHECK VALVE | F.F.E. | FINISH FLOOR ELEVATION |
| | SANITARY WASTE LINE | | GATE VALVE | FU | FIXTURE UNITS |
| —CD— | CONDENSATE LINE | FCO | FLOOR CLEANOUT | GW | GREASE WASTE |
| —GW— | GREASE WASTE LINE | YCO | YARD CLEANOUT | I.E. | INVERT ELEVATION |
| —RD— | ROOF DRAIN LINE | | FLOOR SINK | HW | HOT WATER |
| —OD— | OVERFLOW DRAIN LINE | | FLOOR DRAIN | SS | SANITARY SEWER |
| | PIPE RISER | | ROOF DRAIN | TP | TRAP PRIMER |
| | PIPE DROP | | POINT OF CONNECTION | TYP | TYPICAL |
| | THERMOMETER | | WALL HYDRANT | UND. LAV. | UNDER LAVATORY |
| | DIRECTION OF FLOW | | HOSE BIBB | V | VENT |
| HWCO | WALL CLEANOUT | WHA | WATER HAMMER ARRESTOR | VTR | VENT THRU ROOF |
| P / 1 | PLUMBING RISER DESIGNATION | ABV. CLG. | ABOVE CEILING | CO | CLEAN OUT |
| 02 / P-3.1 | PLUMBING DETAIL REFERENCE | B.F.F. | BELOW FINISH FLOOR | | |

NOTE: NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT

## PLUMBING SCHEDULE

| MARK | FIXTURE TYPE | CONNECTION SIZE | | | | DESCRIPTION |
|---|---|---|---|---|---|---|
| | | SS | V | CW | HW | |
| WC-1 | WATER CLOSET FLOOR MOUNTED (HANDICAP) | 4" | 2" | 1" | - | VITREOUS CHINA, ELONGATED RIM, FLOOR MOUNTED WATER CLOSET WITH 1-1/2" TOP SPUD. KOHLER "HIGHCREST" 17" MODEL #K-4302. 16-3/4" RIM HEIGHT, 1.6 GPF, 10" ROUGH-IN, SIPHON JET ACTION WITH SLOAN "ROYAL" FLUSH MODEL #111, KOHLER "LUSTRA" MODEL #K-4670-C OPEN FRONT SEAT LESS COVER. TRAP PRIMER CONNECTION FROM FLUSH VALVE TO FLOOR DRAIN WHERE SHOWN ON PLANS. |
| L-1 | LAVATORY WALL MOUNTED (HANDICAP) | 2" | 2" | 1/2" | 1/2" | VITREOUS CHINA, WALL-HUNG LAVATORY WITH HOLES ON 4" CENTERS EQUAL TO KOHLER "CHESAPEAKE" MODEL #K-1728-0. COMPLETE WITH LAVATORY FAUCET CHICAGO MODEL #802A-317. CHROME PLATED, 1/2" IPS CONNECTIONS, VANDAL RESISTANT, WRIST BLADE HANDLES, HOT AND COLD INDICATORS, 2.0 GPM. ADA APPROVED, PROTECTIVE COVER ON P-TRAP AND APPROVED CARRIER SYSTEM. |
| S-1 | SINK (HANDICAP) | 2" | 2" | 1/2" | 1/2" | DOUBLE COMPARTMENT, STAINLESS STEEL SINK EQUAL TO ELKAY MODEL #LRAD-3321-60-4. SELF RIMMING, 32"X21"X6", 4 HOLE ON 4" CENTERS, 18 GAUGE, UNDERCOATED. COMPLETE WITH ELKAY MODEL #LK2433 HI-ARC, CHROMED METAL WING HANDLES, CONCEALED MOUNT FAUCET WITH VEGETABLE SPRAY AND "LK-35" STRAINER WITH BASKET. |
| SH-1 | SHOWER (HANDICAP) | 2" | 2" | 1/2" | 1/2" | BARRIER FREE THERMOSTATIC MIXING VALVE HAND HELD SHOWER CONSISTING OF SHOWER HEAD WITH 60" STAINLESS STEEL HOSE, WALL INLET, MOUNTING BAR, SINGLE COMPRESSION VALVE, WALL MOUNTED SOAP DISH AND REQUIRED HARDWARE. EQUAL TO BRADLEY #1C/TMV/S1/AKV/B24/DV/ST/SD. |
| MS-1 | MOP SINK | 3" | 2" | 3/4" | 3/4" | FLOOR-MOUNTED TERRAZZO CORNER SERVICE SINK EQUAL TO STERN-WILLIAMS MODEL "SBC-1700-BP", 24"X24"X12" WITH 6" DROP FRONT, STAINLESS STEEL BACK PANELS AND STAINLESS STEEL RIM GUARDS ON ALL SIDES. COMPLETE WITH SERVICE SINK FAUCET EQUAL TO CHICAGO MODEL "540-LD-8975-SWXF" WITH 8" CENTERS, PAIL HOOK, WALL BRACKET, VACUUM BREAKER SPOUT, AND LEVER HANDLES. MOP HANGER AND 5' REINFORCED RUBBER HOSE. |
| EWC-1 | ELECTRIC WATER COOLER (HANDICAP) | 2" | 2" | 1/2" | - | BI-LEVEL SELF-CONTAINED WALL HUNG, REFRIGERATED WATER COOLER EQUAL TO ELKAY #EZSTL-8. SELF CLOSING CONTROLS ON FRONT AND SIDE, STAINLESS STEEL BASIN. FLEX-GUARD BUBBLER CAPABLE OF DELIVERING 8.0 GPH OF 50° F WATER WITH 80° F INLET WATER AND 90° F ROOM TEMPERATURE. INSTALL WITH AN APPROVED CARRIER SYSTEM. |
| FD-1 | FLOOR DRAIN | 3" | 2" | 1/2" | - | ZURN MODEL "Z-415-B" LACQUERED CAST IRON FLOOR DRAIN. COMPLETE WITH "TYPE B" NICKEL BRONZE STRAINER AND 1/2" TRAP PRIMER CONNECTION. |
| FD-2 | SHOWER FLOOR DRAIN | 2" | 2" | 1/2" | - | ZURN MODEL "Z-415-B" LACQUERED CAST IRON FLOOR DRAIN. COMPLETE WITH "TYPE B" NICKEL BRONZE STRAINER AND 1/2" TRAP PRIMER CONNECTION. |
| FS-1 | FLOOR SINK | 3" | 2" | 1/2" | - | ZURN MODEL #Z-1910-P-2 PROCELAIN-ENAMELED CAST IRON FLOOR SINK . 12"X12"X6" WITH ANTI-SPLASH INTERIOR BOTTOM DOME STRAINER, PORCELAIN-ENAMELED CAST IRON 1/2 GRATE, AND 1/2" TRAP PRIMER CONNECTION. |
| FS-2 | FLOOR SINK | 3" | 2" | 1/2" | - | ZURN MODEL #Z-1910-P-4 PROCELAIN-ENAMELED CAST IRON FLOOR SINK . 12"X12"X6" WITH ANTI-SPLASH INTERIOR BOTTOM DOME STRAINER, PORCELAIN-ENAMELED CAST IRON FULL GRATE, AND 1/2" TRAP PRIMER CONNECTION. |
| TD-1 | TRENCH DRAIN | 4" | 2" | - | - | TRENCH DRAIN SYSTEM ZURN #Z886-U4-DGC-DB, BOTTOM OUTLET ADAPTERS, DUCTILE IRON SLOTTED GRATE LOAD CLASS C, AND BOTTOM DOME STRAINER. |
| INT-1 | SAND-OIL INTERCEPTOR | 4" | 4" | - | - | 750 GALLON SAND/OIL SEPARATOR SHALL BE EQUAL TO PARK EQUIPMENT MODEL "SOCMP-750". UNITS SHALL BE TRAFFIC DUTY AND INSTALLED AS PER MANUFACTURER RECOMMENDATIONS. |
| INT-2 | GREASE TRAP | 4" | 4" | - | - | 500 GALLON GREASE TRAP SHALL BE EQUAL TO PARK EQUIPMENT MODEL "GT-500". UNITS SHALL BE TRAFFIC DUTY AND INSTALLED AS PER MANUFACTURER RECOMMENDATIONS. |
| HB-1 | HOSE BIBB | - | - | 3/4" | - | WOODFORD MODEL #26-P CHROME FINISH WALL MOUNTED FAUCET, WITH BACK FLOW PREVENTER, AND LOOSE TEE KEY. |
| ICB-1 | ICE CONNECTION BOX | - | - | 3/8" | - | ICE CONNECTION BOX, GUY GRAY MODEL #BIM-875. |
| WH-1 | WATER HEATER | - | - | 1-1/2" | 1-1/2" | RHEEM COMMERCIAL ELECTRIC WATER HEATER MODEL #E85A-12, ASME, 208/3Ø, 12KW, PROVIDE EXPANSION TANK AS PER MANUFACTURER RECOMMENDATIONS. |
| CP-1 | CIRCULATING PUMP | - | - | 3/4" | 3/4" | ITT BELL & GOSSETT SYSTEM LUBRICATED CIRCULATOR PUMP #NBF-25, 2950 RPM, 1/12HP, 115V/1PH,LEAD FREE BRONZE CONSTRUCTION WITH MAXIMUM WORKING PRESSURE OF 150 PSI AND MAXIMUM OPERATING TEMPERATURE OF 225°F. PUMP SHALL BE EQUIPPED WITH TIMECLOCK INPUT FOR SCHEDULING OPERATION OF RCP-365 DAY INPUT. |
| MV-1 | THERMOSTATIC MIXING VALVE | - | - | 3/4" | 3/4" | 3/4" TEMPERING MIXING VALVE BRONZE BODY EQUAL TO WILKINGS MODEL "34-ZW1070M". INSTALL SERVICE SHUT-OFF VALVES IN ALL LINES AND THERMOMETER IN THE TEMPERED WATER LINE TO PROVIDE ACCURATE MIXING TEMPERATURES. SET TEMP. TO 110°F. |

1 PLUMBING SEWER RISER DIAGRAM
SCALE: N.T.S.

2 PLUMBING WATER RISER DIAGRAM
SCALE: N.T.S.

3 PLUMBING SCHEDULES
SCALE: N.T.S.

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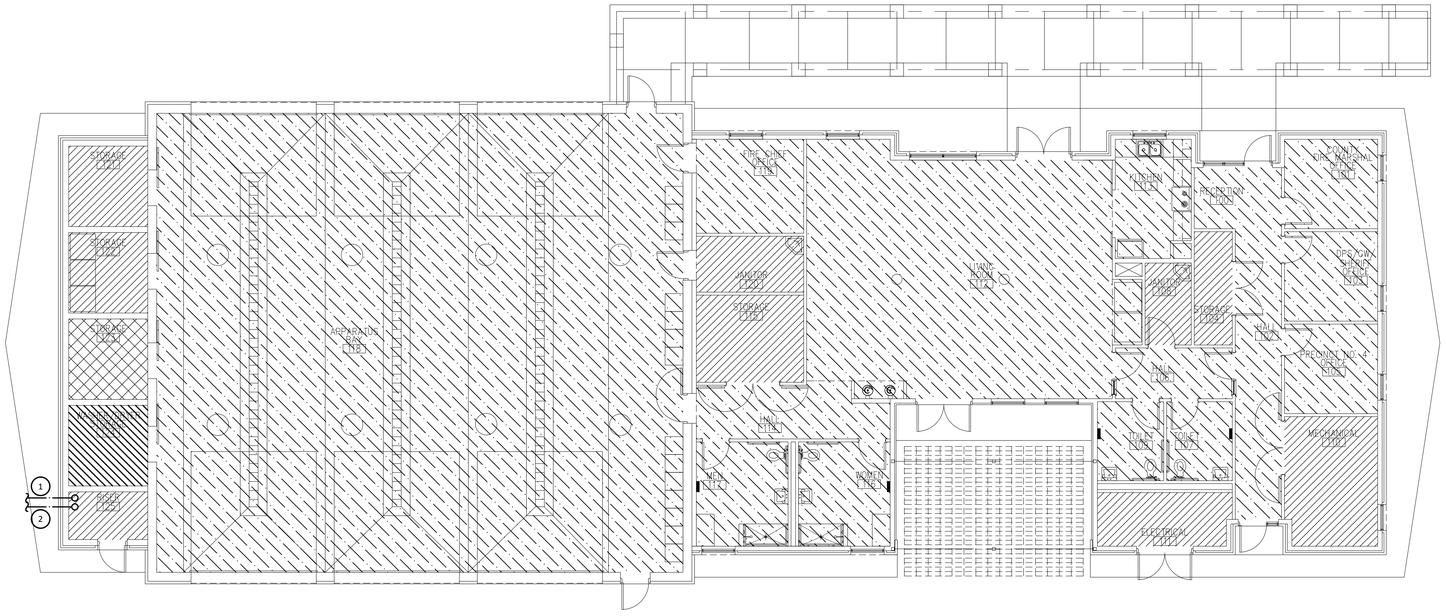
THE EXACT ROUTING OF PIPING AND PLACEMENT OF SPRINKLER HEADS SHALL BE COORDINATED WITH ARCHITECT. THIS BUILDING INCLUDES INTRICATE CEILING CONFIGURATIONS THAT WILL NECESSITATE APPROVAL OF EACH AND EVERY PIPE RUN AND SPRINKLER HEAD. THIS CONTRACTOR SHALL DESIGN THE FIRE SPRINKLER SYSTEM USING GUIDELINES ESTABLISHED BY THE ARCHITECT. OBTAIN APPROVAL FROM THE ARCHITECT FOR EACH FIRE SPRINKLER HEAD IN EACH ROOM WITHIN THE BUILDING. THE GUIDELINES ESTABLISHED BY THE ARCHITECT SHALL IN NO WAY DIMINISH THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A FULLY DESIGNED, SIZED, WORKING AND APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM AS REQUIRED BY THE CONTRACT DRAWINGS, PROJECT MANUAL/SPECIFICATIONS, THE CITY OF LINN SAN MANUEL AND THE LAWS OF THE STATE OF TEXAS. PROVIDE A COMPLETE, WORKING AND APPROVED SYSTEM.

THESE CONCEPTUAL FIRE SPRINKLER PROTECTION PLANS ARE FOR INFORMATION PURPOSES ONLY. ALL CIVIL AND FIRE SPRINKLER PLANS ARE TO BE SUBMITTED SEPARATELY TO THE FIRE DEPARTMENT FOR REVIEW OF COMPLIANCE TO THE RESPECTIVE GOVERNING STANDARDS. (LINN SAN MANUEL, TEXAS)

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1 CONCEPTUAL FIRE PROTECTION PLAN
SCALE: 1/8" = 1'-0"

## GENERAL NOTES:

A. REFER TO SHEET P-4.1 FOR AUTOMATIC SPRINKLER SYSTEM PERFORMANCE SPECIFICATION NOTES.

## KEY NOTES:

1. PROPOSED FIRE SPRINKLER SUPPLY LINE, REFER TO CIVIL UTILITY PLAN FOR CONTINUATION OF PIPING. PIPE AND BACK FLOW PREVENTION OF LINE SHALL BE SIZED BY A LICENSED FIRE SPRINKLER DESIGNER. CIVIL ENGINEER SHALL COORDINATE WITH FIRE SPRINKLER DESIGNER FOR WATER SUPPLY LINE REQUIREMENTS AND FIRE DEPARTMENT CONNECTION TO MEET NFPA 13 INSTALLATION REQUIREMENTS.
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## LEGEND:

ORDINARY HAZARD GROUP 2
FOR STORAGE ROOMS, MECHANICAL ROOMS, LARGE STACK ROOM AREAS OF THE LIBRARY (IF ANY).
DESIGN DENSITY IS 0.20 GPM/SQ.FT.
250 GPM HOSE ALLOWANCE
DESIGN AREA=1500 SQ. FT.

ORDINARY HAZARD GROUP 1
FOR KITCHEN AREA AND LAUNDRY
DESIGN DENSITY IS 0.15 GPM/SQ.FT.
250 GPM HOSE ALLOWANCE
DESIGN AREA=1500 SQ. FT.

LIGHT HAZARD
FOR CLASS ROOMS, OFFICES, CORRIDORS, GYMNASIUM, CAFETERIA, AUDITORIUM (EXCEPT STORAGE AREA), LIBRARY (EXCEPT LARGE STACK ROOM AREAS).
DESIGN DENSITY IS 0.10 GPM/SQ.FT.
100 GPM HOSE ALLOWANCE
DESIGN AREA=1500 SQ. FT.

HIGH HAZARD
FOR STORAGE OF FLAMMABLE LIQUIDS
DESIGN DENSITY IS 0.60 GPM/SQ.FT.
500 GPM HOSE ALLOWANCE
DESIGN AREA=2000 SQ. FT.

PRE-BID SET

NOT FOR CONSTRUCTION

SIGMAHN ENGINEERS, PLLC
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701 S. 15th Street
McAllen, Texas 78501

PROJECT #: 13023
DATE:
DRAWN BY: J.V.
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REVISION:
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LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT : LINN–SAN MANUEL, TEXAS
OWNER : HIDALGO COUNTY

STATE OF TEXAS · GABRIEL HINOJOSA · 96585 · LICENSED PROFESSIONAL ENGINEER

08-24-2021

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# AUTOMATIC SPRINKLER SYSTEM PERFORMANCE SPECIFICATION NOTES:

## PART 1 - GENERAL

1.01 SCOPE:

A. FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND RELATED ITEMS REQUIRED FOR THE COMPLETE DESIGN AND INSTALLATION OF AUTOMATIC SPRINKLER SYSTEM.

B. ALL AREAS OF THE BUILDING SHALL BE PROTECTED BY WET AUTOMATIC FIRE SPRINKLERS.THE SYSTEM SHALL BE HYDRAULICALLY CALCULATED. DENSITY SHALL BE IN ACCORDANCE WITH NFPA-13, NFPA 24 AND NFPA 231.

C. THE FIRE SPRINKLER CONTRACTOR SHALL OBTAIN A FLOW TEST, FROM THE CITY, PERFORMED WITHIN THE LAST 12 MONTHS TO VERIFY ADEQUATE WATER SUPPLY FOR THE FIRE SPRINKLER SYSTEM PRIOR TO BIDDING.

D. FIRE SPRINKLER CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DESIGNING AND INSTALLING SYSTEM.

E. WATER SUPPLY SHALL COME FROM A NEW FIRE LINE SERVICE COMPLETE WITH DOUBLE CHECK BACKFLOW PREVENTER, AND VALVING AS REQUIRED BY THE CITY. THE FIRE SPRINKLER CONTRACTOR SHALL PAY ALL TAP FEES, PERMITS, AND CHARGES NECESSARY FOR A COMPLETE AND APPROVED INSTALLATION.

1.02 QUALITY ASSURANCE:

A. SPRINKLER SYSTEM SHALL COMPLY WITH ALL APPLICABLE STATE AND CITY CODES, NFPA REQUIREMENTS, AND OWNER'S INSURANCE COMPANY REQUIREMENTS; INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

1. INTERNATIONAL BUILDING CODE SERIES.
2. NFPA CHAPTER 13,24 & 231.
3. LIFE SAFETY CODE NFPA-101.
4. OWNER'S INSURANCE UNDERWRITER REQUIREMENTS.
5. INTERNATIONAL FIRE CODE.

1.03 SUBMITTALS:

A. PREPARE DETAILED WORKING DRAWINGS OF THE AUTOMATIC SPRINKLER SYSTEM.

B. SUBMIT DRAWINGS AND CALCULATIONS TO FIRE MARSHAL, AND OWNER'S INSURANCE UNDERWRITER AND OBTAIN THEIR APPROVAL.

C. SUBMIT FOUR (4) COPIES OF APPROVED DRAWINGS AND CALCULATIONS TO THE ARCHITECT AND TWO (2) COPIES TO THE FIRE MARSHAL FOR THEIR REVIEW AND APPROVAL.

D. SUBMIT "CUTSHEET" SAMPLES OF SPRINKLER HEADS TO ARCHITECT FOR APPROVAL.

## PART 2 - PRODUCTS

2.01 GENERAL:

A. ALL MATERIALS, EQUIPMENT, VALVES AND DEVICES INSTALLED OR FURNISHED UNDER THIS CONTRACT SHALL BE UNDERWRITERS LABORATORIES (UL) LISTED AND FACTORY MUTUAL (FM) APPROVED FOR USE BY THE AUTHORITIES, AGENCIES, CODES AND STANDARDS CITED IN THIS SECTION OF THE SPECIFICATIONS.

2.02 PIPING:

A. SPRINKLER PIPING SMALLER THAN 4" SHALL BE SCHEDULE 40 (ASTM SPECIFICATIONS A-120 OR A-53) BLACK STEEL PIPE WHICH SHALL BE ASSEMBLED WITH 175 PSIG STANDARD CAST IRON, THREADED FITTINGS OR WITH FLANGED SPRINKLER TYPE FITTINGS OR GROOVED FITTINGS AS REQUIRED. PIPING 4" AND LARGER MAY BE UL APPROVED STEEL PIPE WITH GROOVED OR WELDED FITTINGS AS APPROVED BY THE LOCAL AUTHORITIES. GROOVED FITTINGS SHALL BE VICTAULIC OR APPROVED EQUAL, THE GROOVING MACHINE SHALL BE THE SAME AS THAT RECOMMENDED BY THE FITTINGS MANUFACTURER. FLEXIBLE PIPING IS NOT ACCEPTABLE TO THE OWNER.

B. SCHEDULE 10 (THIN WALL) SPRINKLER PIPING MAY BE USED WHERE APPROVED BY THE AUTHORITIES.

C. PIPING FROM 5'-0" OUTSIDE BUILDING TO ALARM CHECK VALVE INSTALLATION SHALL BE DUCTILE IRON PIPING WRAPPED WITH 3 MIL POLYETHYLENE.

2.03 HANGERS:

A. PROVIDE NECESSARY UL APPROVED HANGERS TO SUPPORT THE SPRINKLER PIPINGS. HANGERS SHALL BE SPACED IN ACCORDANCE WITH REQUIREMENTS OF THE NFPA CHAPTER 13.

2.04 SPRINKLERS:

A. SPRINKLER HEADS IN AREAS WITH FINISHED CEILINGS SHALL BE PENDENT SPRAY TYPE, CHROME FINISH WITH CHROME ESCUTCHEON AND SHALL BE EQUAL TO GRINNELL ISSUE 'C' DURASPEED 1/2" ORIFICE AND UL AND FM LISTED.

B. HEADS IN AREAS WITHOUT CEILINGS AND WITH EXPOSED PIPING SHALL BE UPRIGHT TYPE, BRASS FINISH AND SHALL BE EQUAL TO GRINNELL QUICK RESPONSE MODEL "A" 1/2" ORIFICE AND UL AND FM LISTED.

C. HEAD IN VICINITY OF HEATING EQUIPMENT AND ELECTRICAL EQUIPMENT SHALL BE HIGH TEMPERATURE HEADS OF THE TYPE APPROVED BY FM AND UL.

2.05 FIRE DEPARTMENT SIAMESE:

A. FREE-STANDING WITH 5" STORZ CONNECTION WITH KNOX CAP AND SIGN IN ACCORDANCE WITH MISSION FIRE MARSHAL.

2.06 GATE VALVES:

A. GATE VALVES 2-1/2" AND LARGER SHALL BE UNDERWRITER'S APPROVAL EQUAL TO JENKINS 825A OR CRANE 467.

2.07 CHECK VALVES:

A. ALL CHECK VALVES SHALL BE EQUAL TO JENKINS 729, CRANE 375 OR WALWORTH 883F AND EQUIPPED WITH AN AUTOMATIC BALL DRIP TO DRAIN THE LINE BETWEEN THE FIRE DEPARTMENT CONNECTION AND THE CHECK VALVE.

2.08 FLOW SWITCHES:

A. PROVIDE A GRINNELL SERIES WFD FLOW SWITCH IN EACH SPRINKLER SYSTEM CONNECTION SERVING EACH SPRINKLER ZONE. SWITCHES SHALL BE SUITABLE FOR CONNECTION INTO THE FIRE ALARM SYSTEM.

2.09 MONITOR SWITCHES:

A. EACH MANUAL SECTIONALIZING VALVE AND SHUTOFF VALVE IN THE SPRINKLER SYSTEM SHALL BE PROVIDED WITH A GRINNELL F640 MONITORING SWITCH TO INDICATE WHETHER THE VALVE IS OPEN OR CLOSED. WIRING FROM SWITCHES TO THE FIRE ALARM SYSTEM WILL BE DONE UNDER DIVISION 16. THE SWITCH SHALL HAVE A TAMPER INDICATION IF REMOVED FROM ITS MOUNTING OR THE HOUSING COVER IS REMOVED; IT SHALL SIGNAL AN ALARM WHEN THE VALVE POSITION IS ALTERED.

2.10 ALARM VALVE ASSEMBLIES:

A. THE ALARM VALVE ASSEMBLY SHALL BE EQUAL TO GRINNELL MODEL A-3 CONSISTING OF A SERVICE SHUTOFF VALVE, A CLAPPER TYPE MAIN CHECK VALVE, AN AUXILIARY SEAT (ALARM OUTLET), A RETARDING CHAMBER, AND ELECTRIC CIRCUIT CLOSER, GAUGES, CHECK VALVES, GATE VALVES, GLOBE OR ANGLE VALVES AND COCKS.

2.11 WATER MOTOR GONG:

A. NOT USED

2.12 SPARE SPRINKLERS:

A. PROVIDE A WALL MOUNTED SPRINKLER CABINET WITH A MINIMUM OF 12 SPRINKLERS OF EACH TYPE INSTALLED AND A SPRINKLER WRENCH. MOUNT CABINET NEXT TO SPRINKLER ALARM VALVE.

2.13 WET CHEMICAL FIRE SUPPRESSION SYSTEM:

A. FURNISH AND INSTALL A PRE-ENGINEERED WET CHEMICAL FIRE SUPRESSION SYSTEM AS MANUFACTURED BY WELLS FARGO PYRO TECHNOLOGIES, MODEL KITCHEN KNIGHT, AS REQUIRED BY FIRE MARSHALL AND/OR OWNER'S INSURANCE UNDERWRITER

2.14 DOUBLE CHECK BACKFLOW PREVENTER

A. AS REQUIRED IN ACCORDANCE WITH LINN SAN MANUEL FIRE MARSHAL. LOCATE INSIDE FIRE RISER ROOM.

2.15 KNOX BOX

A. AS REQUIRED IN ACCORDANCE WITH LINN SAN MANUEL FIRE MARSHAL; COORDINATE LOCATION WITH FIRE MARSHAL.

## PART 3 - EXECUTION

3.01 SCOPE:

A. FURNISH AND INSTALL WITH ALL RELATED ITEMS, A COMPLETELY DESIGNED FIRE PROTECTION AUTOMATIC SPRINKLER SYSTEM.

3.02 CERTIFIED CONTRACTORS:

A. FABRICATION AND INSTALLATION SHALL BE BY STATE LICENSED FIRE SPRINKLER COMPANY WITH EXPERIENCED, COMPETENT WORKMEN REGULARLY ENGAGED IN THE WORK.

3.03 COORDINATION:

A. WORK SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING:

1. REQUIRED FITTINGS AND VALVES, ETC.
2. OVERHEAD SPRINKLER SYSTEM FOR ENTIRE BUILDING, INCLUDING ALL REQUIRED ITEMS, EXCEPT UNDER EXTERIOR CANOPIES AND/OR OVERHANGS OVER WALKWAYS.

3.04 DESIGN:

A. PIPING IN AREAS HAVING CEILINGS, OTHER THAN THE UNDERSIDE OF THE ROOF DECK, SHALL BE CONCEALED; PIPING IN STORAGE AND SERVICE AREAS MAY BE EXPOSED BUT KEPT AT A MINIMUM DISTANCE FROM CEILING. ALL PIPING SHALL BE NEW, CLEAN AND FREE FROM RUST.

B. THE SPRINKLER CONTRACTOR SHALL COORDINATE HIS WORK AND SERVICES WITH ALL OTHER CEILING MOUNTED, SUSPENDED OR OVERHEAD EQUIPMENT AND WITH STRUCTURAL SYSTEM. NO SPRINKLER LINES SHALL PASS THROUGH DUCTWORK.

C. DEEP ESCUTCHEONS MAY BE USED IN ORDER TO LOCATE HEADS CLOSE TO LIGHTING FIXTURES. WHERE SPRINKLER HEADS OCCUR UNDER OVERHANGS, ESCUTCHEONS OF LESSER DEPTH MAY BE USED WHERE ACCEPTABLE TO THE CITY FIRE MARSHAL AND NFPA 13.

D. RISERS SHALL BE LOCATED WHERE INDICATED ON THE DRAWINGS AND BE EQUIPPED WITH VARIABLE PRESSURE ALARM VALVES. VALVES SHALL BE COMPLETE WITH ALL NECESSARY ITEMS, FITTINGS, IDENTIFICATION TAGS OR PLATES, AND ACCESSORIES INCLUDING ALARM VALVE AND WATER MOTOR GONG. DESIGN SHALL ALLOW FOR SUITABLE VENTING AND DRAINAGE OF SAME, ALL TO MEET WITH THE APPROVAL OF THE CITY FIRE MARSHAL AND THE OWNER'S INSURANCE UNDERWRITER AND NFPA 13.

DESIGNS REQUIRING CUTTING OF STRUCTURAL MEMBERS FOR PASSAGE OF SPRINKLER PIPE AND HANGER SHALL BE AVOIDED. WHEN DESIGN, DUE TO ECONOMY, APPEARANCE AND SIMILAR ASPECTS, DENOTE THE NECESSITY OF CUTTING, IT SHALL BE HELD TO AN ABSOLUTE MINIMUM AND DONE ONLY WITH THE ARCHITECT'S WRITTEN APPROVAL.

F. IN ADDITION TO MEETING THE NATIONAL FIRE PROTECTION ASSOCIATION NO. 13 REQUIREMENTS, THE FOLLOWING WILL APPLY TO THE SPRINKLER SYSTEM:

1. THE SPRINKLER SYSTEM SHALL BE ELECTRICALLY INTER-CONNECTED TO THE BUILDING FIRE ALARM SYSTEM.
2. THE SPRINKLER SYSTEM MAIN CONTROL VALVE SHALL BE ELECTRICALLY SUPERVISED SO THAT AT LEAST A LOCAL ALARM WILL SOUND WHEN THE VALVE IS CLOSED.

3.05 DRAWINGS:

A. SHOP DRAWINGS CONSISTING OF THE FOLLOWING SHALL BE FURNISHED BY THE SPRINKLER SUB-CONTRACTOR:

1. LAYOUT DRAWING OF COMPLETE OVERHEAD AUTOMATIC SPRINKLER SYSTEM INDICATING RELATIONSHIP OF ALL OTHER OVERHEAD ITEMS INCLUDING LIGHT FIXTURES, LOCATION OF RISERS, PIPING, ETC. SHALL BE AS INCONSPICUOUS AS POSSIBLE, PROVIDE A PLEASING OVERHEAD APPEARANCE, AND STILL FULFILL ALL FUNCTIONAL REQUIREMENTS.
2. SPRINKLER CONTRACTOR SHALL OBTAIN A COPY OF APPROVED CEILING GRID SYSTEM FROM CEILING SUB-CONTRACTOR AND SHALL WORK TO THIS LAYOUT WHEN PREPARING SHOP DRAWINGS AND INSTALLING WORK. CUTTING OF CEILING RUNNERS WILL NOT BE PERMITTED.
3. PILOT PLAN INDICATING LOCATION OF ALL UNDERGROUND CONNECTIONS, CONTROL VALVES, PIPING AND ALL RELATED ITEMS, AND ANY OTHER ITEMS OF DATA DEEMED NECESSARY BY THE CITY FIRE MARSHAL AND NFPA 13.
4. COMPLETE DETAILS AND SECTIONS AS REQUIRED TO CLEARLY DEFINE AND CLARIFY THE DESIGN INDICATED BY THE AFOREMENTIONED LAYOUT AND PILOT PLAN.
5. ALL SHOP DRAWINGS, PRIOR TO BEING SENT TO THE ARCHITECT, MUST BEAR BOTH THE CITY FIRE ENGINEERING DEPT. STAMP OF ACCEPTANCE AND THE OWNER'S INSURANCE UNDERWRITER STAMP OF ACCEPTANCE.

B. FURNISH AND INSTALL, NEXT TO THE SPRINKLER RISER MAIN, A PRINTED SHEET, PROTECTED BY WOOD FRAMED GLASS COVER, GIVING BRIEF INSTRUCTIONS REGARDING CONTROL, EMERGENCY PROCEDURE AND OTHER DATA AS DEEMED NECESSARY BY THE CITY FIRE MARSHAL AND THE OWNER'S INSURANCE UNDERWRITER.

C. UPON COMPLETION OF THE WORK, ACCURATELY MARK ONE COPY OF SHOP DRAWINGS SHOWING LOCATION OF ALL UNDERGROUND FIRE PREVENTION SYSTEM PIPING, VALVES, ETC., AS FINALLY INSTALLED. SHOW LOCATION OF UNDERGROUND PIPING AND VALVES BY DIMENSION. ALSO, GIVE FLOW LINE ELEVATIONS OF UNDERGROUND PIPING FROM STREET MAIN TO BUILDING. UPON COMPLETION OF THE JOB, FURNISH OWNER ONE (1) NEAT LEGIBLE COPY OF "AS BUILT" DRAWINGS.

3.06 INSTALLATION:

A. SLEEVES SHALL BE PROVIDED FOR PIPING PASSING THROUGH CONCRETE SLABS, CONCRETE OR MASONRY WALLS AND PARTITIONS, THROUGH FLOORS, CEILINGS, WALLS AND PARTITIONS OF OTHER BUILDING MATERIALS. WATERTIGHT SLEEVES CAULKED WITH MASTIC OR LEAD SHALL BE PROVIDED FOR FLOOR SLABS AND WALLS ON OR BELOW GRADE. STANDARD PIPE OR GALVANIZED SHEET METAL SLEEVES SHALL BE INSTALLED IN ABOVE GRADE CONSTRUCTION AS MAY BE REQUIRED. THE SLEEVES SHALL BE OF SUFFICIENT DIAMETER TO PASS PIPE LINES WITH COUPLINGS OR WITH INSULATION OR ANNULAR AREA FOR CAULKING WHERE REQUIRED. ESCUTCHEONS SHALL BE APPROVED FLOOR AND CEILING PLATES MADE OF STEEL OR BRASS, PLAIN OR CHROMIUM PLATE FINISH AND SHALL BE INSTALLED AROUND ALL EXPOSED PIPING PASSING THROUGH A FINISHED FLOOR, WALL OR CEILING. THE PLATES SHALL BE OF SUFFICIENT OUTSIDE DIAMETER TO COVER THE SLEEVE OPENING AND SHALL BE PROVIDED WITH SPRINGS OR SET SCREWS TO INSURE THEM FITTING SNUGLY AROUND THE PIPE.

B. ALL OPENINGS FOR PIPING SHOULD BE ANTICIPATED AND INDICATED ON THE APPROVED AND ACCEPTED SHOP DRAWINGS. ANY ADDITIONAL CUTTING OF OPENINGS MUST HAVE WRITTEN APPROVAL OF THE ARCHITECT.

C. THIS CONTRACTOR WILL NOT USE AIR CONDITIONING DUCT SUPPORTS, AIR DEVICE OUTLETS OR SUPPORTS, PIPING OR SUPPORTS AS A MEANS OF SUPPORT OF ANY MATERIAL, ACCESSORIES OR WORKMEN IN THE INSTALLATION OF THE SYSTEM.

3.07 GUARANTEE:

A. THE ENTIRE INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE BUILDING ACCEPTANCE DATE.

3.08 TESTS:

A. PRIOR TO CONNECTING TO THE OVERHEAD SPRINKLER PIPING, THE UNDERGROUND MAIN SHALL BE FLUSHED PER THE REQUIREMENTS OF THE NFPA.

B. AFTER COMPLETION OF THE INSTALLATION, THE ENTIRE SYSTEM SHALL BE TESTED FOR ACCEPTANCE BY THE OWNER'S INSURANCE UNDERWRITER.

3.09 ACCEPTANCE:

A. THE OWNER'S INSURANCE UNDERWRITER, AFTER SATISFYING THEMSELVES THAT THE INSTALLATION IS SATISFACTORY IN ALL RESPECTS, WILL ISSUE A LETTER OF FINAL ACCEPTANCE. LETTER SHALL BE ADDRESSED TO THE SPRINKLER COMPANY RESPONSIBLE FOR THE INSTALLATION, PREPARED IN TRIPLICATE AND GIVEN TO THE OWNER.

B. AFTER COMPLETION OF ALL INSTALLATION, TESTS, ETC. AND PRIOR TO THE OPENING DATE THE SPRINKLER CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION OF THE SPRINKLER SYSTEM. PROVIDE WRITTEN OPERATING INSTRUCTIONS AND MOUNT ON WALL IN A FRAME WITH GLASS FRONT. INCLUDE THE FOLLOWING SO THAT THE OWNER:

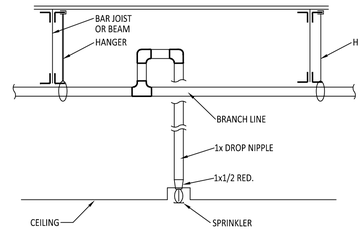
1. WILL IMMEDIATELY RECOGNIZE THE MAIN VALVES ARE IN OPEN OR CLOSED POSITION.
2. WILL KNOW HOW TO DRAIN THE SYSTEM.
3. WILL KNOW HOW TO RESET THE ALARM SYSTEM.
4. WILL KNOW NOW TO MAKE COMPLETE WEEKLY INSPECTION.
5. WILL KNOW HOW TO MAINTAIN THE SYSTEM IN ACCORDANCE WITH NFPA NO. 13.

3.10 PROTECTION DURING CONSTRUCTION:

A. CONTRACTOR SHALL COMPLETE THE AUTOMATIC FIRE SPRINKLER SYSTEM READY FOR OPERATION, IN ALL RESPECTS, AS SOON AS POSSIBLE. WHEN THE SYSTEM IS COMPLETE AND READY FOR CONTINUOUS OPERATION, ACTIVATE THE SYSTEM FOR ITS INTENDED USE.

### FIRE PROTECTION NOTES:

1. CONTRACTOR SHALL INSTALL AN AUTOMATIC SPRINKLER SYSTEM FOR THE BUILDING IN ACCORDANCE WITH NFPA 13. "INSTALLATION OF SPRINKLER SYSTEM" AS DESIGNED BY A LICENSED FIRE PROTECTION SPECIALIST, AND AS APPROVED BY THE CITY OF LINN SAN MANUEL, TX. FIRE MARSHAL AND THE OWNER'S INSURANCE UNDERWRITER.
2. ALL SPRINKLERS LOCATED IN LIGHT HAZARD AND ORDINARY HAZARD GROUP 1 AREA SHALL BE "STANDARD ORIFICE TYPE" WITH 1/2 INCH DIAMETER NOMINAL ORIFICE SIZE, AND ALL SPRINKLERS LOCATED IN ORDINARY HAZARD GROUP 2 AREA SHALL BE "LARGE ORIFICE TYPE" WITH 17/32 INCH DIAMETER NOMINAL ORIFICE SIZE OR OTHER FM APPROVED AND UL LISTED SPRINKLERS AS APPROVED FOR THE PROPOSED APPLICATION.
3. CONTRACTOR SHALL INSTALL PORTABLE FIRE EXTINGUISHERS AND FIRE EXTINGUISHER CABINETS IN ACCORDANCE WITH NFPA 10 UNLESS OTHERWISE INDICATED BY THE CITY FIRE MARSHAL COORDINATE LOCATION WITH ARCHITECT.
4. CONTRACTOR SHALL INSTALL A FIRE ALARM SYSTEM REQUIRED FOR LIFE SAFETY IN ACCORDANCE WITH NFPA 70, NFPA 72. FACTORY MUTUAL ENGINEERING DESIGN CRITERIA, INTERNATIONAL FIRE CODE, CITY APPLICABLE BUILDING CODE, TEXAS ACCESSIBILITY STANDARDS, AND THE AMERICAN WITH DISABILITIES ACT REQUIREMENTS. CONTRACTOR SHALL SUBMIT FOR ENGINEER'S APPROVAL THE PROPOSED FIRE ALARM SYSTEM DESIGN AND PRODUCT INFORMATION, AS PREPARED BY A REGISTERED QUALIFIED FIRE ALARM SPECIALIST.
5. CONTRACTOR SHALL SUBMIT FOR ENGINEER'S REVIEW AND APPROVAL (BEFORE COMMENCEMENT OF WORK) A PROPOSED FIRE PROTECTION SPRINKLER SYSTEM PREPARED BY A LICENSED AND REGISTERED FIRE SPRINKLER SYSTEM PROFESSIONAL, THE SUBMITTAL SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING ELEMENTS:
   A) CONSTRUCTION DRAWINGS OF THE PROPOSED FIRE PROTECTION SYSTEM. INCLUDING: PIPE LAYOUT, ALARM VALVE, DRAIN VALVES, TEST VALVES, ETC., AND THE CENTERLINE ELEVATIONS OF THE BRANCH LINES, CROSS MAINS AND FEED MAINS.
   B) CONTRACTOR'S WORK PLAN AND SCHEDULING.
   C) METHODS AND MATERIALS OF CONSTRUCTION. THE LICENSED PROFESSIONAL MUST BE KNOWLEDGEABLE WITH AND IN COMPLIANCE WITH ALL APPROPRIATE UL LISTINGS AND FACTORY MUTUAL REQUIREMENTS. SYSTEM DESIGN, MATERIAL, FABRICATION AND INSTALLATION SHALL MEET MOST CURRENT EDITION OF NFPA 13, UNIFORM FIRE CODE, AND FACTORY MUTUAL DESIGN AND INSTALLATION REQUIREMENTS AND SHALL BE SUBMITTED FOR APPROVAL BY CITY FIRE MARSHAL, STATE AND THE OWNER'S INSURANCE UNDERWRITER.
6. 3" AND LARGER PIPING SHALL BE BLACK CARBON STEEL SCH-40 ASTM A53 WITH CUT GROOVED FITTINGS. 2 1/2" AND SMALLER PIPING SHALL BE BLACK CARBON STEEL SCH-40 ASTM A53 WITH THREADED CLASS 125 FITTINGS. ALL PIPE HANGERS SHALL BE BLACK CARBON STEEL. PIPING, FITTINGS AND PIPE HANGERS BE AS MANUFACTURED BY VICTAULIC, ITT GRINNEL, GRUVLOK OR APPROVED EQUAL. OR OTHER FM APPROVED AND UL LISTED PIPING AS APPROVED FOR THE PROPOSED APPLICATION.
7. ALL PIPE HANGER MATERIAL TO BE BLACK IRON.
8. NEW PIPING TO BE HYDROSTATIC ALLY TESTED AT 210 PSI FOR A MINIMUM 2 HOURS, TEST TO BE WITNESSED BY OWNER'S REPRESENTATIVE.
9. CONTRACTOR SHALL INSTALL FIRE PROTECTION SYSTEM PLUMB AND STRAIGHT WITH BUILDING VERTICAL AND HORIZONTAL.
10. ALL VALVES SUCH AS INSPECTOR TEST VALVES TO BE LOCATED AT LEAST 6' FROM FLOOR. INSPECTOR TEST VALVES SHALL BE INSTALLED AS PER NFPA 13 REQUIREMENTS.
11. CONTRACTOR SHALL PLACE THE SPRINKLER HEADS IN THE CENTERS OF THE CEILING TILES, AND SHALL ALIGN SPRINKLER HEADS.
12. CONTRACTOR SHALL INSTALL HIGH END TEST STATIONS AND LOW END DRAINS AS REQUIRED BY NFPA 13.
13. CONTRACTOR SHALL INSTALL ALL SPRINKLER PIPES AND FITTINGS LEVEL, SO THAT THE SYSTEM CAN BE DRAINED, TRAPPED PIPING SHALL BE DRAINED THROUGH AUXILIARY DRAINS. THESE AUXILIARY DRAINS SHALL BE INSTALLED AT THE LOCATIONS WHERE A CHANGE IN PIPING DIRECTION PREVENTS DRAINAGE OF THE SYSTEM PIPING THROUGH THE MAIN DRAIN VALVE.




1 TYPICAL PENDENT SPRINKLER DETAIL
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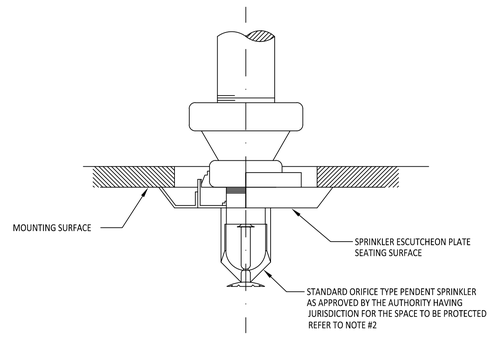


2 TWO-PIECE (ADJUSTABLE) FLUSH ESCUTCHEON PLATE
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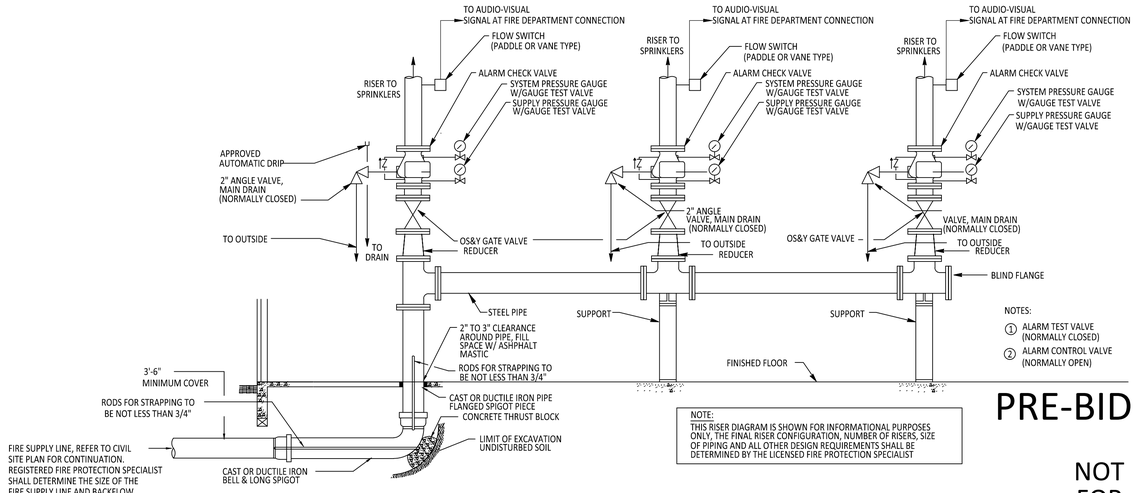


NOTE:
THIS RISER DIAGRAM IS SHOWN FOR INFORMATIONAL PURPOSES ONLY, THE FINAL RISER CONFIGURATION, NUMBER OF RISERS, SIZE OF PIPING AND ALL OTHER DESIGN REQUIREMENTS SHALL BE DETERMINED BY THE LICENSED FIRE PROTECTION SPECIALIST

3 WET PIPE RISER DETAIL
SCALE: N.T.S.

THESE CONCEPTUAL FIRE SPRINKLER PROTECTION PLANS ARE FOR INFORMATION PURPOSES ONLY. ALL CIVIL AND FIRE SPRINKLER PLANS ARE TO BE SUBMITTED SEPARATELY TO THE FIRE DEPARTMENT FOR REVIEW OF COMPLIANCE TO THE RESPECTIVE GOVERNING STANDARDS. (LINN SAN MANUEL, TEXAS)

PRE-BID SET

NOT FOR CONSTRUCTION

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LINN – SAN MANUEL
EMERGENCY SERVICES FACILITY
PRECINCT NO. 4

PROJECT: LINN–SAN MANUEL, TEXAS
OWNER: HIDALGO COUNTY

STATE OF TEXAS · GABRIEL HINOJOSA · 96585 · LICENSED PROFESSIONAL ENGINEER
06-04-2021


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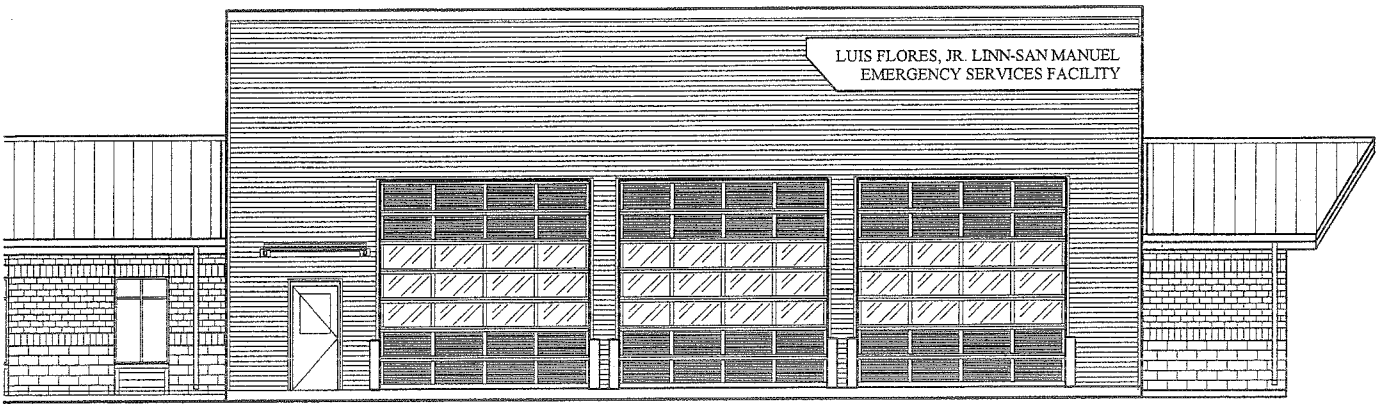
# Hidalgo County Precinct No. 4
# Linn - San Manuel Emergency Services Facility
**San Manuel, Texas**

## County of Hidalgo
**2014-067-04-02-MSS-Hidalgo County Precinct No. 4**
**"Construction of the Linn – San Manuel Emergency Services Facility**

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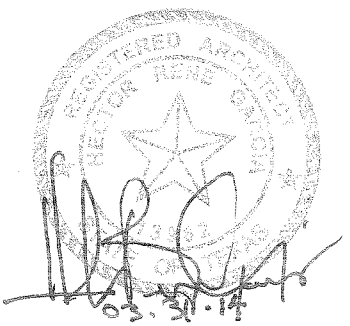
Tel: 956.687.5362
Fax: 956.687.5363




February 27, 2014

Volume 1
SET NO. _____

# Hidalgo County Precinct No. 4
# Linn - San Manuel Emergency Services Facility
San Manuel, Texas

County of Hidalgo
2014-067-04-02-MSS-Hidalgo County Precinct No. 4
"Construction of the Linn – San Manuel Emergency Services Facility

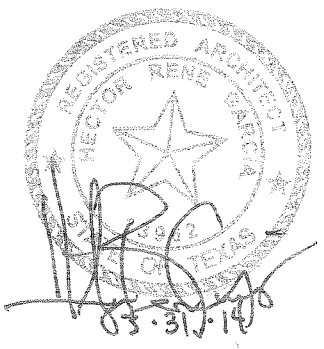
Mata + Garcia Architects LLP
1314 Ivy Avenue
McAllen, Texas 78501
Tel: 956.631.1945
Fax: 956.631.1968

Sigma HN Engineers, PLLC

701 South 15th Street
McAllen, Texas 78501
Tel: 956.332.3206
Fax: 956.687.5561

Chanin Engineering
400 Nolana, Suite D
McAllen, Texas 78504
Tel: 956.687.9421
Fax: 956.687.3211

LeFevre Environmental
& Management Consulting LLP
612 Nolana
McAllen, Texas 78504
Tel: 956.687.5362
Fax: 956.687.5363


February 27, 2014

Volume 2
SET NO. _____

# TITLE PAGE

**TITLE AND LOCATION OF WORK**
**2014-067-04-02-MSS-Hidalgo County Precinct No. 4**
**"Construction of the Linn – San Manuel Emergency Services Facility**
**San Manuel, Texas**

**NAME AND ADDRESS OF OWNER**
**Hidalgo County / Hidalgo County Pct. 4**
**C/O Hidalgo County Purchasing Department**
**Hidalgo County New Administration Building**
**2802 South Business Hwy. 281**
**(Southeast of Canton Road and Business 281)**
**Edinburg, Texas 78539**

**TITLE OF DOCUMENTS BOUND HEREWITH**

**TITLE PAGE**
**INDEX OF DRAWINGS**
**TABLE OF CONTENTS**
**BIDDING REQUIREMENTS**
**CONTRACT DOCUMENTS**

**DATE: February 27, 2014**

**PROJECT NUMBER: 201307**

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| Exhibit E, Proposer's Affidavit | 1 Page |
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| County Forms Submittal Check List | 1 Page |
| Draft: AIA Doc A101-2007, Std. Form of Agreement Between Owner & Contractor | 8 Pages |
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# REQUEST FOR BIDS

**TO SUPPLY HIDALGO COUNTY** with sealed bids for: -**HIDALGO COUNTY PRECINCT NO. 4-"Construction of the Linn - San Manuel Emergency Service Facility" (Project # 2014-067-04-02-MSS).**

**A BIDDER'S BOND** from a reliable surety company licensed to operate in the State of Texas or certified Cashier's Check, payable without recourse to the County of Hidalgo, for the amount of not less than **5%** of the total bid shall accompany the bid as guaranty that, if awarded the contract, the bidder will enter into a contract with the County of Hidalgo. Payment and Performance Bonds shall be executed except in the event into a single payment contract with the County of Hidalgo in lieu of a Performance Bond. In the event the total amount bid is $25,000 or less, the successful contract has the option to enter into a single payment contract with the County of Hidalgo in lieu of a Payment and Performance Bond.

**Bid Packets** may be obtained at the office of the project architect ***Hector Rene Garcia, AIA,*** **Mata-Garcia Architects, L.L.P. 1314 West Ivy Avenue, McAllen, Texas 78501, (956) 631-1945** for the amount of **$250.00.** General and/or Prime Contractors submitting bids and/or proposals to the County of Hidalgo shall be refundable.

***PRE-BID CONFERENCE is scheduled for Monday, March 24th, 2014 at 3:00 P.M. at HIDALGO COUNTY PURCHASING DEPARTMENT CONFERENCE ROOM-2812 S. Business Hwy 281, EDINBURG, TEXAS 78539***

**UPON SUBMITTING SEALED BID,** bidders are required to properly identify (handwritten, typed or printed) sealed envelope and/or packet as follows: Bidders' name and address on the upper left hand corner of the sealed envelope and/or package and Bid **No.:2014-067-04-02-MSS**- HIDALGO COUNTY PRECINCT NO. 4 -**"Construction of the Linn - San Manuel Emergency Service Facility"** on the lower left hand corner of sealed envelope/and or packet. **OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE.**

The sealed bid must contain one (1) original and three (3) copies of bid and must be clearly identified and addressed for delivery to:

**Martha L. Salazar, CPPB, Hidalgo County Purchasing Agent**
**Hidalgo County Purchasing Department**

| US Postal Mail/Courier Address | Physical Location: |
|---|---|
| Hidalgo County New Administration Building | Hidalgo County New Administration Building |
| 2812 S. Business Hwy 281 | 2802 S. Business Hwy. 281 |
| Edinburg, Texas 78539 | (Southeast of Canton Rd & Business 281) |
| | Edinburg, Texas 78539 |

**BIDS ACCEPTANCE:** Sealed bids will be accepted until **3:00 p.m. on Wednesday, April 2nd, 2014** at which time they will be opened in the Hidalgo County Purchasing Department Conference Room at **Physical Location: 2802 S. Business Hwy 281, Hidalgo County New Administration Building, Edinburg, Texas 78539.** NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY BID RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED.

Attention is called to the fact that not less than, the federally determined prevailing **(Davis-Bacon and Related Acts)** wage rate, as issued and contained in the contract documents, must be paid on this project. In addition the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, age, disability or national origin.

**BIDS MAY BE HELD** by the County of Hidalgo for a period not to exceed ninety (90) days from the date of the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders, prior to awarding of the contract.

**THE COUNTY** reserves the right to refuse and reject any/all bids and to waive any/all formalities or technicalities, or accept the bids considered the best and most advantageous to the County.

Typed-written bidding RFI's shall be e-mailed to: ***Hector Rene Garcia, AIA, at hector@matagarcia-architects.com*** . Please call 956-631-1945 to confirm receipt of RFI. RFI's **will not be answered by phone**. NO HAND WRITTEN RFI'S will be processed/answered. All inquiries shall be forwarded by March 26th, 2014. Inquiries beyond this date will not be responded. Contact project architect's office for copies of Addenda. All bidders who paid a deposit will be required to return Addenda as part of the Construction Documents in order to receive full deposit refund.

**BY ORDER OF THE COMMISSIONERS COURT OF HIDALGO COUNTY, TEXAS** on this the 6th day of March, 2014.

**MARTHA L. SALAZAR, CPPB**
**HIDALGO COUNTY PURCHASING AGENT**

***REPORT ROAD HAZARDS@1-866-HCR-SAFE OR 1-866-427-7233***

March 10th, 2014

_____

_____

_____

_____

Re: **HIDALGO COUNTY PRECINCT No. 4 "Construction of the Linn - San Manuel Emergency Service Facility"**
BID No. -2014-067-04-02-MSS

Dear Gentleman/Ladies:

Enclosed please find a Request for Bid (RFB) packet for your review and consideration.

Hidalgo County Purchasing Department welcomes and appreciates your participation in the bid process.

If any further assistance is required, please do not hesitate to call the Purchasing Department 956/318-2626.

Sincerely,

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

MLS/mss

Enclosures

Hidalgo County Purchasing Department
2812 S. Business Highway 281
Edinburg, Texas 78539
(956) 318-2626/ Fax: (956) 318-2629

# HIDALGO COUNTY PRECINCT No. 4

## "Construction of the Linn - San Manuel Emergency Service Facility"

BID No. -2014-067-04-02-MSS

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| 5. | Exhibit D, CIQ Conflict of Interest Questionnaire | 1 |
| 6. | Exhibit E, Proposer's Affidavit | 1 |
| 7. | Certification Regarding Debarment | 1 |
| 8. | Vendor/Bidder Application and W-9 form | 6 |
| 9. | County Forms Submittal Check List | 1 |


The above mentioned items shall be found in this RFB packet. Should you find that any of the items are not attached in its entirety please contact Purchasing by calling (956) 318-2626, advise of missing documentation, and Purchasing will forward information either through facsimile or by U.S. Mail.

Thank you.

**REQUEST FOR BIDS (RFB)**

# HIDALGO COUNTY PRECINCT No. 4

# "Construction of the Linn - San Manuel Emergency Service Facility"

## BID No. -2014-067-04-02-MSS

Acceptance Date: **April 2, 2014 @ 3:00 PM**

Martha L. Salazar, CPPB, Purchasing Agent
Hidalgo County Purchasing Department

Project Buyer Contact Information:

Moises Salazar, Buyer III
(956) 292-7000 Ext. 4863
moises.salazar@co.hidalgo.tx.us

Form HCPD-03

1. Sealed bids will be received for **"HIDALGO COUNTY PRECINCT NO. 4 - Construction of the Linn - San Manuel Emergency Service Facility"** in accordance with the specifications attached as Exhibit "A" hereto. Bids should address all specifications set forth. Bidders may suggest substitutions of features which they feel would be in the best interest of Hidalgo County ("County"). Strong rationale must be presented for any deviation from the specifications. Hidalgo County reserves the right to reject the deviation and its effect on the overall bid.

2. One (1) original and three (3) copies of all bids are required with the bidders name and return address clearly typed/printed on upper left hand corner and the proper notation clearly typed/printed on the lower left hand corner of the envelope and/or package: **"BID-2014-067-04-02-MSS- HIDALGO COUNTY PRECINCT NO. 4- CONSTRUCTION OF THE LINN - SAN MANUEL EMERGENCY SERVICE FACILITY"** and in County's Purchasing Department, physical address: 2802 S. Business Hwy 281, mailing address 2812 S. Business 281 New Administration Building,, Edinburg, Texas, **on or before 3:00 p.m.,** WEDNESDAY, **April 2, 2014.**

   **NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY RFB RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED. OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE WITH REFERENCE TO "REQUEST FOR BIDS -2014-067-04-02-MSS- HIDALGO COUNTY PRECINCT NO. 4 -CONSTRUCTION OF THE LINN - SAN MANUEL EMERGENCY SERVICE FACILITY".**

   WRITTEN QUESTIONS WILL BE ACCEPTED. Written RFI's shall be sent to the office of project architect: Mata-Garcia Architects, L.L.P. to the attention of Hector Rene Garcia, AIA, at hector@matagarcia-architects.com . Please call 956-631-1945 to confirm receipt of RFI. RFI's will not be answered by phone. NO HAND WRITTEN RFI'S will be answered. All inquiries shall be forwarded by March 26th, 2013. Inquiries beyond this date will not be responded. Contact project architect for copies of Addenda. All bidders who paid a deposit will be required to return Addenda as part of the Construction Documents in order to receive full deposit refund.

   Hidalgo County reserves the right to refuse and reject any/all RFB and to waive any/all formalities or technicalities, or to accept the RFB considered the best and most advantageous to Hidalgo County

3. Hidalgo County reserves the right to: A. separate and accept, or eliminate any item(s) listed under this bid that it deems necessary to accommodate budgetary and/or operational requirements; B. reject any or all bids submitted and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid for approval; and C. award the bid to one bidder or to multiple bidders if the County determines it is in its best interest to do so."

4. The Bidder shall not substitute items named in the bid without the express written consent of Hidalgo County. Failure of the delivered item(s) to perform as specified, or failure to meet the stated delivery schedule shall release Hidalgo County from all obligations to the contracting party with regard to the item(s) in question. In such event,

County may elect to award the contract to the next-lowest responsible bidder, or to reject all bids and re-advertise.

5. For work to be performed at a County owned or operated location, each bidder shall, in its sole discretion, visit the job site before preparing the bid and thoroughly familiarize himself/herself with existing conditions. Bidder should take field dimensions and note all circumstances which affect the dollar amount of the bid.

6. Descriptive specifications are referenced in this document to indicate the general kind and quality of equipment desired by Hidalgo County. Due to various styles and models of equipment, bidders are required to include illustrations, specifications, explanation of warranties, and service data with their bid including catalogue numbers and any necessary references.

7. No bid may be withdrawn within thirty (30) days from the scheduled time to open bids.

8. Proposed prices are to remain firm for a minimum of ninety (90) days after bid opening.

9. Any interpretations, amendments, corrections or changes to this bid document must be in a written addendum and signed by the County Judge or his designee. Addenda will be mailed to all who are known to have received a copy of the Request for Bids. Bidders shall acknowledge receipt of all addenda as a part of their bid.

10. County reserves the right to accept or reject any or all bids.

11. Costs are to be net F.O.B., County Prepaid.

12. County is exempt from Federal Excise Tax, State Tax and Local Tax. Do Not include tax in cost figure. If it is determined that tax was included in the cost figures it will not be included in the tabulation of any awards. Tax exemption certificates will be furnished upon request.

13. Funds for this procurement have been provided through the County budget for this fiscal year only. County, on an annual basis, has the right to reconsider a contract during the budget process for ensuing years if financial resources of County are insufficient to meet the liabilities of said contract. The award of a bid or contract hereunder will not be construed to create a debt of the County which is payable out of funds beyond the current fiscal year.

14. Upon award and prior to execution of a contract, Sole Proprietorships are required to submit a copy of their social security cards to the Hidalgo County Auditor's Office in order to establish an account with the County. All awarded vendors must submit a completed W-9 and a copy o their Federal ID Number Certificate.

15. DELIVERY INSTRUCTIONS:

- No deliveries accepted after 3:00 P.M., Monday-Friday.
- At least seventy two (72) hours prior notice of delivery must be given to Martha L. Salazar, Purchasing Agent before delivery will be accepted.

- If you need additional information call the office listed below:

16. BILLING AND PAYMENT INSTRUCTIONS:

- Invoices must include:
  a) Name and address of successful bidder
  b) Name and address of receiving department or official
  c) Purchase Order Number (if any)
  d) Notation - **BID-2014-067-04-02-MSS- HIDALGO COUNTY PRECINCT NO. 4-"Construction of the Linn - San Manuel Emergency Service Facility"** Descriptive information as to the items or services delivered, including product code, item number, quantity, etc.

- Discount payments will be considered when offered.

- Contact person for Billing and Payment questions:

**Ray Eufracio, CPA, Hidalgo County Auditor**
**2802 S. Business Hwy 281**
**Edinburg, TX 78539**
**(956) 318-2511**

17. Schedule

| | | |
|---|---|---|
| **Pre-Bid Conference,** | **3:00 PM** | **March 24 , 2014** |
| **Bid Opening,** | **3:00 PM** | **April 2 , 2014** |
| Award of Contract | | _____, 2014 |
| Commence Work or Deliver Products | | _____, 2014 |

HIDALGO COUNTY APPROVED HOLIDAYS

| 2014 YEAR | |
|---|---|
| New Year's Day | 01/01/14 |
| Martin Luther King Day | 01/20/14 |
| President's Day | 02/17/14 |
| Good Friday | 04/18/14 |
| Easter | 04/21/14 |
| Memorial Day | 05/26/14 |
| Independence Day | 07/04/14 |
| Labor Day | 09/01/14 |
| Veteran's Day | 11/11/14 |
| Thanks Giving Day | 11/27/14 and 11/28/14 |
| Christmas Day | 12/25/14 and 12/26/14 |
| New Years' Eve | 12/31/14 |

18. Bid or Performance Bond and Debarment Certification; Payment Under Contract:

. If the contract proposed is for the construction of public works or is for a contract for goods & services exceeding $100,000, all bidders shall furnish a good and sufficient bid bond in the amount of five percent of the total contract price. A bid bond must be executed with a surety company authorized to do business in Texas. All bidders are also required to furnish a certification or acknowledgment stating that the contractor or vendor is free from suspension or debarment pursuant to federal regulation 45CFR Part 76.

. Together with the signing of a contract or issuance of a purchase order following the acceptance of a bid, and prior to commencement of the actual work, the bidder shall furnish a performance bond to the County for the full amount of the contract, if that contract exceeds $100,000.

. If the contract is for $50,000 or less, no money will be paid to the contractor until completion and acceptance of the work or the fulfillment of the purchase obligation to the County, and, if applicable, the receipt by County of satisfactory evidence that all subcontractors and material men have been paid.

. If a contract is for the construction, alteration or repair of public buildings or public works, the contractor *shall* provide a payment bond for a contract in excess of Twenty Five Thousand Dollars ($25,000.00), as required by Tex. Govt. Code Ch. 2253.

. For requirements contracts, bond requirements are determined by applying the proposed unit price to the estimated quantities included in the specifications.

19. Ethical Standards:

. It shall be a breach of ethics to offer, give or agree to give any elected official, department head or employee, or former elected official, department head or employee, of the County, or for any elected official, department head or employee or former elected official, department head or employee of the County, to solicit, demand, accept or agree to accept from another person, entity or organization, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore pending before any department or agency of the County.

. It shall be a breach of ethics for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor for any contract for the County, or any person associated therewith, as an inducement for the award of a subcontract or order.

. No public official shall have an interest in a contract awarded hereunder except in accordance with Tex. Loc. Govt. Code Chapter 171.

- NOTICE:

ALL COMMUNICATIONS BY A VENDOR TO THE COUNTY, ITS OFFICIALS, AND DEPARTMENT HEADS REGARDING THIS PROCUREMENT SHALL BE DONE THROUGH THE HIDALGO COUNTY PURCHASING DEPARTMENT.

No vendor, its representative, agent, or employee shall engage in private communication with a member of the Hidalgo County Commissioners Court or county department heads regarding any procurement of goods or services by the County from the date that the Bid, RFP, or RFQ is released. No private communication regarding the purchase shall be permitted until the procurement process is complete and a purchase order is granted or a contract is entered into. Members of the commissioners court are required to make a reasonable effort to inform themselves regarding potential procurements and have a duty to inquire of vendors, their representatives or employees, the nature of any private communication being sought prior to engaging in any communication. "Private Communication" means communication with any vendor outside of a posted meeting of the governing body, a regular meeting of a standing or appointed committee, or a negotiation with a vendor which has been specifically authorized by the governing body.

20. Disclosure of Conflict of Interest

. Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor, person, consultant or contractor considering doing business with Hidalgo County ("the County") to disclose in the Conflict of Interest Questionnaire (the "CIQ") attached as Exhibit D, the vendor, person, consultant or contractor's affiliation or business relationship that might cause a conflict of interest with the County. By law, the CIQ must be filed with the Hidalgo County Clerk's Office no later than the seventh business day after the date the person becomes aware of facts that require that statement to be filed. The disclosure requirement applies to a person or business who contracts or seeks to contract with Hidalgo County for the sale or purchase of property, goods or service. Any purchase order or contract resulting from this process shall be considered null and void if the successful bidder fails to comply with Texas Local Government Code Chapter 176. Vendors, consultants, contractors and others who desire to conduct business with Hidalgo County are encouraged to refer to Texas Local Government Code Chapter 176 for the details of this law. An offense under Texas Local Government Code Chapter 176 is a Class C Misdemeanor.

Please Submit completed CIQ forms to the Hidalgo County Clerk's Office located at 100 N. Closner, Edinburg, Texas 78539-Hidalgo County Courthouse
**COMPLETION AND SUBMISSION OF FORM CIQ IS THE SOLE RESPONSIBILITY OF THE PROSPECTIVE BIDDER.**

21. If, during the life of any contract or bid awarded, the successful bidder's net prices generally available to other customers for items awarded herein are reduced below the contracted price, it is understood and agreed that the benefits of such reduction shall be extended to County.

22. Bids, and all goods and services provided thereunder, shall comply with all federal, state and local laws concerning this type(s) of goods and/or services

23. Minimum Standards For Responsible Prospective Bidders: A prospective bidder must affirmatively demonstrate bidder's responsibility. A prospective bidder, by submitting a bid, represents to County that it meets the following requirements:

- **Possess and submit a Certificate of Account Status indicating bidder is in "Good Standing" with the Texas Comptroller of Public Accounts if such bidder is incorporated in the State of Texas. If the bidder is not incorporated with the Texas, the bidder must submit the appropriate evidence of filing with the Texas Secretary of State stating that the business is authorized to transact business in Texas.**
- Possess or is able to obtain adequate financial resources as required to perform under the bid;
- Be able to comply with the required or proposed delivery schedule;
- Have a satisfactory record of performance;
- Have a satisfactory record of integrity and ethics;
- Be otherwise qualified and eligible to receive an award.

24. Successful bidder will pay or cause to be paid, without cost or expenses to County, all FICA, FUTA/SUTA and Federal Income Withholding Taxes of all employees, and all wages and benefits as required by Federal or State law. Successful bidder's officers, agents and/or employees will not be entitled to any benefits of an employee or elected official of County, including, but not limited to, benefits associated with County's civil service system.

25. Any contract award to a successful bidder will be in effect until (a) the contract expires, (b) delivery and acceptance of products, and/or performance of services ordered, or (c) terminated by County with thirty day's written notice prior to cancellation.

26. County reserves the right to enforce performance of any contract awarded hereunder in any manner prescribed by law or deemed to be in the best interest of the County in the event of breach or default by successful bidder; County reserves the right to terminate any contract immediately in the event a successful bidder fails to:

A. Meet schedules;
B. Pay any required fees or taxes; or
C. Otherwise perform in accordance with the specifications.

27. Successful bidder shall defend, indemnify and save harmless County and all its elected officials, officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful bidder, or of any agent, employee, subcontractor or supplier of successful bidder in the execution of, or performance under, any contract which may result from bid award or which arises from any event or casualty happening on or within County premises themselves or happening upon or in any halls, elevators, entrances, stairways or approaches of or to such County facilities. Successful bidder shall pay any judgment with costs which may be obtained against County growing out of such injury or

damages, and shall, upon request, provide a defense to County by counsel reasonably acceptable to County. Successful bidder's indemnity hereunder shall include, but is not limited to, claims relating to patent, copyright or trademark infringement, and the like, arising out of the goods and services provided by successful bidder.

28. Successful bidder shall warrant that all items/services shall conform with the specifications and/or all warranties provided under the Uniform Commercial Code and be free from all defects in material, workmanship and the like. Items supplied under a contract pursuant to this Request for Bids shall be subject to County's approval. Items found to be defective or not meeting specifications shall be replaced by successful bidder within two business days at no expense to County. Items not picked up within one (1) week after notification shall be deemed a donation to County and may be used or disposed of at County's discretion and without waiver of any other rights of County as to the item's nonconformity.

29. ***Vendors hereby assigns to purchaser any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States, 15 USCA, Section 1 et. seq., and which arise under the antitrust laws of the State of Texas, Bus. & Com. Code, Section 15.01, et. seq.***

30. This document and any disputes arising hereunder shall be governed and construed according to the laws of the State of Texas, and will be performable exclusively in Hidalgo County, Texas.

31. The successful bidder shall not assign, sell, transfer or convey its rights under any awarded contract, in whole or in part, without the prior written consent of County.

**BIDDERS ACKNOWLEDGEMENT**
**Bid for**

HIDALGO COUNTY PRECINCT NO. 4

**"Construction of the Linn - San Manuel Emergency Service Facility"**
**BID-2014-067-04-02-MSS**

To: Martha L. Salazar, CPPB, Purchasing Agent
Hidalgo County Purchasing Department
2802 S. Bus. Hwy. 281
Edinburg, Texas 78539

In accordance with the Specifications, and subject to all laws and regulations of the United States and state and local laws, the undersigned bidder proposes and commits to furnish all labor, equipment, material, software and services as set forth in the documents hereinbefore mentioned. The undersigned bidder further agrees, upon acceptance of its bid, to execute a contract and/or Purchase Order issued by Hidalgo County for performing and completing the work described in the Specifications within the time stated and for the prices proposed in the documents attached hereto and made a part hereof.

Bidder acknowledges receipt of all of the pages of the documents referenced in the Invitation to Bid Checklist presented in connection with this procurement. Bidder understands that Hidalgo County reserves the right to reject any or all bids and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing time for receiving bids, as contained in the Specifications.

Respectfully submitted,

Bidder: _____

Address: _____

By: _____

Printed Name: _____

Title: _____

**(This page must be submitted in response)**

## STATEMENT OF CREDENTIALS

**1. GENERAL:** In order to assist the Owner in determining the ability of each Bidder to properly fulfill the requirements of this proposed contract, the Bidder will complete the following items. All questions must be answered and the data given must be clear and comprehensive. **This statement must be notarized.** If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he/she desires.

Name of Bidder: _____

Address: _____

_____

Date Organized: _____ Date Incorporated: _____

Office Number: _____ Fax Number: _____

Number of years in business under present name: _____

Type of work performed by your company: _____

_____

Have you ever failed to complete any work awarded to you? _____

Have you ever defaulted on a contract? _____

**2. EXPERIENCE:** The Bidder will give below a list of similar projects which he/she has completed within the last five (5) years.

1. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

2. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

3. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

4. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

5. Owner: _____

Address: _____

Ph/Fx Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

**********

**3. CONTRACTS ON HAND:** The Bidder shall provide below a list of any contracts/projects he/she currently has on hand:

_____

_____

_____

_____

_____

_____

_____

4. **SUBCONTRACTORS:** List any subcontractors you propose to use on the Hidalgo County's project that will comprise at least 20% of the total project cost. Use additional page if necessary. This information is considered preliminary and may be revised prior if bid is awarded and re-submitted during the pre-construction phase. However, it is expressly understood that the use of any subcontractor other than those listed with bid shall require written approval from Hidalgo County.

   Failure to submit the information as required may result in a disqualification of your bid.

_____

_____

_____

_____

_____

5. **PERFORMANCE OF WORK BY BIDDER:** Except as otherwise provided, the bidder shall perform no more than eighty percent (80%) of the work with his own organization and no less than twenty percent (20%) of the work may be subcontracted.

   The organization of the specifications into divisions, sections, articles, etc., and the arrangement and titles of project drawings shall not control the Bidder in dividing the work among subcontractors or in establishing the extent of work to be performed by any trade.

   Awarded bidder shall assign a project superintendent who is directly employed by the Bidder, that superintendent will be required to be on the job on a daily basis. No subcontractors will be allowed to act as project superintendents at any point during the construction of said project.

Bidder shall have a significant business presence with the Rio Grande Valley Area, the business must be headquartered in either Hidalgo, Cameron, or Starr County or a local office must be located in either of the three counties (Hidalgo, Cameron, Starr) with at least thirty percent (30%) of the total company workforce employed at the local office. County reserves the right to request payrolls and any necessary documentation to confirm that the local office meets these requirements.

Bidders shall carefully examine the plans, specifications and other documents, visit the site of the work, and fully inform themselves as to all conditions and matters which can affect the work or cost thereof. Should the bidder find discrepancies in, or omissions from the plans, specifications or other documents, or should he/she be in doubt as their meaning, he/she should at once notify the Engineer and obtain clarification by addendum prior to submitting any bid.

Bidder herby certifies that said company carried liability coverage and workers compensation insurance coverage that meets the requirements set forth in this Request for Bids/Proposals when performing work on this project for Hidalgo County.

Furthermore, bidder certifies that any subcontractor on the project shall provide the said company with a certificate relating that all employees of the subcontractor also are provided with workers' compensation insurance coverage. Bidder will provide copies of all of these certificates to Hidalgo County during the course of the project for all subcontractors working on the project.

All subcontractors must comply with federally determined prevailing Davis-Bacon and Related Acts wage rate.

Hidalgo County encourages the hiring of minority women subcontractors and/or suppliers whenever and wherever feasible.

The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the owner in verification of the recitals comprising this Statement of Credentials.

Executed this _____ day of _____, 20_____.

_____

By_____

Title_____

**Subscribed and sworn** to me this _____ day of _____, 20___.

By:_____

Notary Public in and for _____County, Texas

My commission expires _____

# EXHIBIT "C"

## Insurance Requirements
## Applicable to the Acquisition of Goods and /or Services (other than Professional Services)

The Bidder awarded the contract shall furnish proof of insurance, which will also include any subcontractor that is subcontracted by the bidder in at least the following limits, to be in place prior to providing any services under this Contract and to continue at all times in force in effect during the term of this Contract:

1. A Five Hundred Thousand Dollar ($500,000.00) Comprehensive General Liability insurance policy providing additional coverage to all underlying liabilities of County.

2. Automobile liability insurance policy with limits of at least Three Hundred Thousand Dollars ($300,000.00) per person and Five Hundred Thousand Dollars ($500,000.00) per occurrence. Coverage should include injury to or death of persons and property damage claims with limits up to Five Hundred Thousand ($500,000.00) arising out of the services provided to County hereunder.

3. Uninsured/Underinsured motorist coverage in an amount equal to the bodily injury limits set forth immediately above;

4. Workers compensation insurance in amounts established by Texas law, unless the Bidder is specifically exempted from the Texas Workers Compensation Act, Texas Labor Code Chapter 401, et. seq.

**Hidalgo County will only accept certificates of insurance on an Acord form (as attached hereto).** Certificates of insurance naming County as an additional insured shall be submitted to County for approval prior to any services being performed by Contractor. Each policy of insurance required hereunder shall extend for a period equivalent to, or longer than the term of the Contract, and any insurer hereunder shall be required to give at least thirty (30) days written notice to the County prior to the cancellation of any such coverage on the termination date, or otherwise. This Contract shall be automatically suspended upon the cancellation, or other termination, of any required policy of insurance hereunder, and such suspension shall continue until evidence adequate replacement coverage is provided to County. If replacement coverage is not provided within thirty (30) days following suspension of the Contract, this Contract shall automatically terminate.

# ACORD

## CERTIFICATE OF INSURANCE

DATE (MM/DD/YY)

| PRODUCER | THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. |
|---|---|
| | **INSURERS AFFORDING COVERAGE** |
| INSURED | INSURER A: |
| | INSURER B: |
| | INSURER C: |
| | INSURER D: |
| | INSURER E: |

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THER TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | POLICY NUMBER | POLICY EFFECTIVE DATE (MM/DD/YY) | POLICY EXPIRATION DATE (MM/DD/YY) | LIMITS | |
|---|---|---|---|---|---|---|
| A | **GENERAL LIABILITY**<br>☐ COMMERCIAL GENERAL LIABILITY<br>☐ ☐ CLAIMS MADE OCCUR<br>☐ OWNER'S & CONT. PROT<br>☐ OWNER'S PROTECTIVE LIABILITY<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>☐ POLICY PROJECT ☐ LOC | | | | EACH OCCURRENCE | $ |
| | | | | | FIRE DAMAGE (Any one fire) | $ |
| | | | | | MED EXP (Any one person) | $ |
| | | | | | PERSONAL & ADV INJURY | $ |
| | | | | | GENERAL AGGREGATE | $ |
| | | | | | PRODUCTS – COMP/OP AGG | $ |
| | | | | | | |
| B | **AUTOMOBILE LIABILITY**<br>☐ ANY AUTO<br>☐ ALL OWNED AUTOS<br>☐ SCHEDULED AUTOS<br>☐ HIRED AUTOS<br>☐ NON-OWNED AUTOS | | | | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | | | | | BODILY INJURY (Per person) | $ |
| | | | | | BODILY INJURY (Per accident) | $ |
| | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | **GARAGE LIABILITY**<br>☐ ANY AUTO | | | | AUTO ONLY-EA ACCIDENT | $ |
| | | | | | OTHER THAN AUTO ONLY EA ACC | $ |
| | | | | | AGG | $ |
| C | **EXCESS LIABILITY**<br>☐ OCCUR ☐ CLAIMS MADE<br>☐ DEDUCTIBLE<br>☐ RETENTION $ | | | | EACH OCCURENCE | $ |
| | | | | | AGGREGATE | $ |
| | | | | | | $ |
| | | | | | | $ |
| | | | | | | $ |
| D | **WORKERS COMPENSATION AND EMPLOYER'S LIABILITY** | | | | WC STATU-TORY LIMITS ☐ OTHER | |
| | | | | | E.L. EACH ACCIDENT | $ |
| | | | | | E.L. DISEASE-EA EMPLOYEE | $ |
| | | | | | E.L. DISEASE-POLICY LIMIT | $ |
| | **OTHER** | | | | | |

**DESCRIPTION OF OPERATIONS / LOCATION / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS**

**County of Hidalgo shall be named as additional insured on all Commercial General Liability policies.**

| CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER: _____ CANCELLATION |
|---|---|
| **Hidalgo County**<br>**Attn: Purchasing Department**<br>**2812 S Highway Bus. 281**<br>**Edinburg, Texas 78539** | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BY CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL ***30*** DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.<br>AUTHORIZED REPRESENTATIVE |

SAMPLE

# Insurance Requirement Acknowledgment

I, _____, authorized representative for _____,
Company/Vendor

hereby acknowledge receipt of the County's required insurance limits. Said requirements:

❒ will be acquired within 10 working days after notification from Purchasing Department of bid awarded by the Hidalgo County Commissioners' Court;

❒ will acquire additional amounts required to meet the County's requirements within 10 working days after notification from Purchasing Department of bid award by the Hidalgo County Commissioners' Court; currently carry the following:

Automobile Liability: $_____ General Liability: $_____

❒ have already been met, see attached copy of insurance certificate.

_____ _____.
Authorized Representative Date

**Notice to Bidder:**
A certificate of insurance for the required insurance limits shall be provided to the Purchasing Department's Contract Managers in order to qualify for award of bid and to execute a contract between your Company and the County

Failure to provide Certificates of Insurance to the Purchasing Department's Contract Managers will cause the bid award to be rescinded and re-awarded to next lowest bidder. Certificates of Insurance will be monitored and verified on a **quarterly basis** to ensure coverage policy is in place. It is the Company's obligation to maintain the appropriate insurance coverage throughout the term of the contract.

**THIS FORM MUST ACCOMPANY BID PACKET**

# PROJECT REQUIREMENTS ACKNOWLEDGMENT

This is to certify that I, _____, possess all of the APPLICABLE:

1. Licenses: _____.
2. Bonds: _____.
3. Certificates: _____.
4. Permits: _____.
5. Other: _____.

necessary to carry out the required project. Furthermore, I am providing copies of the required documentation so that, if my company is awarded this bid, I may be eligible to enter into a contract with Hidalgo County and proceed to complete the project in a timely manner.

* Any licenses, bonds, certificates, permits, etc. which are required must be presented as part of the bid packet in order to expedite the bid evaluation process. Failure to provide said documentation will result in the disqualification of your bid.

_____ _____.

Authorized Signature Date

_____.

Company

_____.

Address

_____.

City, State, Zip

# CONFLICT OF INTEREST QUESTIONNAIRE

**FORM CIQ**

**For vendor or other person doing business with local governmental entity**

**This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.**

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code.

A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

**OFFICE USE ONLY**

Date Received

**1** **Name of person who has a business relationship with local governmental entity.**

**2** ☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

**3** **Name of local government officer with whom filer has employment or business relationship.**

_____

Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

☐ Yes ☐ No

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ No

D. Describe each employment or business relationship with the local government officer named in this section.

**4**

_____ _____

Signature of person doing business with the governmental entity Date

Adopted 06/29/2007

# PROPOSER'S AFFIDAVIT
# Exhibit "E"

**PROPOSER'S AFFIDAVIT OF NON-COLLUSION**
**NON-CONFILICT OF INTERST, AND ANTI-LOBBYING**

STATE OF TEXAS
COUNTY OF HIDALGO

Affiant, _____, being first duly sworn, deposes that:

(1) Affiant does hereby state neither the Proposer nor any of the Proposer's officers, partners, owners, agents, representatives, employees, or parties in interest, has in any way colluded, conspired, agreed, directly or indirectly with any person, firm, corporation, or other proposer, or potential proposer, to provide any money or other valuable consideration for assistance in procuring or attempting to procure a contract or fix the prices in the attached proposed or the proposal of any other proposer, and further states that no such money or other reward will be hereinafter paid.

(2) Affiant further states they have neither recommended or suggested to Hidalgo County or any of its officials or employees, any of the terms or provisions set forth in their Request for Proposal and subsequent agreement, except at a meeting open to all interested proposers, of which proper notice was given.

(3) Affiant, further states their officers, employees, or agents have not, and will not attempt to lobby, directly or indirectly, the Hidalgo County Commissioner's Court between proposal submission date and award by the Hidalgo County Commissioner's Court.

(4) Affiant further states no officer, or stockholder of the Proposer is a member of the staff, or related to any employee of the Hidalgo County except as noted herein below:

---

Signature/Title: _____

---

Subscribed and sworn to before me this _____day of _____, 20___.

_____

Notary Public

My commission expires:_____, 20___

**Certification**
**Regarding Debarment, Suspension Ineligibility**

As is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 76, Government-wide Debarment and Suspension, in the applicant certifies, to the best of his or her knowledge and belief, that both it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;

b. Have not within a three-year period preceding this bid/proposal and/or application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, theory, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity with commission of any of the offenses enumerated herein; and

d. Have not within a three-year period preceding this bid/proposal and/or application had one or more public transactions terminated of cause or default.

Signature:_____

Print Name:_____

Title:_____

Telephone Number:_____

Date:_____

If the proposer is unable to certify to all of the statements in this Certification, such proposer should attach an explanation to this proposal.

# HIDALGO COUNTY
# PURCHASING DEPARTMENT
# Proposer/Vendor Application

**Complete in print or type. Please return this application to the Hidalgo County Purchasing Department**
**thru Facsimile: (956) 318-2629 or (956) 292-7612**
**in person or regular mail to:**
**Mailing/Postal Address: 2812 S. Business Hwy. 281**
**Physical Address: 2802 S. Business Hwy. 281**
**Edinburg, Texas 78539**
**or e-mail: purchasing@co.hidalgo.tx.us**

**Company Name**: **Telephone No. ( )**

**dba Name:**

**Legal Name:**

**Mailing Address:** **Fax No. ( )**

**Physical Address:**

**City, State, Zip** **Tax I.D. No.**

**Remit to Address :** **City, State, Zip**

**E-Mail Address:**

**Representative(s) Name(s) & Title(s)**

**Type of Organization (check one): _____ Individual _____ Partnership _____ Corporation _____Non-Profit**
**_____ LLC _____ Sole Proprietor _____ Other, Specify**
**State Identification No._____ (Please attached completed W-9 form with this application)**
**Federal Identification No. or (if individual) SS No.**

**State of Incorporation: _____ Date:_____ Other**:

**Type of Business (check one): _____ Manufacturer _____ Wholesaler _____ Retailer _____ Broker**
**_____ Distributor _____ Service Organization _____ Other, Specify**

**Name & Title of Person(s) Authorized to Sign Bids, Proposals, and/or Contracts:**

**Small and/or Disadvantaged Business Information (check application criteria)**

| **Small Business:** | **Disadvantaged Business (At Least 51% Ownership)** | |
|---|---|---|
| ☐ Less than 125,000 annual gross receipt | ☐ Black American | ☐ Native American |
| ☐ Less than 250,000 annual gross receipt | ☐ Hispanic American | ☐ Women |
| ☐ Less than 499,000 annual gross receipt | ☐ Asian Pacific American | ☐ Other |
| ☐ More than 500,000 annual gross receipt | | |

**Have you been certified as a HUB or an MBE/WBE source?:** ☐ Yes ☐ No

**Indicate Certification No.(s):_____ or are Certificate(s) attached?:** ☐ Yes ☐ No

**What type of product(s) is/are solicited by your company?:**

**Would you like to be provided with specifications for procurements of such products?:** ☐ Yes ☐ No

**To Be Completed by the County: Rec'd by (Purchasing):_____ Date Rec'd by (Purchasing):**

**Date Forwarded Information to Auditor's Office:_____Entry Date: _____ Vendor No.:**

**(THIS PAGE MUST BE SUBMITTED WITH PROPOSAL)**

## HISTORICALLY UNDERUTILIZED BUSINESS (HUB) DECLARATION

The primary objective of the Hidalgo County HUB Program is to ensure Historically Underutilized Businesses receive a fair and equal opportunity for participation in the County's procurement process. This fact holds true for Services (Professional & Non-Professional), Commodities, and Construction contracts and any subcontracts thereto. The program strongly encourages Prime Contractors to provide subcontracting opportunities to Certified Hub Contractors/Vendors. Our goal for HUB contractor/vendor participation, as well as HUB subcontractor participation is 30%. To be considered as a "Certified HUB Contractor/Vendor" the contractor/vendor must have been certified by, and hold a current and valid certification with any of the three agencies listed below.

Have you been Certified as a HUB or an MBE/WBE source?: □Yes □ No

If yes, by whom?: □ Texas Building & Procurement Commission □ Other_____

Indicate Certification No(s).:_____ or Are Certificate(s) Attached?: □ Yes □ No

## LIST OF CERTIFIED HUB SUBCONTRACTORS

(Attach additional pages if necessary)

What percentage of the Bid, RFP, or RFQ is to be subcontracted with Certified HUB sources?: _____%
(List HUB Subcontractor information below).

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): □Texas Building & Procurement Commission □other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): □Texas Building & Procurement Commission □other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): □Texas Building & Procurement Commission □other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

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**(THIS PAGE MUST BE SUBMITTED WITH PROPOSAL)**

Form **W-9**
(Rev. January 2005)
Department of the Treasury
Internal Revenue Service

# Request for Taxpayer Identification Number and Certification

**Give form to the requester. Do not send to the IRS.**

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)

Business name, if different from above

Check appropriate box: ☐ Individual/ Sole proprietor ☐ Corporation ☐ Partnership ☐ Other ► ..... ☐ Exempt from backup withholding

Address (number, street, and apt. or suite no.) | Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** *If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.*

**Social security number**
___ ___ ___ – ___ ___ – ___ ___ ___ ___

**or**

**Employer identification number**
___ ___ – ___ ___ ___ ___ ___ ___ ___

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. person (including a U.S. resident alien).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 4.)

**Sign Here** | **Signature of U.S. person ►** | **Date ►**

## Purpose of Form

A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

**U.S. person.** Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee.

**Note.** *If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.*

For federal tax purposes you are considered a person if you are:

- An individual who is a citizen or resident of the United States,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, or
- Any estate (other than a foreign estate) or trust. See Regulations sections 301.7701-6(a) and 7(a) for additional information.

**Foreign person.** If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

***Example.*** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments (after December 31, 2002). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester, or

2. You do not certify your TIN when required (see the Part II instructions on page 4 for details), or

3. The IRS tells the requester that you furnished an incorrect TIN, or

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate Instructions for the Requester of Form W-9.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

# Specific Instructions

## Name

If you are an individual, you must generally enter the name shown on your social security card. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your social security card on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

**Limited liability company (LLC).** If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, enter the owner's name on the "Name" line. Enter the LLC's name on the "Business name" line. Check the appropriate box for your filing status (sole proprietor, corporation, etc.), then check the box for "Other" and enter "LLC" in the space provided.

**Other entities.** Enter your business name as shown on required Federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

**Note.** You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).

## Exempt From Backup Withholding

If you are exempt, enter your name as described above and check the appropriate box for your status, then check the "Exempt from backup withholding" box in the line following the business name, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

**Exempt payees.** Backup withholding is not required on any payments made to the following payees:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),

2. The United States or any of its agencies or instrumentalities,

3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,

4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or

5. An international organization or any of its agencies or instrumentalities.

Other payees that may be exempt from backup withholding include:

6. A corporation,

7. A foreign central bank of issue,

8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,

9. A futures commission merchant registered with the Commodity Futures Trading Commission,

10. A real estate investment trust,

11. An entity registered at all times during the tax year under the Investment Company Act of 1940,

12. A common trust fund operated by a bank under section 584(a),

13. A financial institution,

14. A middleman known in the investment community as a nominee or custodian, or

15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, 1 through 15.

| IF the payment is for . . . | THEN the payment is exempt for . . . |
|---|---|
| Interest and dividend payments | All exempt recipients except for 9 |
| Broker transactions | Exempt recipients 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker |
| Barter exchange transactions and patronage dividends | Exempt recipients 1 through 5 |
| Payments over $600 required to be reported and direct sales over $5,000 [1] | Generally, exempt recipients 1 through 7 [2] |

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees; and payments for services paid by a Federal executive agency.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner LLC that is disregarded as an entity separate from its owner (see *Limited liability company (LLC)* on page 2), enter your SSN (or EIN, if you have one). If the LLC is a corporation, partnership, etc., enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at *www.socialsecurity.gov/online/ss-5.pdf*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses/* and clicking on Employer ID Numbers under Related Topics. You can get Forms W-7 and SS-4 from the IRS by visiting *www.irs.gov* or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** *A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.*

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt recipients, see *Exempt From Backup Withholding* on page 2.

**Signature requirements.** Complete the certification as indicated in 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

## What Name and Number To Give the Requester

| For this type of account: | Give name and SSN of: |
|---|---|
| 1. Individual | The individual |
| 2. Two or more individuals (joint account) | The actual owner of the account or, if combined funds, the first individual on the account [1] |
| 3. Custodian account of a minor (Uniform Gift to Minors Act) | The minor [2] |
| 4. a. The usual revocable savings trust (grantor is also trustee) | The grantor-trustee [1] |
| b. So-called trust account that is not a legal or valid trust under state law | The actual owner [1] |
| 5. Sole proprietorship or single-owner LLC | The owner [3] |
| **For this type of account:** | **Give name and EIN of:** |
| 6. Sole proprietorship or single-owner LLC | The owner [3] |
| 7. A valid trust, estate, or pension trust | Legal entity [4] |
| 8. Corporate or LLC electing corporate status on Form 8832 | The corporation |
| 9. Association, club, religious, charitable, educational, or other tax-exempt organization | The organization |
| 10. Partnership or multi-member LLC | The partnership |
| 11. A broker or registered nominee | The broker or nominee |
| 12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments | The public entity |

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or "DBA" name on the second name line. You may use either your SSN or EIN (if you have one). If you are a sole proprietor, IRS encourages you to use your SSN.

[4] List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, and the District of Columbia to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

# HIDALGO COUNTY PRECINCT No. 4
## "Construction of the Linn - San Manuel Emergency Service Facility"

BID No. -2014-067-04-02-MSS

## SUBMITTAL CHECK LIST

The following list of forms must be included in the RFB response, failure to submit any of these forms may be considered non responsive.

**Indicate with a check mark (✓) the Forms completed and included in response:**

_____ Page 9 of Legal Notice

_____ Exhibit "C" -Acknowledgement forms (pages 3 and 4)

_____ Exhibit "D" -CIQ Form.

_____ Exhibit "E" –Proposers Affidavit

_____ Certification Regarding Debarment

_____ Vendor Bidder Application and IRS form W-9

_____ STATEMENT OF CREDENTIALS

_____ One (1) original and three (3) copies of complete Response, including any other documentation requested in this RFB not herein listed (i.e. Bid Form, Bid Bond, Sub-Contractors List, references, etc).

Firm Name: _____

Authorized Signature: _____ Date: _____

DRAFT

# AIA® Document A201™ – 2007

## *General Conditions of the Contract for Construction*

For the following PROJECT:
*(Name and location or address)*
Hidalgo County Precinct No. 4 –Construction of the Linn – San Manuel Emergency Service Facility

THE OWNER:
*(Name, legal status and address)*
County of Hidalgo
2812 S. Business Hwy 281
Edinburg, TX 78539

THE ARCHITECT:
*(Name, legal status and address)*
Mata-Garcia Architects, L.L.P.
1314 West Ivy Avenue
McAllen, TX 78501
(956) 631-1945

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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.


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**User Notes:** (1682601336)

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## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 BASIC DEFINITIONS

#### § 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect pursuant to Paragraph 7.4. At the Owner's option, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.1.1 Contractor acknowledges and warrants that it has closely examined all the Contract Documents and is unaware of any instance where the documents are not suitable or are insufficient, to enable the Contractor to complete the Work in a timely manner for the Contract sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred or useful for the completion of the Work in full compliance with all applicable codes, laws, ordinances, and regulations.

#### § 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor except as provided in Paragraph 5.3 and 5.4 hereof, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations of the Contractor under the Contract intended to facilitate performance of the Architect's duties.

#### § 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.3.1 The Work shall include the obligation of the Contractor to visit the site of the project before submitting a proposal. Such site visit shall be for the purpose of familiarizing Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract Document, including all existing site conditions, access to the site, physical characteristics of the site and surrounding areas. It also includes all supplies, skill, supervision, transportation services and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the Contract and all other items of cost or value needed to produce, construct and fully complete the public work identified by the Contract Documents identified.

#### § 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

#### § 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams wherever located and whenever issued.

#### § 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

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§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to Owner and Architect by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all bidders.

If such differences or conflicts were not called to Owner's and Architect's attention prior to submission of bids, Architect shall decide which of the conflicting requirements will govern based upon the following: the most stringent of the requirements will take precedence over the less stringent; the most expensive item will take precedence over the less expensive, and subject to the approval of Owner, Contractor shall perform the Work at no additional cost and/or time to Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable as being necessary to produce the intended results.

§ 1.2.1.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

.1 The Agreement;
.2 Addenda, with those of later date having precedence over those of earlier date;
.3 Supplemental Conditions;
.4 The General Conditions of the Contract for Construction;
.5 Specifications
.6 Drawings, in the case of inconsistency between the Drawings and Specifications or within either document, not clarified by Addendum, the better quality or greater quantity of Work shall be included in the Contract Documents. Clarifications of the inconsistency will be accomplished with the Contractor and, if necessary, an appropriate reduction in the contract will be accomplished with the Contractor and, if necessary, an appropriate reduction in the contract will be accomplished by Change Order. Figures given on drawings govern scale measurements. Large scale drawings take precedence over small sale drawings. Written words, take precedence over numbers. Handwritten documents take precedence over typewritten documents. Existing conditions take precedence over drawings and specifications for dimensions and shall be verified by the Contractor. The Contractor proceeds at his own risk if conflicts or discrepancies are not resolved prior to the execution of the Work.

§ 1.2.1.2 If Work is required in a manner to make it impossible to produce Work of the quality required by or reasonably inferred from the Contract Documents, or should discrepancies appear among the Contract Documents, Contractor shall request in writing an interpretation from Architect before proceeding with the Work. If Contractor fails to make such request, no excuse will thereafter be entertained for failure to carryout Work in the required manner or provide required guarantees, warranties, or bonds, and Contractor shall not be entitled to any change in the Contract Sum or the Contract Time on account of such failure.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

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§ 1.3 CAPITALIZATION
Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION
In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE
§ 1.5.1 Instruments of Service, including the Drawings, Specifications, and other similar or related documents and copies thereof are furnished to Contractor for the purpose of performing the Work and are, and shall remain, the property of Owner and Owner will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owner or Owners' consultants reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM
If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER
§ 2.1 GENERAL
§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Commissioners Court of Owner, by majority vote, is the only representative of Owner, having the power to enter into a Contract, to execute a change order requiring an increase in the Contract Sum, or agree to an extension of the contractual completion date. The Commissioners Court shall designate, as appropriate, an authorized representative(s) to act on its behalf during the course of construction. In the event that an emergency changes the scope of the Work before the next regular meeting or in order to facilitate and expedite the timely completion of the Work, the Commissioners Court's authorized representative(s) may approve construction changes that do not exceed $10,000.00 in increased costs. Any such changes shall be confirmed in writing between the Contractor and the Commissioner Court's authorized representative(s) and notice of such approved changes shall be given to the Commissioners Court at its next regular meeting. The Commissioners Court will act as soon as reasonably possible to avoid undue delays in the construction completion date.

§ 2.1.2 **DELETED**.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER
§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

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§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics and utility locations, and legal limitations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. In connection with the foregoing, Contractor shall be solely responsible for locating (and shall locate prior to performing any Work) all utilities lines, telephone company lines and cable, sewer lines, water pipes, gas lines, electrical lines, including without limitation, all buried pipelines and buried telephone cables an shall perform the Work in such a manner so as to avoid damaging any such lines, cables, pipes and pipelines. Under this provision the Architect and Engineer are in no way relieved of their responsibilities outlined in the Contract or other attached contracts for identification of existing conditions.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2 for use on this Project. All costs of reproduction are the responsibility of Contractor.

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents or fails to remove and discharge (within ten (10) days) any lien filed upon Owner's or Landlord's property by anyone claiming by, through, or under Contractor or disregards the instructions of Architect or Owner when based on the requirements of the Contract Documents. The Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. However, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3, and any delay resulting from such Work stoppage shall not extend any Milestone Date identified in the Contract for Construction or the required dates of Substantial or Final Completion.

### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

§ 2.4.1 The rights stated in Article 2 shall be in addition to and not in limitation of any other rights of Owner granted in the Contract Documents or at law or in equity.

## ARTICLE 3 CONTRACTOR

### § 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

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§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

### § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect and Owner in writing any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for design information in such form as the Architect may require.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect and Owner in writing any nonconformity discovered by or made known to the Contractor as a request for design information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities unless the Contractor recognized or reasonably should have recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect and Owner.

§ 3.2.5 The Contractor shall not be entitled to additional compensation for the "rework portion" of any additional work caused by his failure to carefully study and compare the Contract Documents prior to execution of the Work.

§ 3.2.6 The Contractor shall make reasonable attempt to interpret the Contract Documents before asking the Architect for assistance in interpretation. The Contractor shall not ask the Architect for observation of work prior to the Contractor's field superintendent's personal inspection of the work and his determination that the work complies with the Contract Documents.

§ 3.2.7 If, in the opinion of the Architect, the Contractor does not make a reasonable effort to comply with the above requirements of the Contract Documents and this causes the Architect or his consultants to expend an unreasonable amount of the time in the discharge of the duties imposed on him by the Contract Documents, then the Contractor shall bear the cost of compensation for the Architect's additional services made necessary by such failure. The Architect will give the Contractor prior notice of intent to bill for additional services related to 3.2.6, 3.2.7, and 3.12 before additional services are performed.

§ 3.2.8 If the Contractor has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor his Warranty, Contractor shall promptly notify the architect in writing, providing substantiation for the position. Any necessary changes, including substitutions of materials, shall be accomplished by appropriate Modification.

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§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 Contractor shall be responsible to Owner for acts and omissions of Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work under contract Documents or other arrangements with Contractor.

§ 3.3.5 Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the Work, including those with respect to the safety of persons and property and their protection from damages, injury, or loss. Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by Contractor, its Subcontractor, or anyone directly or indirectly employed by any of them or by anyone for whose acts they may be liable, except for damage or loss attributable solely to acts or omissions of Owner or Architect or by anyone for whose acts either of them may be liable and not attributable to the fault or negligence of Contractor, its Subcontractor, or anyone directly or indirectly employed by them. The foregoing obligations of Contractor are in addition to Contractor's obligations under other provisions hereunder.

§ 3.3.6 Contractor shall be responsible for inspection of portion of Work already performed under the Contract for Construction to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.7 Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions, and that they provide materials on time. Contractor shall coordinate its Work with that of all others on the Project, including of construction utilities.

§ 3.3.8 Contractor shall establish and maintain bench marks and all other grades, lines, and levels necessary for the Work; report errors or inconsistencies to Owner and Architect before commencing Work; and, if applicable, review the placement of the buildings and permanent facilities on the site with Owner and Architect after all lines are staked out and before foundation Work is started. Contractor shall provide access to the Work for Owner, Architect, other persons designated by Owner, and governmental inspectors. Any encroachments made by Contractor or its Subcontractors on adjacent properties caused by construction as revealed by an improvements survey, except for encroachments arising from errors or omissions not reasonably discoverable by Contractor in the Contract Documents, shall be the sole responsibility of Contractor, and Contractor shall correct such encroachments within thirty (30) days of the improvement survey (or as soon thereafter as reasonably possible), at Contractor's sole cost and expense, either by the removal of the encroachment (and subsequent reconstruction on the Project site) or agreement with the adjacent property owner(s) (in form and substance satisfactory to Owner in its sole discretion) allowing the encroachments to remain.

§ 3.3.9 Contractor shall verify at the Work site the measurements indicated on the Drawings and Specifications and shall establish correctly the lines, levels, and positions for the Work and be responsible for their accuracy and proper correlation with control lines, monuments, and data, as established by surveys furnished by Owner. Work shall be erected square, plumb, level, true to line and grade, in the exact plane and to the correct elevation and/or sloped to drain as indicated. To ensure the proper execution of its subsequent Work, Contractor shall measure all Work

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already in place (including but not limited to utilities and grades installed or prepared by others) and shall at once report to Architect and Owner any discrepancy between said Work and the Drawings and Specifications for the Work.

§ 3.3.10 Any discrepancy or omission in the dimensions or elections shown on the Drawings and Specifications or found in previous Work which may prevent accurate layout or construction of the Work, shall immediately be reported by Contractor to Owner and Architect. If Contractor performs, permits, or causes performance of any Work when Contractor knows or reasonably should have known that such discrepancy or omission exists, without first obtaining further instruction from Architect or Owner, Contractor shall bear any and all costs arising therefrom including, without limitation, the costs of correction thereof without increase or adjustment in the Contract Sum. Omissions from the Drawings or Specifications, or the misdescription of details of Work which are reasonably inferable in order to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve contractor from performing such omitted or mis-described details of the Work, and they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications, at no additional cost to Owner.

§ 3.3.11 Contractor shall engage workers who are skilled in performing the Work, and all Work shall be performed with care and skill and in a good workmanlike manner under the full-time supervision of an approved engineer or foreman. Contractor shall be liable for all property damage, including repairs and replacements of the Work and economic losses, which proximately result from the breach of this duty. Contractor shall advise Architect:

1. if a specified product deviates from good construction practices;
2. if following the Specifications will affect any warranties; or
3. any objections which Contractor may have the Specifications.

Nothing contained in Subparagraph 1.1.3 shall alter the responsibilities established in this Subparagraph.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. By making requests for substitutions based on Subparagraph 3.4.2, Contractor:

.1 represents that Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

2. represents that Contractor will provide the same warranty for the substitution that Contractor would for that specified;

3. certifies that the cost data presented is complete and includes all related costs under this Contract except Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and

.4 will coordinate the installation for the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. Contractor shall also be responsible for labor peace on the Project and shall at all times make its best efforts and judgments as an experienced Contractor to adopt and implement policies and practices designed to avoid Work stoppages, slowdowns, disputes, or strikes where reasonably possible and practical under the circumstances and shall at all times maintain Project-wide labor harmony. Except as specifically provided in Subparagraph 8.3 hereof, Contractor shall be liable to Owner for all damages suffered by Owner.

§ 3.4.4 Materials shall conform to manufacturer's standards in effect at the date of execution of the Agreement and shall be installed in strict accordance with manufacturer's directions. Contractor shall, if required by Owner or Architect, furnish satisfactory evidence as to the kind and quality of any materials. All packaged materials shall be

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shipped to the site in the original containers clearly labeled, and delivery slips shall be submitted with bulk materials identifying thereon the source, and warranting quality and compliance with Contract Documents.

§ 3.4.5 When the Contract Documents require the Work, or any part of same, to be above the standards required by applicable laws, ordinances, rules and regulations, and other statutory provisions pertaining to the Work, such Work shall be performed and completed by Contractor in accordance with the Contract Documents.

§ 3.4.6 When the manufacturer's name, patent numbers, underwriter's labels, model numbers or similar identifying marks are required, such markings shall be located as inconspicuously as possible.

§ 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of the best quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects. . Work, materials, or equipment not conforming to these requirements may be considered defective. If required by the Architect or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 ALL WARRANTIES SHALL INCLUDE LABOR AND MATERIALS AND THE MANUFACTURER'S WARRANTY SHALL BE SIGNED BY SUBCONTRACTOR AND COUNTERSIGNED BY CONTRACTOR. ALL WARRANTIES SHALL BE ADDRESSED TO OWNER AND DELIVERED TO ARCHITECT UPON COMPLETION OF THE WORK AND BEFORE OR WITH THE SUBMISSION OF REQUEST FOR FINAL PAYMENT.

§ 3.5.3 Contractor shall issue in writing to Owner as a condition precedent to final payment a "general warranty" reflecting the terms and conditions of this Paragraph 3.5 for all Work under the Contract.

§ 3.5.4 The warranties provided in Paragraph 3.5 shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents, and such warranty or remedy required by law or by the Contract Documents, and such warranty shall be interpreted to require Contractor to replace defective materials and equipment and re-execute defective Work which is disclosed to the Contractor by the Owner within a period of one (1) year after final completion of the entire Work unless a longer time is specifically called for in the specifications. The Contractor shall assign all components, equipment and fixture warranties to the Owner and will deliver all manuals to the Owner at the completion of construction.

§3.5.5 Except when a longer warranty time is specifically called for in the Specification Sections or is otherwise provided by law, the General Warranty shall be for twelve (12) months and shall be in form and content otherwise satisfactory to Owner.

§3.5.6 Warranties shall become effective on a date established by Owner and Architect in accordance with the Contract Documents. This date shall be the Date of Substantial Completion of the entire Work, unless otherwise provided in any Certificate of Partial Substantial Completion approved by the parties.

§3.5.7 If the Architect considers it impractical, because of unsuitable test conditions or some other factors, to execute simultaneous final acceptance of all equipment, portions of properly installed and functioning equipment may be certified by Architect for final acceptance, subject to Owner's approval, when that portion of the system is complete and ready for operation as called for under Subparagraph 9.8.1.

§3.5.8 Contractor shall warrant for a period of twelve (12) months that the building(s) shall be watertight and leak proof at every point and in every area, except where leaks can be attributed to damage to the building(s) by external forces beyond Contractor's control. Contractor shall, immediately upon notification by Owner of water penetration, determine the source of water penetration and, at its own expense, do any Work necessary to make the building(s) watertight. Contractor shall also, at its own expense, repair or replace any other damaged material, finishes, and furnishings, damaged as a result of this water penetration, to return the building(s) to its (their) original condition.

§3.5.9 In addition to the foregoing stipulations, Contractor shall comply with all other warranties referred to in any portions of the Contract Documents or otherwise provided by law or in equity, and where warranties overlap, the more stringent requirement shall govern.

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§3.5.10 If for any reason Contractor cannot warrant any part of the Work using material or construction methods that have been specified, or shown, it shall notify Owner and Architect in writing before the Contract is signed, giving reasons, together with the name of product and data on a substitution it can warrant.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall make application, secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract including, without limitation, street openings, sidewalk, and other obstructions, access over public ways and storage necessary for proper execution of the Contract and which are, legally required at the time bids are received or negotiations concluded.

§3.7.1.1 The Contractor shall also obtain all permits and approvals, and pay all fees and expenses, if any, associated with National Pollutant Discharge System (NPDS) regulations administered by the Environmental Protection Agency and state and local authorities, that require completion of documentation and/or acquisition of all permits for the Project. Contractor's obligations under this paragraph do not require it to perform engineering services during the pre-construction phase to prepare proper drainage for the construction sites. However, any drainage alterations made by Contractor during construction phase which modifies the original site drainage plan and requires the issuance of a permit shall be at Contractor's sole cost.

a. The Owner shall pay directly to the governing authority the cost of all permanent property utility assessments and similar utility connection charges.

b. The Contractor shall be responsible for obtaining and paying for all City and County Building Permits, Inspection Fees and Plan Checking Fees; temporary utility charges, tap charges and water meter charges and any other similar fees assessed by jurisdictional authorities having control over the Project.

c. The Owner shall pay fees payable to the Texas Department of Licensing and Regulations (TDLR) for document review relative to the Elimination of Architectural Barriers Act and the Architect will submit the documents to the TDLR for review and approval.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work (including, without limitation, the installation of any materials or equipment) that it knows or reasonably should have known would be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend to the Owner in writing, an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and

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Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15. No adjustment in the Contract Time or Contract Sum shall be permitted in connection with a concealed or unknown condition that does not differ materially from those conditions disclosed or based on data provided to Contractor and by the Contractor's prior inspections, tests, reviews, and pre-construction services for the Project; or by the Contractors inspections, tests, reviews and pre-construction services that Contractor had the opportunity and obligation to make in connection with the Project but did not do so.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect in writing. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness. If a decision is needed to avoid a delay, Contractor shall notify Architect and Owner in writing sufficiently in advance of needed date to allow reasonable time for selections to be made.

### § 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Superintendent shall be satisfactory to the Owner and shall not be changed except with the consent of the Architect, unless the Superintendent leaves the employment of the Contractor. No increase in Contract Time or Contract Sum shall be allowed in the event the Owner or Architects object to any nominated superintendent. Such approval by the Owner shall not be unreasonably withheld.

§ 3.9.3 **DELETED**.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's review and approval a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised as required herein and at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The schedule shall indicate the proposed starting and completion dates for the various subdivisions of the Work as well as the totality of

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the Work. The schedule shall be updated every thirty (30) days and submitted to Architect with Contractor's Applications for Payment. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time stated in the original schedule. If any schedule submitted sets such a date for Substantial Completion for the Work or any phase of the Work beyond the date(s) of Substantial Completion established in the Contract (as the same may be extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a narrative description of the means and methods that Contractor intends to employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum or the schedule.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's and Owner's approval. The Architect's and Owner's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 The process of approving Contractor's schedules and updates to Contractor's schedule shall not constitute a warranty by the Owner that any non-Contractor milestones or activities will occur as set out on Contractor's schedule. Approval of a Contractor's schedule does not constitute a commitment by the Owner to furnish any Owner-furnished information or material any earlier than Owner would otherwise be obligated to furnish that information or material under the Contract Documents. Failure of the Work to proceed in the sequence scheduled by Contractor shall not alone serve as the basis for a Claim for additional compensation or time. In the event there is interference with the Work, which is beyond its control, Contractor shall attempt to reschedule the Work in a manner that will hold resulting additional time and cost to a minimum. The construction schedule shall be in a detailed format satisfactory to the Owner and the Architect and shall also:

.1 Provide a graphic representation of all activities and events that will occur during performance of the Work;
.2 identify each phase of construction and occupancy; and
.3 set forth dates that are critical in ensuing the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents hereinafter referred to as Milestone Dates.

§ 3.10.5 The Owner shall have the right to reschedule the time of day for the performance of any part of the Work that may interfere with the operation of the Owner's premises or any tenants or invitees thereof. The Contractor shall, upon the Owner's request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any rescheduling of performance of the Work under this Subparagraph 3.10.5 may be grounds for an extension of the Contract Time, if permitted under Subparagraph 8.3.1 and an equitable adjustments in the Contract Sum, if: (1) the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents, (2) such rescheduling is required for the convenience of the Owner and is not attributable to any act of omission of Contractor, and (3) if Owner agrees to the Contract Sum adjustment prior to any rescheduling.

### § 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections (all changes and selections to be approved by Owner and Architect in advance) made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.1 At the Date of Substantial Completion and as a condition precedent to final payment, Contractor shall

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furnish the following documents to Architect for submittal to Owner: Record Drawings showing the field changes and selections (all changes and selections to be approved by Owner and Architect in advance) affecting the general construction, mechanical, electrical, plumbing, and all other Work, and indicating the Work as actually installed. These shall consist of carefully drawn markings on a set of reproducible prints of Architect's Drawings obtained and paid for by Contractor. Contractor shall maintain at the job site one (1) set of Architect's Drawings and indicate thereon each field change as it occurs. The Contractor shall post all Addenda on Construction Documents prior to commencing work on the site.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. If, in the opinion of the Architect, the Shop Drawings, Product Data, Samples and similar submittals are incomplete, indicate an inadequate understanding of the work covered by the submittals, or indicate a lack of study and review by the Contractor prior to submittal to the Architect, the submittals will be returned, unchecked, to the Contractor for correction of these three deficiencies and subsequent re-submittal. Additional service charges as outlined in 3.2.7 may be charged by the Architect in this event.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

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§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional and who shall comply with requirements of Owner regarding qualifications and insurance and, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.12.11 The Contractor shall submit Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents to the Architect at least 30 days prior to the date the Contractor needs the reviewed submittals returned. Where colors are to be selected by the Architect, the Contractor shall submit all Samples in adequate time to allow the Architect to prepare a complete selection schedule. In general, all submittals requiring color selection shall be submitted to the Architect within four weeks of the date of the Contract for construction.

§3.12.12 The Contractor shall submit the number of copies of Shop Drawings, Product Data, Samples and similar submittals which the Contractor and his Subcontractors need for their use plus two additional sets for the Architect and one additional set for each of the Architect's consultants involved with the particular section of work. Where shop drawings are involved, the Contractor shall submit one high quality reproducible transparency and one opaque print of the shop drawing for the Architect plus one additional opaque print for each of the Architect's consultants involved with the particular section of work. The reproducible transparency will be marked by the Architect and/or his consultants and returned to the Contractor for his use, distribution, correction or re-submittal as required. The Architect and his consultants will retain the marked up prints. After final review and correction of the submittal, the Contractor shall send two corrected sets to the Architect, and one to each of the Architect's consultants involved with the particular section of work.

### § 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§3.13.1 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

§3.13.2 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without written consent of the Owner.

§3.13.3 Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed to the fullest extent reasonably possible, in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision on the Contract Documents, Contractor shall use its best efforts to minimize any interference with the occupancy or beneficial use of: (1) any area and buildings adjacent to the site or the Work or (2) the Building in the event of partial occupancy.

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§3.13.4 Without prior approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including without limitation, lavatories, toilets, entrance and parking areas other than those designated by Owner. Without limitation of any other provisions of the Contract Documents, the Contractor shall use its best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time.

## § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

## § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 Prior to the Architect's inspection for Submittal Completion the Contractor shall clean exterior and interior surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces; clean equipment and fixtures to a sanitary condition; replace air filters in mechanical equipment; clean roof, gutters and downspouts; remove obstructions and flush debris from drainage systems; clean site; sweep paved areas and rake clean other surfaces; remove trash and surplus materials from the site.

## § 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

## § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

## § 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold harmless Owner, the Commissioners Court of Owner, all elected officials, employees and agents of Owner of any of the above mentioned parties (the "INDEMNIFIED PARTIES") from and against any and all loss, cost, expense, damage, injury, liability, claim, demand, penalty, or cause of action (including attorneys' fees), directly or indirectly arising out of, resulting from, or related to (in whole or in part), (1) the Work performed hereunder, (2) the Contract, or (3) the act or omission of Contractor, a Subcontractor, or an individual, partnership, joint venture, or corporation (a) directly or indirectly employed by Contractor or a Subcontractor, or (b) for whose acts or omissions Contractor or a Subcontractor may be liable (excluding property damage to the Work itself, covered by Owner's all-risk builder=s risk insurance, subject to Contractor's liability for any deductible amounts thereunder). The obligations of

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Contractor under this indemnification shall apply to all matters except those arising solely from the wanton and willful negligence or the malicious acts or omissions of Owner. Further, the obligations of Contractor under this indemnification shall not extend to the liability of Architect, its agents, or employees, arising our of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or Specifications, (2) the giving of or failure to give directions or instructions by Architect, its agents, or employees, provided such giving or failure to give is the primary cause of the injury or damage, or (3) any matter prohibited by Section 130.002, Texas Civil Practice and Remedies Code. Contractor shall promptly advise Owner in writing of any action, administrative or legal proceeding , or investigation as to which this indemnification may apply, and Contractor, at Contractor's expense, shall assume on behalf of Owner and conduct with due diligence and in good faith the defense thereof with counsel satisfactory to Owner; provided, Owner shall have the right to be represented therein by advisory counsel of its own selection and at its own expense; and provided further, that if the defendants in any such action include both Contractor and Owner and Owner shall have reasonably concluded that they may be legal defenses available to it that are different from, or additional to, or inconsistent with, those available to it that are different from, or additional to, or inconsistent with, those available to Contractor. Owner shall have the right to select separate counsel to participate in the defense of such action on its own behalf at Contractor's expense. In the event of failure by Contractor to fully perform in accordance with this indemnification paragraph. Owner, at its option, and without relieving Contractor of its obligations hereunder, may so perform, but all costs and expenses so incurred by Owner in that event shall be reimbursed by Contractor to Owner, together with interest on the same from the date any such expense was paid by Owner until reimbursed by Contractor, at the rate of interest provided to be paid on judgments, by the law of the jurisdiction to which the interpretation of the Contract is subject. The obligations of Contractor under this Section shall survive the expiration of the Contract and specifically shall survive the limitations contained in Subparagraph 15.1 hereof.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

§ 3.19 SUBSTITUTIONS OF PRODUCTS AND SYSTEMS, "OR EQUAL" BRANDS

§ 3.19.1 The materials, products and the systems covered by these specifications have been selected as a standard because of quality, particular suitability, or record of satisfactory performance. It is not intended to preclude the use of equivalent or better materials, products or systems provided that it meet the requirements of the particular project and have been approved in an addendum as a substitution prior to the submission of bids. If prior written approval in an addendum has not been obtained, it will be assumed that the Bid is based upon the materials, products, and systems described in the Bidding Documents and no substitutions will be permitted, except as provided hereinafter.

§3.19.2 If, after award of contract, the Contractor or one of his Subcontractors or Suppliers determines that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor the Warranty, the Contractor shall promptly notify the Architect, in writing, providing detailed substantiation for his position. Any changes deemed necessary by the Owner and Architect, including substitution of materials and change in Contract Sum, either upward or downward, if any, shall be accompanied by appropriate modification.

§3.20 RECORD DRAWINGS

§3.20.1 At the completion of the project, the Contractor shall submit one complete set of blue lines showing all changes and routing of utilities made during construction, excluding Architect made CAD changes, to the Architect. Drafting shall be legible to the Architect's satisfaction. The Contractor shall pay for the cost of the required recording/drafting. The record set shall be kept up to date on a daily basis and the Architect shall review its status at the project meetings. The Architect shall furnish the Contractor with a blueline set at contract award which shall have all Addenda incorporated. The Owner will pay for the printing of the blueline set. The Architect will incorporate any record information into the construction (CAD) documents and provide the Owner with an electronic copy of the record information on the Construction documents that have all bid and construction changes incorporated. The cost for incorporating the record information into the CD will be paid for by the Owner. The Architect will transmit the electronic CD to the Owner with a copy of the transmittal to the Contractor's construction manager.

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## ARTICLE 4 ARCHITECT

### § 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect whose status under the Contract Documents shall be that of the former Architect.

### § 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate For Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect as a representative of the Owner, will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Architect will be required to make on-site inspections as necessary to keep the Owner informed of the progress of the Work and as necessary to guard the Owner against defects and deficiencies in the Work. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. Architect shall not have control over or charge of and shall not be responsible for safety precautions and programs in connection with the Work. Architect shall be responsible for promptly notifying Contractor of the failure of Contractor, Subcontractors or any other persons performing any of the Work, in failing to use proper construction means, methods, techniques, sequences, procedures, safety precautions and programs, but only to the extent Architect becomes aware of, or should, exercising due professional diligence, be aware of, same. Architect shall also promptly notify Owner in writing of the failure of any of the foregoing parties to carry out the Work in accordance with the Contract Documents.

#### § 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority and responsibility to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the

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Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve or reject, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 **DELETED.**

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site or to otherwise furnish labor, material, or other services with respect to a portion of the Work. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site or to otherwise furnish labor, material, or other services with respect to a

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portion of the Work. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, but no later than 10 days prior to the submittal date for the Contractor's first Application for Payment, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection. Failure of the Contractor to submit the subject names in a timely manner may delay processing of the Contractor's Application for Payment.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.1 All subcontracts shall be in written form and shall specifically provide that Owner is an intended third-party beneficiary of the subcontract.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

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§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

§ 5.5 Contractor shall promptly notify Owner and Architect of any material defaults by any Sub-contractor. Notwithstanding any provision contained in Article 5 to the contrary, it is hereby acknowledged and agreed that Owner has in no way agreed, expressly or implicitly, nor will Owner agree, to allow any Sub-contractor or other materialman or workman employed by Contractor the right to obtain a personal judgment or to create a lien against Owner for the amount due from the Contractor.

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

### § 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 DELETED.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### § 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

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## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be only based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect and is subject to the approval of Owner.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work. Except as permitted in Paragraph 7.3 and 9.7, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

### § 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited, to all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule.

§7.2.3 Contractor shall keep and periodically submit to Owner copies of a log for all Change Orders.

### § 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly. Contractor shall keep and periodically submit to Owner copies of a log for all Construction Change Directives and a log for all requests for information.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

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§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit not to exceed a total maximum of **fifteen** percent **(15%)** for all Work, and further limited to as follows, not to exceed five percent (5%) for Work done by Contractor's employees and **ten** percent **(10%)** of such Work's actual cost to be apportioned between any and all Subcontractors and Sub-subcontractor. "*Actual cost*" does not include any item that could be deemed to be a general conditions cost or overhead, such as, but not limited to, the cost of Contractor and Subcontractor supervisory personnel assigned to the Work, and field office and related expenses. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

### § 7.4 MINOR CHANGES IN THE WORK

The Architect has authority after having obtained Owner's approval to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

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ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.1.1 The Work shall be fully completed within the time limit and/or date stated in the Contract between Owner and Contractor.

§ 8.1.1.2 **Liquidated Damages**: If the Contractor should fail to fully complete the Work within the stated time (subject however to extension of time duly granted in the manner and for the causes specified in the General Conditions), Contractor shall be charged by and shall pay to Owner, as liquidated damages, the sum specified in Article 3.1 of the Modified AIA document A101 – 2007 Edition per calendar day that the Work remains incomplete beyond the time fixed for completion. Contractor hereby agrees that from the nature of the project it would be impracticable and extremely difficult to fix the actual damage that would or will be suffered in the event that Contractor should fail to fully complete the Work by the time limit or date stated and the amount of the liquidated damages are fair and reasonable. The parties agree that the liquidated damages are a reasonable forecast of just compensation for the harm done to Owner that would be caused by Contractor's failure to timely complete the Work. Contractor agrees that the amount of liquidated damages due Owner may be deducted by Owner from any monies that might otherwise be or become payable to Contractor.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation, provided, however, that such extension of Contract time shall be net of any delays caused by or due to the fault or negligence of Contractor or that are otherwise the responsibility of Contractor and shall also be net of any contingency or "float" time allowance included in Contractor's construction schedule. Contractor shall, in the event of any occurrence likely to cause a delay, cooperate in good faith with Architect and Owner to minimize and mitigate the impact of any such occurrence and do all things reasonable under the circumstances to achieve this goal; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. Contactor shall not be entitled to damages of any type for delays caused by Owner, his servant, agents, employees, or separate Contractors hired or retained by Owner. Contractor may receive an extension or extensions for additional time in which to complete the Contract but shall not receive any damages of

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any type for such delays. Changes in the Work, regardless of the extent or number of such Changes or Owner's exercise of any of its remedies of suspension of the Work or requirement of correction or re-execution of any defective Work, shall not under any circumstances be construed as intentional interference with Contractor's performance of the Work.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.1 Commitment of Current Revenues Only. As reflected in paragraph 4.5 of the modified AIA document A 101 – 2007 Edition by and between Owner and Contractor dated of even date herewith, in the event that, during any term hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Contract, then any party may terminate this Contract upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. '271.903.

### § 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Owner and to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work which in the aggregate equals the total Contract Sum, divided so as to facilitate payments to Subcontractors, supported by such evidence of correctness as Architect may direct or as required by Owner. This schedule, when approved by Architect and Owner, shall be used to monitor the progress of the Work and as a basis for Certificates for Payment. All items with entered values will be transferred by Contractor to the "Application and Certificate for Payment," and shall include the latest approved Change Orders and Construction Change Directives. Change Order values and Construction Change Directives values shall be broken down to show the various subcontracts. The Application for Payment shall be on a form as provided by Architect and approved by Owner. Each item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed, and value yet to be completed. All blanks and columns must be filled in, including every percentage complete figure. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### § 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents. Any allowances included in the Application for Payment shall be separately itemized with supporting data attached. The Application for Payment shall be accompanied by a certification by an office of Contractor to the effect that:

> There are no known mechanics', materialman's or laborers' liens or claims, or any other liens or claims, legal or equitable, contractual, statutory, or constitutional, outstanding or known to exist at the date of this Application; all due and payable bills with respect to the Work have been paid to date or are included in the amount requested in the current Application and there is no known basis for the filing of any mechanics', materialman's or laborers' lien or claim, or any other lien or claim, legal or equitable, contractual, statutory, or constitutional, on the Work; and waivers and releases from all Subcontractors, laborers, and material men for Work done and materials furnished have been obtained in such form as to constitute an effective waiver and release of all such liens and claims under the laws of the state within which the Project is located and shall be delivered to Architect together with Contractor's waiver and release of liens and claims at the time of submission of the Application for Payment.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing by the Owner and Surety. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. Under no circumstances will the Owner reimburse the Contractor for down payments, deposits, or other advance payments for materials or equipment.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The vesting of such title shall not impose any obligations on Owner or relieve Contractor of any of its obligations under the Contract, that Contractor shall remain responsible for damage to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents.

### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and on all other information available to Architect including, without limitation, the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified and that the aggregate amount theretofore paid to Contractor plus any applicable retention does not exceed the value of the completed portion of the Work. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, or (3) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

### § 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

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.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a separate contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, or that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.5.4 Notwithstanding any provision contained within this Article, if the Work has not attained Substantial Completion within the contract time, subject to extensions of time allowed under these Conditions, Architect may withhold any further payment to Contractor to the extent necessary to preserve sufficient funds to complete the construction of the Project and to cover liquidated damages assessed against Contractor up to the time of the Application for Payment and to the time it is reasonably anticipated that Substantial Completion will be achieved.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. Owner may refuse to make payment on any Certificate for Payment for any default of the Contract, including, but not limited to, those defaults set forth in Clauses 9.5.1.1 through 9.5.1.7. Owner shall not be deemed in default by reason of withholding payment while any of such defaults remain uncured.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor. .

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 DELETED.

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§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not, for reasons other than a default of the Contract, including, but not limited to, those defaults set forth in Clauses 9.5.1.1 through 9.5.1.7 pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect , then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.7.1 If Owner is entitled to reimbursement or payment from Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if Contractor fails to promptly make any payment due Owner, or if Owner incurs any costs and expenses to cure any default of Contractor or to correct defective Work, Owner shall have an absolute right to offset such amount against the Contract Sum and may, in Owner's sole discretion, elect either to (i) deduct an amount equal to that which Owner is entitled from any payment then or thereafter due Contractor from Owner, or (ii) issue a written notice to Contractor reducing the Contract Sum by an amount equal to that which Owner is entitled.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof (which Owner agrees to accept separately) is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of issuance of the certificate of final payment by Architect unless otherwise provided in the Certificate of Substantial Completion. The Work will not be considered suitable for Substantial Completion review until all Project systems included in the Work are operational as designed and scheduled, all designated or required governmental inspections and certifications have been made and posted, designated instruction of Owner's personnel in the operation of systems has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature, so that Owner and/or Owner's employees and if applicable, the public, could occupy the building on that date and the completing of the Work by Contractor would not materially interfere or hamper Owner's or Owner's employees and if applicable, the public, (or those claiming by, through, or under Owner) from normal County operations. As a further condition of Substantial Completion acceptance, Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or as agreed upon following the Date of Substantial Completion. If Contractor requests a Substantial Completion review, and Architect, after performing the Substantial Completion review, finds that the Project was not ready for the Substantial Completion review, then Contractor shall pay the Architect's fees for any additional Substantial Completion reviews.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if

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any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§9.8.6 In order for the project or a major portion thereof to be considered substantially complete, the following conditions must be met: (1) All inspections by governmental authorities have jurisdiction over the project must have been finalized, any remedial work required by those authorities must have been completed, and Certificates of Occupancy and similar governmental approval forms must have been issued and copies delivered to the Owner and Architect. (2) All work, both interior and exterior, shall have been completed and cleaned except minor items which if completed after occupancy, will not, in the Owner's opinion, cause interference to the Owner's use of the building or any portion thereof. A significantly large number of items to be completed or corrected will preclude the Architect from issuing a Certificate of Substantial Completion. The Owner and Architect will be the sole judge of what constitutes a significantly large number of items.

§9.8.7 After the date of Substantial Completion of the Project, as evidenced by the Certificate of Substantial Completion, the Contractor will be allowed a period of thirty (30) days, unless extended by mutual agreement or provision of the Contract, within which to correct all deficiencies attached to the Certificate of Substantial Completion. Failure of the Contractor to complete such corrections within the stipulated time will be reported to the Contractor's surety. In this report, the Contactor and surety will be informed that, should correction remain incomplete for fifteen (15) days, the Owner may initiate action to complete corrective work out of the remaining Contract funds in accordance with Article 14.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the

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Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
.2 failure of the Work to comply with the requirements of the Contract Documents;
.3 terms of special warranties required by the Contract Documents; or
.4 faulty or defective Work appearing after Substantial Completion.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

### § 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

.1 employees on the Work and other persons who may be affected thereby;
.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor.

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§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 DELETED.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

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§ 10.3.6 DELETED.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

## ARTICLE 11 INSURANCE AND BONDS

### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor and Owner from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 SCHEDULE OF INSURANCE COVERAGES

§ 11.1.5.1 Contractor shall carry and keep in full force for the duration of the project the following Coverage.

| **Coverage** | **Minimum Amounts and Limits** |
|---|---|

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| | |
|---|---|
| Worker's Compensation | Statutory Limits |
| Employer's Liability: | |
| Bodily Injury by Accident | $500,000.00/each accident |
| Bodily Injury by Disease | $500,000.00/each employee |
| Bodily Injury by Disease | $500,000.00/Policy Limit |

**Commercial General Liability**

| | |
|---|---|
| Bodily Injury/Property Damage | $1,000,000.00 per occurrence<br>$2,000,000.00 aggregate |

(Premises Operations, Independent Contractors, Product/Completed Operations, Personal Injury, Contractual Liability, Explosion, Collapse, Underground and Broad Form Property Damage).

| | |
|---|---|
| **Comprehensive Automobile Liability** | $1,000,000.00 Combined Single Limit per Occurrence |

Auto liability insurance shall be on a standard form written to cover all owned, hired, and non-owned automobiles. The policy shall be endorsed to include the Indemnified Parties (paragraph 3.18) as additional insured, contain cross-liability and severability of interest endorsements, and state that this insurance is primary insurance as regards to any other insurance carried by the Indemnified Parties (see paragraph 3.18).

§11.1.5.2 All policies shall contain special endorsements to include:

.1 The Owner as an additional insured (except for Worker's Compensation) and all other parties identified in 3.18 (Indemnified Parties);

.2 Wavier of Subrogation in favor of Owner under the Worker's Compensation and Employer's Liability policies.

.3. A statement that a notice shall be given to Owner by certified mail thirty (30) days prior to cancellation or upon any material changes in coverage.

4. Contain cross-liability and severability of interest endorsements;

5. state that this insurance is primary insurance in regard to any other insurance carried by the an Indemnified Party (see 3.18);

.6 the following coverage:

a. Premises/Operations;
b. Independent Contractors;
c. Completed Operations for a period of two years following the acceptance of Contractor's Work;
d. Comprehensive General Liability Endorsement to include Blanket Contractual Liability (specifically covering, but not limited to, the contractual obligations assumed by Contractor, Broad Form Property Damage, and Personal Injury Liability with employee and contractual exclusions removed;
e. Deletion of exclusions relative to Collapse, Explosion, and Underground Property Damage Hazards;
f. Personal Injury Liability with the contractual exclusions removed;
g. Cross Liability Endorsement.

§11.1.5.6 **Umbrella Excess Liability Insurance**

| | |
|---|---|
| Bodily Injury and | $2,000,000.00 per occurrence |
| Property Damage | $2,000,000.00 aggregate |

This policy shall be written on an umbrella excess basis above, the coverage described in this Article 11.

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The policy shall be endorsed to include the Indemnified Parties (3.18) as additional insureds. The policy shall contain cross-liability and severability of interest endorsements and shall state, as regard the Indemnified Parties that the insurance is primary insurance as to any other insurance carried by any Indemnified Party. The policy shall be endorsed to provide the defense coverage obligation.

§11.1.6 Further, Contractor shall require all Subcontractors to carry similar insurance coverage and limits of liability as required under this Article 11, adjusted to the nature of Subcontractor's operations and submit same to Owner for approval before any Work commences.

§11.1.7 In the event Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, Contractor shall indemnify, defend, and hold harmless the indemnified parties from any and all claims for which the required insurance would have provided coverage.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.2.1 By signing the Contract or providing or causing to be provided a Certificate of Coverage, the Contractor is representing to the Owner that all employees of the Contractor who will provide services on the Project will be covered by workers' compensation coverage for the duration of the Project, that coverage will be based on proper reporting or classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

§11.2.2 Optionally, the Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Architect's vicarious liability for construction operations under the contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Article 11.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Contractor shall obtain a builder's risk "all-risk" or equivalent policy in the amount of the initial Contract Sum (or, if applicable Guaranteed Maximum Price), plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. The policy must also name its subcontractors and the Owner as additional insured, as their respective interests may appear. Coverage shall include material stored on-site and in transit. Such insurance will be with a company or companies lawfully authorized to do business in Texas. The policy must have the following endorsement: "This insurance shall be specific as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises."

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.1.1 For any claim made against Contractor's Builder's Risk Insurance, the deductible shall not exceed $2,500.00 for a Contract Sum of less than $4 million. For a Contract Sum of $4 million or more, the deductible shall not exceed $5,000.00.

§11.3.1.1.2 The Contractor waives all rights against (1) Owner, the Subcontractors, Sub-subcontractors, agents, and employees, and (2) the Architect, Architect's consultants, separate contractors, if any, and any of their Subcontractors, Sub-subcontractors, agents, and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this paragraph or other property insurance applicable to the

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Work, except such rights as Contractor has to proceeds of such insurance held by the Contractor as a fiduciary. The Contractor, as appropriate, shall require of any separate contractors, Subcontractors, Sub-subcontractors, agents, and employees of any of them by appropriate written agreements, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§11.3.1.1.3 The Contractor as fiduciary shall have power to adjust and settle a loss with insurers. The Contractor shall pay all Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements shall require Subcontractors to make payment to their Sub-subcontractors in similar manner. If required in writing by a party in interest, the Contractor as fiduciary shall, upon occurrence of insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor under the insurance proceeds.

§ 11.3.1.2 DELETED.

§ 11.3.1.3 DELETED.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use shall not affect the validity or coverage of property insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE
DELETED.

§ 11.3.3 LOSS OF USE INSURANCE
DELETED.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 DELETED.

§ 11.3.6 DELETED.

§ 11.3.7 WAIVERS OF SUBROGATION
The Contractor waives all rights against (1) Owner, the Subcontractors, Sub-subcontractors, agents, and employees, and (2) the Architect, Architect's consultants, separate contractors, if any, and any of their Subcontractors, Sub-subcontractors, agents, and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to Article 11 or other property insurance applicable to the Work, except such rights as Contractor has to proceeds of such insurance held by the Contractor as a fiduciary. The Contractor, as appropriate, shall require of any separate contractors, Subcontractors, Sub-subcontractors, agents, and employees of any of them by appropriate written agreements, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of

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insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 DELETED.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum, as security for the faithful performance of the Contract and also a one hundred percent (100%) Payment Bond, as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with the Contract. The Performance Bond and the Payment Bond may be in one or in separate instruments in accordance with local law. Surety companies must be authorized to write surety bonds in Texas and any such surety bond must comply with the requirements of Subchapter A of Chapter 3503 of the Texas Insurance Code

§11.4.1.1 The Contractor shall deliver the required Bonds to the Owner not later than the date of the preconstruction meeting. All Bonds will be reviewed by the Architect for compliance with the Contract Documents prior to the execution of the Contract. In the event that Architect has any questions concerning the sufficiency of the bonds, Architect shall refer the bonds to Owner or Owner=s representative for decision.

§11.4.1.2 All bonds shall be originals. The Contractor shall require the attorney-in-fact who executes the required Bonds on behalf of the Surety to affix thereto a certified and current copy of the power-of-attorney. The name, address, and telephone number of a contact person for the Bonding Company shall be provided.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.4.3 The Bonds shall be provided to comply with the terms and provisions of Chapter 2253 of the Texas Government Code. Bonds shall be signed by an agent resident in the State of Texas and date of bond shall be on or after the date of execution of the Contract but prior to the date of the notice to proceed. If at any time during the continuance of the Contract, the surety of the Contractor's bonds becomes insufficient, the Owner shall have the right to require additional and sufficient sureties which the Contractor shall furnish to the satisfaction of the Owner within ten (10) days after notice to do so. In default thereof, the Contractor may be suspended, and all payment or money due to the Contractor withheld until sufficient bonds are provided by Contractor.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time or Contract Sum.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect as incomplete, defective, or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

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§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the entire Work (unless otherwise provided in any Certificate of Partial Substantial Completion approved by the parties), or within such longer period of time as may be prescribed by law or in equity, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be defective or otherwise not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. This corrective period shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work. Corrective Work shall be warranted to be free from defects for a period equal to the longer of six (6) months after the completion of the corrective Work or one (1) year after the Date of Substantial Completion (subject to extension as previously described) or such longer period of time as may be prescribed by law or in equity, or expiration of the term of any applicable special warranty, if applicable, required by the Contract Documents. Any defect in such Work shall be corrected again by Contractor promptly upon notice of the defect from Owner. This obligation under this Subparagraph 12.2.2.1 shall survive acceptance of the Work under the Contract and termination of the Contract by the Owner. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§12.2.2.4 Just before the termination of the various guarantee periods, Contractor shall accompany Owner's agent and Architect on an inspection tour of the building and shall note any defects and shall start remedying these defects within ten (10) days of the inspection tour and shall prosecute the Work without interruption until accepted by Owner and Architect, even though such prosecution should extend beyond the limit of the guarantee period.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused in whole or in part by the Contractor's correction or removal of Work that is defective or otherwise not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents or under law or in equity. Establishment of the period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is defective or otherwise not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located.

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§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice or if delivered by facsimile to the offices of the person or corporation for which it was intended. Facsimiles received after 5:00 p.m. on a business day, or on a weekend or legal holiday on which the recipient's offices are closed, notice shall be deemed to have been duly served on the next business day.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law or in equity or by any other agreement, and any such rights and remedies shall survive the acceptance of the Work and/or any termination of the Contract Documents.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Architect, Owner and Contractor shall be afforded a reasonable opportunity to attend, observe, and witness all inspections and tests of the Work. Architect or Owner may at any time request and receive from Contractor satisfactory evidence that materials, supplies, or equipment are in conformance with the Contract Documents. The conduct of any inspection or test and the receipt of any approval shall not operate to relieve Contractor from its obligations under the Contract Documents unless specifically so stated by Owner in writing.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, or reveal faulty or otherwise defective Work, or if the necessity of any such testing, inspection, or approval procedures arises out of the fault, neglect, or omission of Contractor, Contractor shall bear all costs of such testing, inspection, and approval procedures and all other costs made necessary by Contractor's failures, including, without limitation, those costs of repeated and additional procedures and compensation for Architect's services and expenses of Owner=s personnel and consultant fees and expenses. Such costs shall be paid by Contractor within ten (10) days of receipt of invoice from Owner with supporting data attached.

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§ 13.5.4 Required certificates of testing, inspection or approval shall, be secured by the Contractor and delivered to Owner, unless such testing or inspection services are arranged by Owner.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

An overdue payment bears interest at the rate of zero percent (0%) each month, or at the legal rate established by the Texas Government Code, currently in Section 2251.025. Any such payment shall be deemed overdue on the thirty-first (31st) day after Owner receives an invoice from Contractor.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract within the time period specified by applicable law.

§ 13.8 EQUAL OPPORTUNITY

§ 13.8.1 The Contractor shall maintain policies of employment as follows: "The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, promotion, demotion, or transfer; recruitment, or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants, notices setting forth the nondiscrimination policies."

§13.8.1.1 The Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf; state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.

§13.9 CERTIFICATION OF ASBESTOS-FREE PROJECT

§13.9.1 Contractor shall submit to the Architect a letter addressed to the Owner certifying that all materials used in the construction of this Project contain less than 0.10 by weight of asbestos and for which it can be demonstrated that, under reasonably foreseeable job site conditions, will not release asbestos fibers in excess of 0.1 fibers per cubic centimeter. Certification letters shall be dated, shall reference this specific Project, and shall be signed by not less than two (2) officers of the construction company.

§13.9.2 Certification shall further state that should asbestos fibers be found at this Project in concentrations greater than 0.1 fibers per cubic centimeter, that Contractor shall be responsible for determining which materials contain asbestos fibers and shall take corrective action to remove those materials from the Project at no additional cost to the Owner.

§13.9.3 Final payment shall not be made until this letter of certification has been received.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

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§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed in accordance with the Contract Documents. .

§ 14.1.4 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Subparagraphs 14.1.1 and 14.1.2.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 refuses or fails to supply enough properly skilled workers or proper materials and equipment;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;

.4 disregards the instructions of Architect or Owner (when such instructions are based on the requirements of the Contract Documents);

.5 is adjudged bankrupt or insolvent, or makes a general assignment for the benefit of Contractor's creditors, or a trustee or receiver is appointed for Contractor or for any of its property, or files a petition to take advantage of any debtor's act, or to reorganize under bankruptcy or similar law; or

.6 otherwise does not fully comply with the Contract Documents**.**

§ 14.2.2 When any of the above reasons exist, the Owner, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 To the extent the costs of completing Work, including compensation for additional professional services and expenses, exceed those costs that would have been payable to Contractor to complete the Work except for Contractor's default, Contractor will pay the difference to Owner, and this obligation for payment shall survive termination of the Contract. Such costs incurred by Owner will be determined by Owner and confirmed by Architect.

§14.2.5 In addition to Owner's right to remove Contractor from any part of Work pursuant to the Contract Documents, Owner may, at any time, at will and without cause, terminate any part of Work or any subcontract or all remaining Work for any reason whatsoever by giving seven (7) days' prior written notice to Contractor specifying the part of Work or subcontract to be terminated and the effective date of termination. Contractor shall continue to prosecute the part of Work not terminated. If any part of Work or subcontract is so terminated, Contractor shall be entitled to payment for Work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for costs directly related to Work thereafter performed by Contractor in terminating such Work or subcontract including reasonable demobilization and cancellation charges provided said Work is authorized in advance by Architect and Owner. No payment shall be made by Owner, however, to the extent that such Work or subcontract is, was, or could have been terminated under the Contract Documents or an equitable adjustment is made or denied under another provision of the Contract. In case of such termination, Owner will issue a Construction Change Directive or authorize a Change Order making any required

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adjustment to the Date of Substantial Completion and/or the Contract Sum. For the remainder of the Work, the Contract Documents shall remain in full force and effect.

§14.2.6 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Subparagraph 14.2.5.

§14.2.7 Upon a determination by a court of competent jurisdiction that termination of Contractor pursuant to Subparagraph 14.2.1 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Subparagraph 14.2.5 and Contractor's remedy for wrongful termination shall be limited to the recovery of the payments permitted for termination for convenience as set forth in Subparagraph 14.2.5

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right adjustment or interpretation of the Contract Terms, payment of money, extension of time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. Claims must be by written notice.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Said written notice of claims shall state specifically the reason for the claim, the date or dates of the cause or causes of the claim, and if any extension of time is requested, the number of days of extension requested.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make

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payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by Owner and Architect. No such claim shall be of value unless so made. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. Extensions of time may be requested for any month of construction for days lost due to adverse weather in excess of the normally expected lost time; provided, however, if Architect determines that the seasonal average of adverse weather days during construction is less than would be normally expected, no Change Order shall be issued and the request for extension of time shall be denied.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Contractor shall not be entitled to claims for additional time and/or increase in Contract Price due to a problem or non-performance of a subcontractor.

**§ 15.1.7** In the event the Contractor fails to achieve substantial completion by the date indicated in the Contract, and extended by approved Change Order, the Owner shall be entitled to liquidated damages in the amount as stated in Subparagraph 3.1.1 of the modified AIA document A 101 – 2007 Edition by and between Owner and Contractor dated of even date herewith per day until the Work is substantially completed. It is expressly understood that the said sum per day is agreed upon as a fair estimate of the pecuniary damages, which will be sustained by Owner in the event that the Work is not completed within the agreed time, or within the legally extended time, if any. Said sum shall be considered as liquidated damages only, the exact ascertainment of which is difficult and in no sense be considered a penalty.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim in whole or in part, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

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§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to litigation.

§ 15.2.6 DELETED.

§ 15.2.6.1 DELETED.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 DELETED.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract shall be subject to mediation as a condition precedent to litigation.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation.

§ 15.3.3 The parties shall share the mediator's fee. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

The parties expressly agree that disputes or claims arising under the Contract Documents shall not be subject to arbitration unless mutually agreed by the parties in writing.

§ 15.4.1 DELETED..

§ 15.4.1.1 DELETED.

§ 15.4.2 DELETED.

§ 15.4.3 DELETED.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 DELETED.

§ 15.4.4.2 DELETED.

§ 15.4.4.3 DELETED.

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**SECTION 00100**

**INSTRUCTIONS TO BIDDERS**

**Project:** 2014-067-04-02-MSS Hidalgo County Pct. 4 – Construction of Linn-San Manuel Emergency Services Facility

**Architects:** Mata-Garcia Architects LLP
1314 Ivy Avenue
McAllen, Texas 78501
Tel: 956.631.1945 Fax: 956.631.1968

**1. Receipt and Opening of Bids:**
The Owner invites bids on the form indicated in Section 00300 for the referenced projects. (Copies of this form may be made for bidding purposes.)

The Owner may consider informal any bid not prepared and submitted in accordance with provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the scheduled time or the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within Ninety (90) days after the actual date of the opening thereof.

2. **Preparation of Bid:**
Each bid must be submitted on the prescribed form or a copy thereof. All blank spaces for bid prices must be filled in, in ink or type written, in both words and figures. Bid forms may be copied, do not use sample forms bound in the specifications. Each bid must be submitted in a sealed envelope addressed to the Owner and designated "Proposal" bearing on the outside the name of the proposer, his address, the name of the project for which the proposal is submitted and the date and hour of the opening. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to the owner at the designated location for the opening of bids. (Refer to Request for Bids page provided by Hidalgo County Purchasing Department.)

3. **Method of Bidding:**
The Owner invites the following bid(s):

**BASE BID:** All work for the building & all related work as indicated by the Contract Documents.

**4. Qualifications of Bidder:**
The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the owner all such information and data for this purpose as the Owner may request. The owner reserves the right to reject a bid if the evidence submitted by, or investigation of such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein.

**5. Liquidated Damages for Failure to Enter into Contract:**
The successful bidder, upon his failure or refusal to execute and deliver the contract, insurance and bonds required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

**6. Time of Completion:**

Time of completion of the contract is of importance to the Owner and may be considered in the award of the contract. Payments on the Contract will be made as provided by the Contractor. No payments will be made on the Contract after 30 days prior to the completion date set by the Contractor, until final completion and acceptance by the Architect and Owner. The Contractor shall include in his bid proposal a time to complete the base proposal (stated in calendar days) that includes his best anticipation of the number of working days that construction may be unable to take place due to the inclement weather and muddy ground. This anticipated number of lost working days shall be included on the bid proposal form in the space designated for the total number of calendar days required to complete the base proposal. Extensions to the Completion Date will be granted only if, in the opinion of the Architect, climatology conditions that impede the progress of construction significantly exceed average conditions will be the bulletin "Local Climatology Data", published by the Department of Commerce.

7. **Conditions of Work:**

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve the successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract.

**8. Addenda and Interpretations:**

No interpretations of the meaning of the plans, specifications or other pre-bid documents will be to any bidder orally. Every request for such interpretations should be in writing addressed to the Architect, and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instruction will be mailed to all prospective bidders no later than three days prior to the date fixed for the openings of bids. All addenda so issued shall become part of the contract documents.

**9. Laws and Regulations:**

The bidder's attention is directed to the fact that all applicable Federal Laws, State Laws, Municipal Ordinance, and the rules and regulations of all authorities have jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

**10. Obligation of Bidder:**

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve the bidder from any obligation in aspect of this bid.

**11. Failure of Timely Order:**

The contractor is responsible for assuring the timely order of all materials specified. If a specified material, or color of material cannot be delivered by the contractor completion date, due to failure to order the material in a timely manner, the contractor will be responsible for supplying and equal or better material. The architect will be the sole determinant of the approved substitute material. The contractor will also be charged an amount equal or 5% of the value of the specified material. This amount will be credited to the owner through a change order to the contract. The word "material", used in this section, includes all terms specified in the specifications or shown on the drawings.

12. **Sub-Bid Time Limits:**

So that Contractors may have adequate opportunity to evaluate sub-bids, it is recommended that the "Time Limit Plan" be honored; sub and material bid must have been submitted to Contractors four (4) hours prior to the time set for bid opening.

**13. Contractor's Limitation of Liability:**

The bidder affirms that he and his sub-contractors are skilled and experienced in the use and interpretation of plans, specifications, addenda and related bid documents and, that he has carefully reviewed the plans, specifications, addenda and related bid documents for this project and has found them to be free of conflicts and/or ambiguities and sufficient for bidding and construction purposes. Further, he has carefully examined the soil reports and the site of the work, through his own rewrite the difficulties likely to encounter; the other items and/or conditions which may affect the satisfactory performance of the work. He has based his bid solely in these documents-and personal observations-and has not relied in any way on any explanation or interpretation-oral or written-form any source other than those written and issued by the Architect/Engineer.

**14. Liquidated Damages on Contract for Construction:**

Liquidated damages, in the amount of $500.00 per calendar day, will be assessed for each day the general contractor exceeds the contract days for construction set by the general contractor in his bid or the contract days for construction set in the contract with the County of Hidalgo.

**15. Pre-Proposal Conference:**

A Pre-Bid Conference will be held prior to the bid date. (Monday, March 24, 2014 at 3:00pm, at Hidalgo County Purchasing Department Conference Room, 2812 South Business Highway, Edinburg, Texas 78539.) Attendance by representatives of the building contractors is highly desirable. Sub-Contractors who expect to be associated with the project are invited. Representative of the Architects, Engineers and Architect's Consultants will review the plans, specifications, details, materials, demolition, alterations and requirements of the work. Specific questions will be accepted, but not necessarily answered, at the conference. An addendum indicating any change in the Contract Documents will be issued, if necessary, subsequent to this meeting.

All information in this section is to be cross-referenced with the County Of Hidalgo front-end documents.

**END OF SECTION**

## Section 00200

## Information Available to Bidders

### PART 1 GENERAL

### 1.01 INVESTIGATION

A. Soil and sub-surface investigations were conducted at the site, the results of which are to be found in the report issued by L&G Engineering Laboratory, L.L.C., 2100 West Expressway 83, Mercedes, Texas 78570; Tel. 956.565.0760, Fax. 956.565.6746
B. The information obtained is included herein for the convenience of the contractor.
C. Bidders are urged to examine soils investigation data and to make their own investigation of the site before bidding.

### 1.02 INTERPRETATION

A. Soil investigation data is provided only for information and the convenience of the bidders. The County of Hidalgo, Precinct No. 4 and the architect/engineers disclaim any responsibility for the accuracy, true location, and the extent of the Soils Investigation that has been prepared by others. They further claim no responsibility for interpretation of that data by bidders, as in projecting soil-bearing values, rock profiles, soil stability, and the presence, level and extent of underground water.
B. Soil investigation data is not a part of the contract documents.

Logs of borings to follow.

End of Section

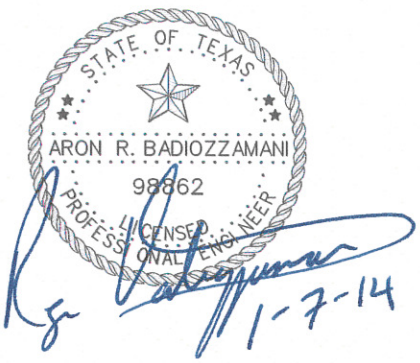
L&G Engineering Laboratory
Construction Material Testing
Geotechnical Engineering

# GEOTECHNICAL INVESTIGATION
# FOR THE
# EMERGENCY SERVICES FACILITY – SAN MANUEL PROJECT
# HIDALGO COUNTY, TEXAS

**Prepared For:**
**Hidalgo County Pct. No. 4**

**Prepared By:**
**L&G Engineering Laboratory, L.L.C.**
**Mercedes, Texas 78570**
**[Texas Registered Engineering Firm F-6633]**

**L&G Project No. GL13032**
**January 7, 2014**

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# INTRODUCTION

**L&G Engineering Laboratory, L.L.C. (L&G)** was contracted by **Hidalgo County Precinct No 4. (HC Pct. 4)** to perform a subsurface geotechnical investigation for the proposed San Manuel, Texas - Emergency Services Facility. This report addresses several foundation recommendations, parameters for slab foundation design criteria based on the Post Tension Institute (3rd Edition) and Wire Reinforcement Institute specifications, as well as recommendations for maximum allowable bearing capacity of shallow foundations. Also included in this report are pavement recommendations, boring logs, and several figures addressing the potential vertical rise and existing geology of the proposed construction site.

# GENERAL PROJECT OVERVIEW

## Project Description

**L&G** is pleased to submit this document presenting our findings as the result of a subsurface geotechnical exploration performed at the request of **HC Pct. 4**. The project site is located within San Manuel, Texas, at the south-east intersection of US 281 and SH 186. It is our understanding that the project involves the construction of a concrete slab on grade (only illustrated on the layout - unknown size and details) and a parking lot area (typical flexible pavement). A preliminary general site plan sheet / project layout and minimal structure detail sheet for the proposed service facility was provided by the Client (**HC Pct. 4**) and are included in Appendix D. No grading plans or structural loads for the building/structures were provided; thus all foundation and site improvement recommendations as provided in this report are based on the geotechnical properties of the soils and generalized assumptions as noted.

## Scope and Limitations of Investigation

This report has been prepared in general accordance with accepted geotechnical engineering practices for the subject project site and the anticipated construction. No specific warranty program or other special standards, except acceptable industry standards for the general South Texas area, were followed during the course of this investigation and analysis. This geotechnical report is intended for use by **HC Pct. 4**, and any direct representatives or affiliates. This geotechnical report may not contain sufficient information for purposes of other parties, or other uses in determining construction means and methods.

The strata, shown on the boring logs (included in Appendix B), represent the subsurface conditions at the boring locations at the time of our investigation. These strata designate approximate boundaries between subsurface materials; however, their actual transition may be gradual or may occur at varying depths. Variations may occur due to unexpected deposits of soft clays, silts or other undesirable soil material not detected through our investigation. It should be noted that the exploratory borings were performed within the limits of the proposed project as approved and agreed upon by all previously noted parties prior to the commencement of our field operations.

The benchmarks of this geotechnical study are to:

1. explore the general existing subsurface conditions at the site
2. evaluate the relevant engineering properties of the subsurface materials
3. provide the potential vertical rise and recommendations to minimize shrink/swell
4. provide the maximum allowable bearing capacity of in-situ soils for shallow foundations
5. provide design parameters for several foundation design methods including WRI and PTI
6. provide recommendations for foundation construction
7. provide recommendations for pavement thicknesses and materials

The scope of this geotechnical engineering study does not include an environmental assessment of the air, soil, rock or water conditions on or adjacent to the site. No environmental opinions are presented in this report. If environmental clearances are needed prior to construction, please contact our offices for assistance in this matter.

## EXISTING SURFACE AND SUB-SURFACE CONDITIONS

### Site Location / Description

The project site is located within the city limits of San Manuel, Texas, at the south-east corner of the intersection of US 281 and SH 186. The proposed emergency services facility is to be placed adjacent to the west side of an existing parking lot. Access to the facility from SH 186 is proposed to be provided by two paved roads with parking on the east and south sides of the building (as shown in the provided layout in Appendix D and on the figures in Appendix A). The boring locations were drilled as close as possible to the locations specified by the Client as shown on Figure 2 in Appendix A. No surveyor was contracted to determine the exact coordinates for the borings, as this was not a part of the scope of work for the project; however, field handheld GPS coordinates were retrieved and are noted on the boring logs in Appendix B. The property had minimal to medium vegetation at the time of drilling including short to medium grasses and light to medium brush.

### Geology

The Geologic Atlas of Texas, McAllen-Brownsville Sheet, dated 1976, indicates that the subject site is located primarily within the *Goliad Formation* of the *Tertiary epoch (Pliocene period)* consisting of "clay, sand, sandstone, marl, caliche, limestone, and conglomerate; clay, commonly light shades of pink and green, calcareous concretions; sand and sandstone, medium to very coarse grained, in part crossbedded, mostly quartz, some black and red chert; conglomerate, black chert and dark siliceous granules and pebbles in calcareous (caliche) matrix; sandstone and conglomerate locally well bedded; marl and limestone poorly bedded or massive; Tertiary vertebrate and reworked Cretaceous invertebrate fossils fairly common; thickness up to 600 feet" (See Figure 5 in Appendix A for Geologic Atlas of Texas Map).

### Soil Survey Description

According to the Soil Survey of Hidalgo County, Texas, published by the United States Department of Agriculture, the proposed site is located within the Hebbronville Sandy Loam (0

to 1 % slopes) soil map unit (#22) and the Delfina Loamy Fine Sand (0 to 3% slopes) soil map unit (#9) (see Figure 3 in Appendix A for USDA Soils Map).

Hebbronville Sandy Loam (0 to 1 % slopes) soil map unit (#22) is a deep, nearly level formation on convex uplands. The soil is well drained, with moderately rapid permeability. The available water capacity is moderate (about 7.9 inches), and the soil is classified as non-saline (0.0 to 2.0 mmhos/cm). The maximum content of calcium carbonate in the soil is 5 percent. The typical soil profile for this map unit consists of 0 to 17 inches: brown sandy loam, 17 to 39 inches: brown fine sandy loam, and 39 to 58 inches: yellowish brown fine sandy loam, 58 to 65 inches: light yellowish brown fine sandy loam. This soil classification is calcareous to 39 inches.

Delfina Loamy Fine Sand (0 to 3% slopes) soil map unit (#9) is a deep, gently sloping formation on convex uplands. The soil is moderately well drained, with moderately slow permeability. The available water capacity is medium (about 7.9 inches), and the soil is classified as non-saline to very slightly saline (0.0 to 4.0 mmhos/cm). The maximum content of calcium carbonate in the soil is 15 percent. The typical soil profile for this map unit consists of 0 to 16 inches: brown loamy fine sand, 16 to 25 inches: dark brown sandy clay loam with yellowish red and grayish brown mottles, 25 to 37 inches: brown sandy clay loam with yellowish red mottles, 37 to 49 inches: brown sandy clay loam with grayish brown mottles, and 49 to 72 inches: light brown sandy clay loam. This soil classification is non-calcareous to 49 inches.

### Rainfall

The mean annual precipitation for this area of Hidalgo County is approximately 20-24 inches, as reported by the U.S. Department of Agriculture Soil Conservation Service. Our geotechnical investigation, performed on December 10, 2013 was conducted during a moderate drought condition (D1, as noted by the National Weather Service and U.S. Drought Monitor). The National Oceanic and Atmospheric Administration (NOAA) reports for the subject date indicated that no significant rainfall observations (at least one inch) occurred prior to or during our exploration that could have significant effects on any groundwater levels or moisture content of surface soils.

## SITE INVESTIGATION

### Soil Borings and Laboratory Tests

Subsurface conditions at the site were evaluated through two (2) structural borings (designated as B-#) drilled to a depth of twenty-five (25) feet below natural ground elevation, and two (2) pavement borings (designated as P-#) drilled to a depth of ten (10) feet below natural ground at the locations shown on Figure 2 of Appendix A The soil borings were drilled and sampled in general accordance with American Society of Testing Materials Procedures (ASTM) D1452, D1586, and D1587 using a truck mounted drilling rig (Simco 2800 HS (HT)) and solid stem augers.

As part of the sampling procedures, split barrel (spoon) and Standard Penetration Tests (SPT) were performed and recorded. Standard Penetration Test results are noted on the boring logs as blows per foot or twelve (12) inch increment. The sampler was advanced through three (3) consecutive six inch increments; however, the first six inch increment is considered the seating

drive, which eliminates the effect of cuttings or disturbances on the test result. The sum of the blows for the last two six (6) inch increments is considered the "standard penetration resistance value" or "field N-value". Where hard or very dense materials were encountered, the SPT was terminated and noted on the boring log when one of the following situations occurred:

1. *a total of 50 blows were applied on one six inch increment*
2. *a total of 100 blows were applied during the test*
3. *no observation of advancement of the sampler was detected during the application of ten (10) consecutive blows from the hammer*

Representative portions of the split barrel samples were identified, packaged, sealed in containers to reduce moisture loss, and transported to our laboratory for subsequent testing. In the laboratory, each sample was evaluated and visually classified by a member of our geotechnical engineering staff. The properties of each stratum were evaluated by a series of laboratory index tests. A summary of the laboratory data and their corresponding depths are presented on the boring logs. Samples will be retained in our laboratory for 30 days after submittal of this report. Other arrangements may be provided at the request of the Client to hold the samples through the construction process.

## Subsurface Stratigraphy

Based on the results of the field and laboratory sample analyses, the subsurface stratigraphy at the project location can be characterized as follows (Tables 1A-1B):

| Structural Borings (B-01 through B-02) | | | |
|---|---|---|---|
| **Description** | ***Approximate Depth Range (ft.)** | **Material Type** | **Consistency / Density** |
| Stratum I | 0 to 5 | Silty Clayey Sand, Clayey Sand[1] | Very Loose to Medium Dense |
| Stratum II | 5 to 25 | Clayey Sand[2] | Medium Dense to Very Dense |
| 1. This stratum contained a mixture of dark brown clayey sand (SC) and silty clayey sand (SC-SM) with low to moderately low plasticity indices (ranging from 6 to 12). These soils contained approximately 31 to 36% fine soil particle contents (clays & silts). SPT N-values ranged from 9 to 14 blows per foot (outlier noted in B-02 showing 3 blows per foot). Samples were noted as dry. | | | |
| 2. This stratum contained light brown clayey sand (SC) with moderately low to moderate plasticity indices (ranging from 9 to 23). These soils contained approximately 27 to 47% fine soil particle contents (clays & silts). SPT N-values ranged from 12 blows per foot to 50 blows per three inches (ranging from 12 to2 4 blows per foot in the upper 8 feet and 43blows per foot to 50 blows per three inches below that). Samples were noted as dry. | | | |

**Table 1A – Existing Soil Strata & Description (Structural Borings B-01 through B-02)**

**all depths are referenced from existing natural ground*

| Pavement Borings (P-01 through P-02) | | | |
|---|---|---|---|
| **Description** | ***Approximate Depth Range (ft.)** | **Material Type** | **Consistency / Density** |
| Stratum I | 0 to 6 | Clayey Sand, Silty Clayey Sand [1] | Very Loose |
| Stratum II | 6 to 10 | Silty Clayey Sand, Silty Sand[2] | Very Loose to Medium Dense |
| 1. This stratum contained dark brown clayey sand (SC) with light brown sections (noted at P-02) and with low plasticity indices (8). These soils contained approximately 30 to 34% fine soil particle contents (clays & silts). Soil samples showed evidence of small roots. SPT N-values ranged from 4 to 6 blows per foot. Samples were noted as dry. | | | |
| 2. This stratum contained a mixture of light brown to light tannish brown clayey sand (SC) and sandy lean clay (CL) with moderately low to moderate plasticity indices (ranging from 15 to 24). These soils contained approximately 35 to 50% fine soil particle contents (clays & silts). SPT N-values ranged from 5 to 8 blows per foot. Samples were noted as dry. | | | |

**Table 1B – Existing Soil Strata & Description (Pavement Borings P-01 through P-02)**
**all depths are referenced from existing natural ground*

It should be noted, the Soil Strata and Description illustrated in Tables 1A-1B, are typical summarized representation of the site stratigraphy. The lines designating the interfaces between strata on the boring logs represent approximate boundaries. Transitions between strata may be gradual and may occur at varying depths.

### Water Strikes

The solid auger and mud rotary drilling techniques were used to complete soil borings in accordance with ASTM procedure D1452. Water strikes were not encountered during the drilling operations at any boring location.

It should be noted that fluctuations in groundwater levels are influenced by variations in rainfall and surface water run-off from season to season. The construction process itself may also cause variations in the groundwater level. If the subsurface water elevation is critical to the construction process the Contractor should check the subsurface water conditions just prior to construction excavation using piezometer wells.

## GEOTECHNICAL BORING ANALYSIS

### Moisture Content

The moisture content of a soil is defined as the ratio of the weight of the water in the sample to the dry weight of the soil sample. The moisture contents for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D2216. The results varied from two (2) percent to eight (8) percent. The variance in percentages within a given exploratory boring can be attributed to a multitude of issues including, range in depth, distance between samples, location of groundwater table and seasonal moisture zone. The variation could also be caused by differences in soil classifications, as some soils such as loose gravels and sands are made up of larger particles and thus exhibit more voids as a soil structure (higher capability to hold water than fine grained soils). Finer grained denser soils, though, due

to high impermeability, may also exhibit high moisture contents in certain instances due to the slower movement of water through the soil structure. All samples in this geotechnical exploration exhibited dry field moisture conditions. A list of all the moisture contents by corresponding depth can be found on the boring logs.

### Plasticity Index

The Plasticity Index (PI) is defined as the difference between the liquid limit and the plastic limit of a soil. These limits are commonly referred to as the Atterberg limits, which describe the consistency of soils with respect to their varying moisture contents. The liquid limit is defined as the moisture content at which soil begins to transition from a plastic to a liquid state and begins to behave as a liquid material by beginning to flow. The plastic limit refers to the water content of a soil at the point of transition from a semisolid to a plastic state where soil starts to exhibit plastic behavior. A soils behavior can be divided into four basic states: liquid, plastic, semisolid and solid. The plasticity index shows the range in which a soil acts in a plastic state. Experience has shown that the more plastic a soil is the more expansive and compressive it will act. The plasticity indices for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D4318. PI values for the borings performed for this report range from eight (8) (moderately low plasticity clayey sands) to 24 (moderate plasticity clayey sands and sandy clays).

### Particle Size Analysis (Determination of Fines Content)

The standard grain size analysis is used to determine the relative proportions of different grain sizes as they are distributed along a range of different sized sieves. The minus 200 sieve analysis is used commonly as a tool for soil classification and identification using the Unified Soils Classification System. Results for this test are reported as a percentage of soil passing the No. 200 sieve, which has openings 0.075mm wide. This test is also used to determine the suitability of soil for construction purposes and to estimate probable seepage through soils. Generally a % -200 greater than 50% indicates a non-granular cohesive soil with large amounts of fines in the soil composition. The particle size analyses for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D1140. The % -200 values for the samples collected range from 27% to 61%.

## FOUNDATION RECOMMENDATIONS

### Proposed Project Foundation System Information

The proposed facility, as previously noted, will be constructed throughout the proposed project site. At the time this report was written, the Client had specified general slab on grade construction with potential shallow square footings at column/high load locations and perimeter grade beams was to be the primary foundation system (if possible) for shallow foundations on-site. No specific construction techniques were provided to **L&G** at the time this report was written. It should be noted, the selection of an appropriate type of foundation design is based on several factors including, but not limited to, soil conditions, site drainage, economics, climate, vegetation, city/government codes, and the level of risk acceptable to the owner/developer.

The most commonly constructed and typically most cost effective foundation system built in the South Texas Area is the Slab on Grade system (including a steel reinforced concrete slab). The

Slab on Grade foundation is intended to be supported in the shallow surface soils through the use of a monolithic slab; however, these foundations can be complemented through the use of exterior and interior stiffened grade beams and/or shallow footings to support concentrated perimeter or wall loads and column loads respectively. For these systems, the compatibility between foundation rigidity and the type of superstructure (building type) to be built on the foundation must be considered in order to avoid damage to the building superstructure and architectural components.

The foundation system selected for construction must be designed with sufficient bearing capacity to resist the imposed loadings without experiencing failure of the underlying soils. The foundation system must also resist soil movements, or volume change, from expansion and contraction of soils due to changes in moisture content. The following sections will provide allowable bearing capacities, potential vertical rise (including earthwork recommendations to minimize shrink and swell), and Slab on Grade design parameters (Welded Reinforcement Institute – WRI, Post-Tensioning Institute – PTI). It should be noted that the recommendations provided are based on geotechnical properties of the project soils and assumptions of construction of this type since no structural loadings were provided. If structural loadings exceed capacities as provided in this report, **L&G** should be advised of the loadings to re-analyze and provide alternate recommendations if needed.

It is important to stress the fact that maintenance of Slab on Grade foundations will help to reduce the potential for structural damage in the present and for the life of the structure. Maintenance can include, but is not limited to procedures such as:

1. Ensure positive drainage around the perimeter of the foundation through site grading
2. Incorporate paving or sidewalks adjacent to foundations for moisture protection
3. Do not plant vegetation closer to the foundation than its mature height
4. Extend canopies or roof drains away from foundation to prevent ponding near foundation
5. Avoid excess wetting or drying of soils around foundations

## Bearing Capacity of Soils (Shallow Foundations)

The bearing capacity of the existing natural ground is defined as the ability of a foundation to safely support the imposed loadings (surcharge), without experiencing any form of shear failure. The ultimate bearing capacity is a measure of the soil's maximum resistance immediately prior to a bearing capacity failure. The ultimate bearing capacity was estimated using the methods and equations, as recommended by the USACE in Manual EM 1110-1-1905 titled "Bearing Capacity of Soils"

$$q_u = c\,N_c\zeta_c + \tfrac{1}{2}\,B\,\gamma_h\,N_\gamma\zeta_\gamma + \sigma\,N_q\zeta_q$$

where:
- $q_u$ = ultimate bearing capacity
- $c$ = soil cohesion
- $B$ = effective width of foundation
- $\gamma_h$ = effective unit weight of soil within failure zone
- $\sigma$ = effective soil surcharge pressure at depth
- $N_c$, $N_\gamma$, $N_q$ = Bearing capacity factors
- $\zeta_c$ $\zeta_\gamma$ $\zeta_q$ = dimensionless correction factors for cohesion, soil unit weight, and surcharge

Nc, Nγ, and Nq are the dimensionless bearing capacity factors developed by Meyerhof, Hansen, and Vesic for general shear failure listed in Table 4-4 of EM 1110-1-1905. Cohesion values for cohesive soils and angle of friction values for granular soils were estimated using a correlation with the Standard Penetration Tests performed in the field. All correlations used were in accordance with the applicable USACE manuals. Where cohesive material was prevalent, the angle of friction value was conservatively assumed to equal zero.

The factor of safety used in our analysis was equal to 3.0, as recommended by Chapter 1 of EM 1110-1-1905. The absolute minimum factor of safety, as recommended by Chapter 1 of EM 1110-1-1905 for this construction is 2.0. The maximum allowable bearing capacity was calculated by dividing the ultimate bearing capacity by the factor of safety. All recommendations reflect the maximum allowable bearing capacity in pounds per square foot.

### Bearing Capacity of Slab on Grade Foundation

**The maximum allowable bearing capacity for the Slab on Grade foundation is 1,500 pounds per square foot.** It should be noted, bearing capacity was calculated assuming square or rectangular foundation geometry with width to length ratio of 1:2.

### Bearing Capacity of Shallow Square Footings

Square footings may be used to support concentrated column loads for the structure. **The maximum allowable bearing capacity for Square Footings is 3,000 pounds per square foot**. Footings should bear in subgrade material at a minimum twenty-four (24) inches below proposed bottom of slab (bottom of footing shall be placed at least 6 inches into subgrade). This recommendation is for the proper development of bearing capacity and is not based on structural considerations. The footing reinforcement should be designed by a structural engineer to resist the dead load of the structure and the live loadings caused by all pertinent loadings using the load combinations and factors of safety provided by the applicable building codes.

### Bearing Capacity of Perimeter Footings (Grade Beams)

Perimeter footings (also called Grade Beams) may be constructed around the slab foundation to support the exterior wall loads of the structure. **The maximum allowable bearing capacity for Perimeter Footings (Grade Beams) is 2,500 pounds per square foot.** Footings should bear in subgrade material at a minimum twenty-four (24) inches below proposed bottom of slab (bottom of footing shall be placed at least 6 inches into

subgrade). This recommendation is for the proper development of bearing capacity and is not based on structural considerations. The footing reinforcement should be designed by a structural engineer to resist the dead load of the structure and the live loadings caused by all pertinent loadings using the load combinations and factors of safety provided by the applicable building codes.

## Potential Vertical Rise (Slab on Grade)

The soils at this site consisted of primarily moderately low moderate plasticity clayey sands throughout the soil profile (becoming more plastic with depth), which have a moderately low to potential for exhibiting appreciable differential movements or swell/shrink capabilities with moisture changes. The Potential Vertical Rise (PVR) calculations for the general soil profile were performed using the Texas Department of Transportation's (TxDOT) TEX 124-E method. Based on review of the soil log (clayey sand / silty clayey sand in top 5 to 6 feet and clayey sand below that depth), water table observation (no water strike encountered), geometric configuration of the area, and typical climatic conditions of the area (generally very hot humid climate).

Based on the soil profile and assumptions previously noted, the average existing PVR was calculated to be approximately **0.6 inches**. This value represents total vertical in-situ movements and does not consider differential swell between any two points on the ground; nor does it take into account movements caused by uncontrolled water sources such as poor drainage, migration of subsurface water from off-site locations, and utility line leaks. Typically, PVR values of around **1 inch** are considered acceptable for most at grade or shallow foundation designs. Based on the results of the calculations as noted, the project site soil conditions do not warrant any major earthwork to counteract potential shrink/swell capabilities. **L&G** does recommend, however, building pad be constructed in accordance with 'Site Grading', 'Site Drainage' and 'Site Preparation' sections of this report. In addition, **L&G** recommends building pad be constructed atop a minimum 12 inches of **Structural Fill** (Recommended). Fill shall meet the requirements of and shall be installed in accordance with the 'Select Fill & Structural Fill Recommendations' section of this report.

## Post-Tensioning Institute (PTI) Slab Design Parameters

The recommendations for foundation design criteria in this section have been calculated using the method described by the Post-Tensioning Institute manual, "Design of Post-Tensioned Slabs-on-Ground" Third Edition; also know as the PTI method. This method gives soil parameters for ribbed or uniform thickness (monolithic) foundations that can be used in the design of post-tensioned or traditionally reinforced foundations. The PTI method does not allow for the development of design parameters for collapsing soils or other highly unusual conditions. It must be emphasized that the determination of these parameters is based upon normal climate-moisture variance from season to season in the local area and are invalid when influenced to any significant degree by other conditions, including but not limited to those mentioned in the previous sections.

The edge moisture variation distances ($e_m$) for the center and edge lift conditions were derived based on a Thornthwaite index of -32 for the project site. The Thornthwaite index is based on the average rainfall over a significant period of time (e.g. 20 or 30 years) in excess or deficit of the average evapotranspiration rates of the area. Other parameters and influencing variables

were derived using information collected from the laboratory tests performed on the recovered soil samples as stated in the PTI guidelines for geotechnical exploration and laboratory testing schedule. Table 2 lists the PTI design parameters for a slab-on-grade foundation supported in the shallow surface soils.

| | Center Lift Conditions | | Edge Lift Conditions | |
|---|---|---|---|---|
| Equilibrium Soil Suction (pF) | Center Moisture Variation Distance $e_m$ (ft) | Est. Differential Movement $y_m$ (in) | Edge Moisture Variation Distance $e_m$ (ft) | Est. Differential Movement $y_m$ (in) |
| **4.07** | **9.00** | **0.14** | **4.80** | **0.52** |

**Table 2 - Recommended PTI Slab Design Parameters**

### Wire Reinforcement Institute (WRI) Slab Design Parameters

The Wire Reinforcement Institute (WRI) method is an empirically derived foundation design method that was developed by observing slab performance over time and creating and modifying equations to give results which approximate foundation designs that exhibit the best results. While the WRI method deals only with foundations reinforced with reinforcing bars or welded wire reinforcement, the procedure has been developed to be independent of the type of reinforcement used.

The climatic rating reflects the stability of the moisture content which may be expected in the soil due to the climatic conditions which may vary from year to year. The effective design Plasticity Index was obtained by weighting the test values in each boring as described in the WRI procedures. The slope correction factor is based on the average slope of the tract of land. Since the slope is relatively small (as shown on Figure 4 in Appendix A) the adjustment factor was negligible. Table 3 lists these WRI design parameters for a slab-on-grade foundation supported in the shallow surface soils.

| Effective PI | Climatic Rating | Slope Coefficient | Soil Support Index, C |
|---|---|---|---|
| **15** | **15** | **1.0** | **1.0** |

**Table 3 - Recommended WRI Slab Design Parameters**

## GENERAL CONSTRUCTION CONSIDERATIONS

### General Site Soils & Conditions Construction Recommendations

Loose, clayey sands and silty clayey sands were found near the surface in the borings at this site. While these soils (in their present state) will safely support the loads indicated in the 'Foundation Recommendations' section of this report, they are particularly susceptible to disturbance during construction. If site grading or structural excavations penetrate these materials, special measures will be necessary to limit disturbance and maintain the strength of these soils. Drainage sumps, wells, or other methods should be utilized to prevent accumulation of water and resulting mixing with and weakening of these soils. Prior to placement of structures onto this material it should be proof rolled and evaluated by **L&G** representatives (if material has softened it should be re-

evaluated for engineering design). If severe disturbance / soil softening are noted, it may be necessary to place and compact additional layers of structural fill prior to installation of structures.

## Site Grading Recommendations

Site grading plans can result in changes in almost all aspects of foundation recommendations. We have prepared the foundation recommendations based on the existing ground surface and the stratigraphic conditions encountered at the time of our study. We recommend gradual slopes away from foundations at structure locations to assist with site drainage, ponding, and potential shrink/swell issues. Based on the upper site soils, erosion and slope sloughing, causing for periodic maintenance are limitations when utilizing 2:1 slopes or steeper. We recommend the use of 3:1 slopes (or flatter) for general site grading.

## Site Drainage Recommendations

Drainage is one of the most important aspects to be addressed to ensure the successful performance of any foundation. Positive surface drainage should be implemented prior to, during and maintained after construction to prevent water ponding at or adjacent to the proposed facilities. We advise that construction drainage programs be implemented to assist with standing waters from precipitation, general surface runoff or other moisture intrusion. It is recommended that the site design include site drainage features to channel runoff away from the proposed site location and most importantly away from all shallow foundations.

## Site Preparation Recommendations

The proposed site areas and all areas used to support foundation construction should be cleared and grubbed of all vegetation, organic topsoil and other miscellaneous debris up to a minimum of two (2) feet beyond the proposed site perimeters. This shall include the removal of all trees, brush, roots, weeds, or other organic debris that will interfere with construction. After clearing, the contractor should follow the earthwork procedures outlined in the 'Foundation Recommendations' section of this report. Any soft and/or compressible soft spots noted during compaction activities shall be over-excavated and replaced with Select Fill. All placements of **Select Fill** and **Structural Fill** shall be in accordance with the 'Select Fill & Structural Fill Recommendations' section of this report. Any excavation/backfill activities should be observed by **L&G** representatives to document subgrade preparation.

## Select Fill & Structural Fill Recommendations

Materials used for **Select Fill** (General Site Grading) shall meet the following requirements:

1. Soils classified according to the Unified Soils Classification System as SM, SC, GM, GC, CL, ML and combinations of these soils. These soils shall be free of organic material, topsoil, debris, or other deleterious material that cannot be properly compacted. In addition to the USCS classification, select materials shall have a **liquid limit of less than 40 and a plasticity index between 8 and 20**.

2. Soils classified as CH, MH, OH, OL and PT, under the USCS are not considered suitable for use as select fill materials at this site.

3. **L&G** recommends additional quality control of all 'General Site Fill' materials as they are placed and compacted to ensure that they meet the requirements specified.

**Select Fill** shall be placed in lifts not to exceed 8 inches loose (6 inches compacted) and compacted to a minimum 95 percent of the maximum dry density as determined in accordance with ASTM D698. The water content of the fill shall be maintained within the range of optimum moisture to three (3) percentage points above the optimum moisture content until the fill is permanently covered. The fill should be properly compacted in accordance with these recommendations and tested for compaction as specified.

Materials used for **Structural Fill** shall meet the following requirements:

1. Soils classified as Base Material meeting the requirements of TxDOT 2004 Specification Item 247 Type E, Grade 4 - Caliche (see Table 5 for specifications and requirements) or Item 247 Type A, Grade 1 - Limestone (see Table 6 for specifications and requirements).

2. **L&G** recommends additional quality control of all **Structural Fill** materials as they are placed and compacted to ensure that they meet the requirements specified.

**Structural Fill** shall be compacted to a minimum 98 percent of the maximum dry density as determined by the ASTM D698 at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. **Structural Fill** shall be placed in loose lifts not to exceed 8 inches (6 inches compacted). The fill should be properly compacted in accordance with these recommendations and tested for compaction as specified.

| Retained on Square Sieve | Percent Retained |
|---|---|
| 2" | 0 |
| $^1/_2$" | 20-60 |
| No. 4 | 40-75 |
| No. 40 | 70-90 |
| Plasticity Index, max | 15 |
| Wet Ball PI, max | 15 |
| Wet Ball Mill, % max | 50 |

**Table 5 – Structural Fill - Type E Grade 4 Specifications**

| Retained on Square Sieve | Percent Retained |
|---|---|
| 2–½" | 0 |
| 1–¾" | 0 |
| 7/8" | 10-35 |
| 3/8" | 30-50 |
| No. 4 | 45-65 |
| No. 40 | 70-85 |
| Liquid Limit, % max | 35 |
| Plasticity Index, % max | 10 |
| Wet Ball Mill, % max | 40 |

**Table 6 – Structural Fill - Type A Grade 1 Specifications**

### Excavation, Sloping, Benching and Utility Considerations

If trenches are to extend to or below a depth of five (5) ft, the contractor or persons doing the trenching should adhere to the current Occupational Health and Safety Administration (OSHA) guidelines on trench excavation safety and protection measures or other applicable industry standards. The collection of specific geotechnical data and development of a plan for trench safety, sloping, benching or various types of temporary shoring, is beyond the scope of the this study. Utilities that protrude through the slab-on-grade should be designed with some degree of flexibility or with sleeves. Such features will help reduce the risk of damage to utility facilities from soil movements related to shrinkage and expansion. Furthermore, when trenching for utility installation, we recommend that the backfill used to protect these utilities conform to the recommendations presented in the 'Select Fill Recommendations' section of this report.

## PAVEMENT RECOMMENDATIONS

### Background Information

The pavement recommendations contained in this report were limited to the data recovered from the field and laboratory testing performed for the borings. No traffic loading data was presented for the proposed parking lot. Our recommendations are based on design procedures found in the Army Corps of Engineers Manuals EM 1110-3-131 (Flexible Pavement Design) and our experience with similar soils and site conditions. The traffic composition used in our analysis was grouped under 'Category I', which is comprised of traffic essentially free of trucks (not more than 1% two-axle trucks). The road type selected was 'Class E', with a flat slope and low volume (under 1,000 average daily vehicles).

### Subgrade Analysis

The existing subgrade index properties (plasticity index and grain size) were used to correlate the Modulus of Soil Reaction (k) and the California Bearing Ratio (CBR) values of the subgrade. These values were then applied to the corresponding design procedures, according to the applicable Army Corps of Engineers manuals to determine the recommended minimum pavement thickness for flexible pavement designs. A subgrade k value of **215 pci** and a CBR value of **12** were utilized in the pavement designs.

## Pavement Section Recommendations

After completing the pavement designs and analyzing several options for construction, **L&G** has provided the following options within Table 7 for pavement thickness:

| Flexible Pavement Design Recommendations | | |
|---|---|---|
| **Materials** | **Design #1** | **Design #2** |
| Asphalt Pavement (ACP) | **2.0 in.** | **2.0 in.** |
| Crushed Limestone (Ty.A Gr.1) | **6.0 in.** | |
| Caliche Base (Ty.E Gr.4) | | **6.0 in.** |
| Compacted Subgrade | **6.0 in.** | **6.0 in.** |

**Table 7 – Flexible Pavement Options**

## Pavement Material Specification Recommendations

### Asphaltic Concrete Pavement (ACP) Surface

The asphalt concrete pavement (ACP) surface shall meet the requirements of the current TxDOT 2004 Specification Item 340 for Type D Hot Mix Asphaltic Concrete. The hot mix asphaltic surface will be compacted to between 91 and 96 percent of the maximum theoretical density in conformance with the specification. The grade of the asphalt cement should contain a minimum PG 64-22 asphalt binder. It is recommended that the testing required by this specification be performed during production and placement by a representative of **L&G**.

### Flexible Base Material (Crushed Limestone)

The crushed limestone material shall meet the requirements of TxDOT 2004 Specification Item 247 Type A, Grade 1. The limestone base shall conform to the gradation and properties requirements as previously presented in Table 6 – Structural Fill - Type A Grade 1 Specifications. The Wet Ball Test (Tex-116-E) and the Plasticity Index shall be run with the material passing the No. 40 sieve. The base shall be compacted to a minimum 98 percent of the maximum dry density as determined by the standard moisture density relation at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. The base shall be placed in loose lifts not to exceed 8 inches (6 inches compacted).

### Flexible Base Material (Caliche)

The caliche base material shall meet the requirements of TxDOT 2004 Specification Item 247 Type E, Grade 4 as approved by the engineer. Caliche base shall conform to the gradation and properties requirements as previously presented in Table 5 – Structural Fill - Type E Grade 4 Specifications requirements **before** lime or admixtures are added. The Wet Ball Test (Tex-116-

E) and the Plasticity Index shall be run with the material passing the No. 40 sieve. The base shall be compacted to a minimum 98 percent of the maximum dry density as determined by the standard moisture density relation at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. The base shall be placed in loose lifts not to exceed 8 inches (6 inches compacted). Lime treated caliche base material shall meet all the previous requirements and contain a minimum of two (2) percent lime or Portland Cement by weight. Lime and cement treatments shall be in compliance with all applicable sections of TxDOT Item 260 and 275 specifications.

### Compacted Subgrade

The subgrade layer shall be compacted and moisture conditioned to a minimum 95 percent of the maximum dry density at moisture contents ranging from minus two (-2) to plus three (+3) percentage points of the optimum moisture content. Based on the soil properties and in-situ strength conditions, no further treatment is warranted. It should be noted, however, the addition of small percentage of lime and/or cement (usually no more than 3%) is typically utilized to enhance strength and provide a solid working platform for the construction.

## General and Miscellaneous Recommendations

Adequate perimeter drainage is essential for long-term performance of any pavement structure. Infiltration of surface water from unpaved areas surrounding the pavement should be minimized. Base materials under curb and gutters should be compacted to the same requirements as other areas. It is recommended that these curb and gutters be extended through the base and a minimum of three (3) inches into the subgrade. This will reduce the potential of intrusion of moisture from adjacent areas. An adequate seal should be provided at all base-asphalt interfaces.

A maintenance plan is recommended for the long-term performance of paved areas. Asphaltic pavements have a tendency to strip and become oxidized with exposure to the elements. Thus cracks may become present in the pavement. It is recommended that a maintenance schedule of biannual crack sealing, fog seals and overlays every five to ten years be used over the life of the pavement.

## REFERENCES


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6. TxDOT, 2005, “100-E, Soils & Aggregates Test Procedures”, Austin, TX.

7. American Society of Testing Materials, Volume 04.08, Soil and Rock (I): D420- D5779 March 2003.

8. United Stated Army Corps of Engineers, “Bearing Capacity of Soils”, EM 1110-1-1905

9. United Stated Army Corps of Engineers, “Flexible Pavements for Roads, Streets, Walks and Open Storage Areas”, EM 1110-3-131

10. United Facilities Criteria (UFC), “Soils & Geology Procedures for Foundation Design of Building and Other Structures”, UFC 3-220-03FA, (January 2004).

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# APPENDIX A – FIGURES

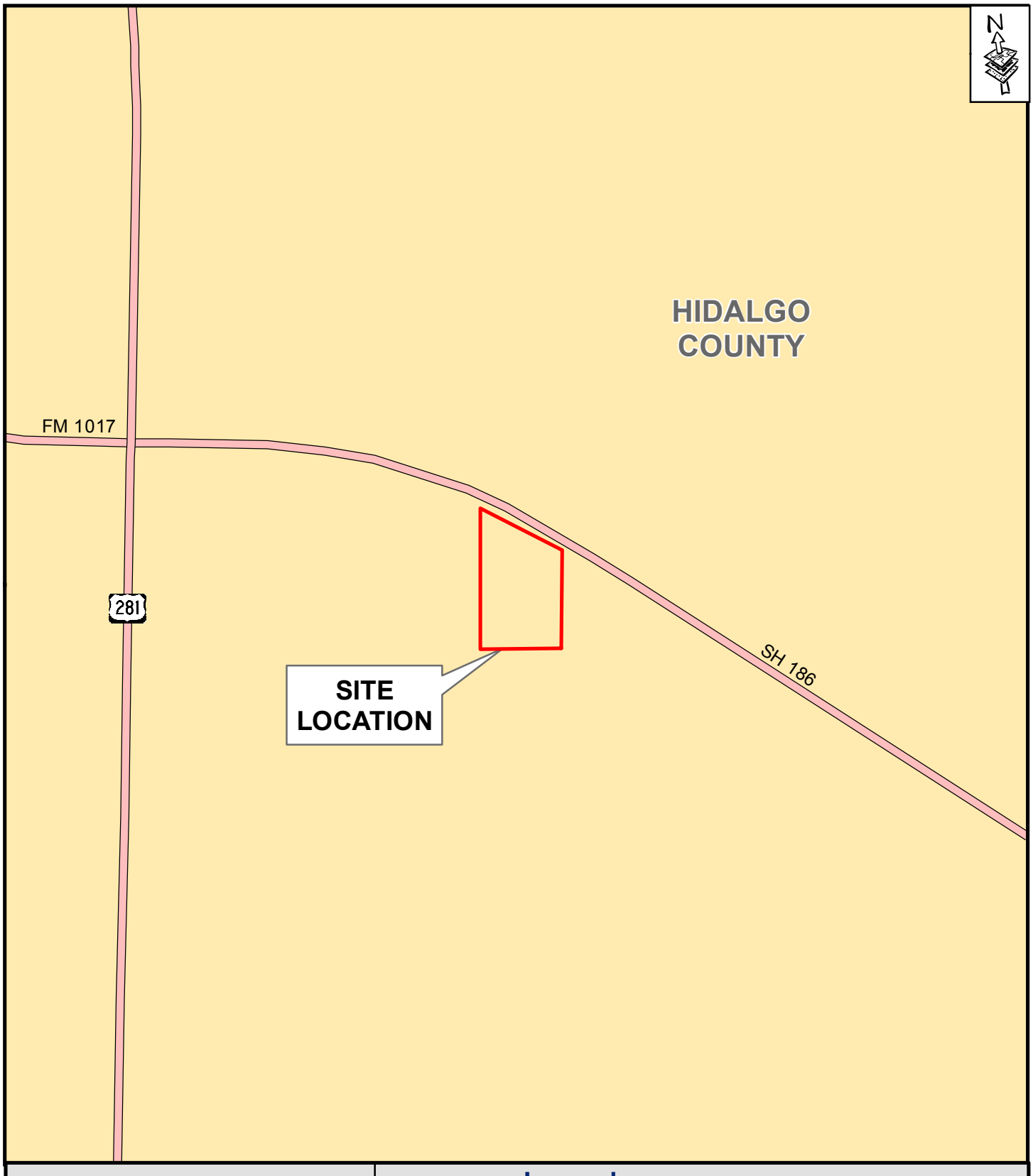


**Figure 1**
**Hidalgo Co. Pct. No. 4**
**Emergency Services Facility**
**Location Map**

**Legend**

- Site Location
- Counties
- State Roads

400 Feet

1 inch = 400 feet

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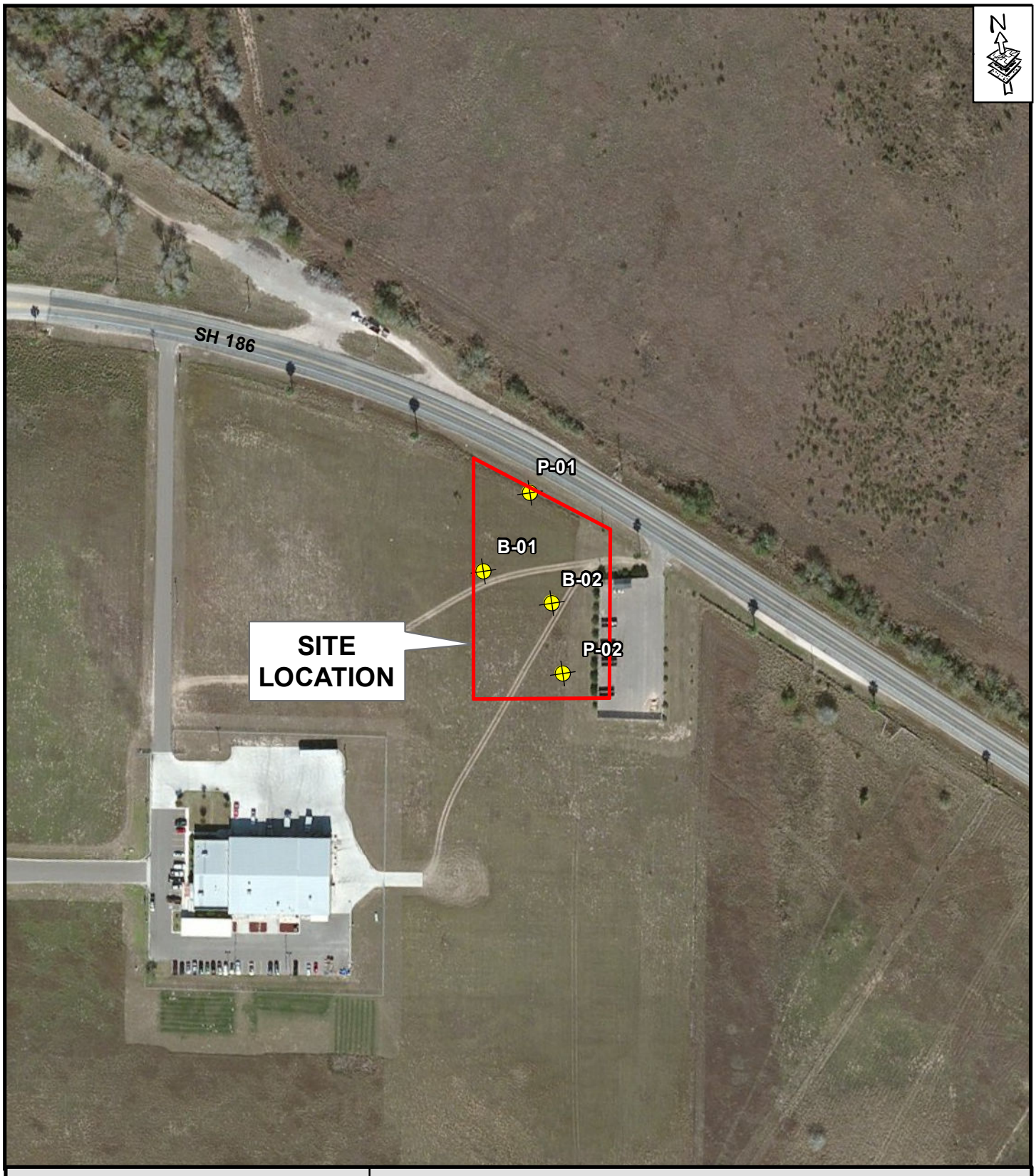


**Figure 2**
**Hidalgo Co. Pct. No. 4**
**Emergency Services Facility**
**Boring Map**

**Legend**

Boring Locations

Site Location

200
Feet
1 inch = 200 feet

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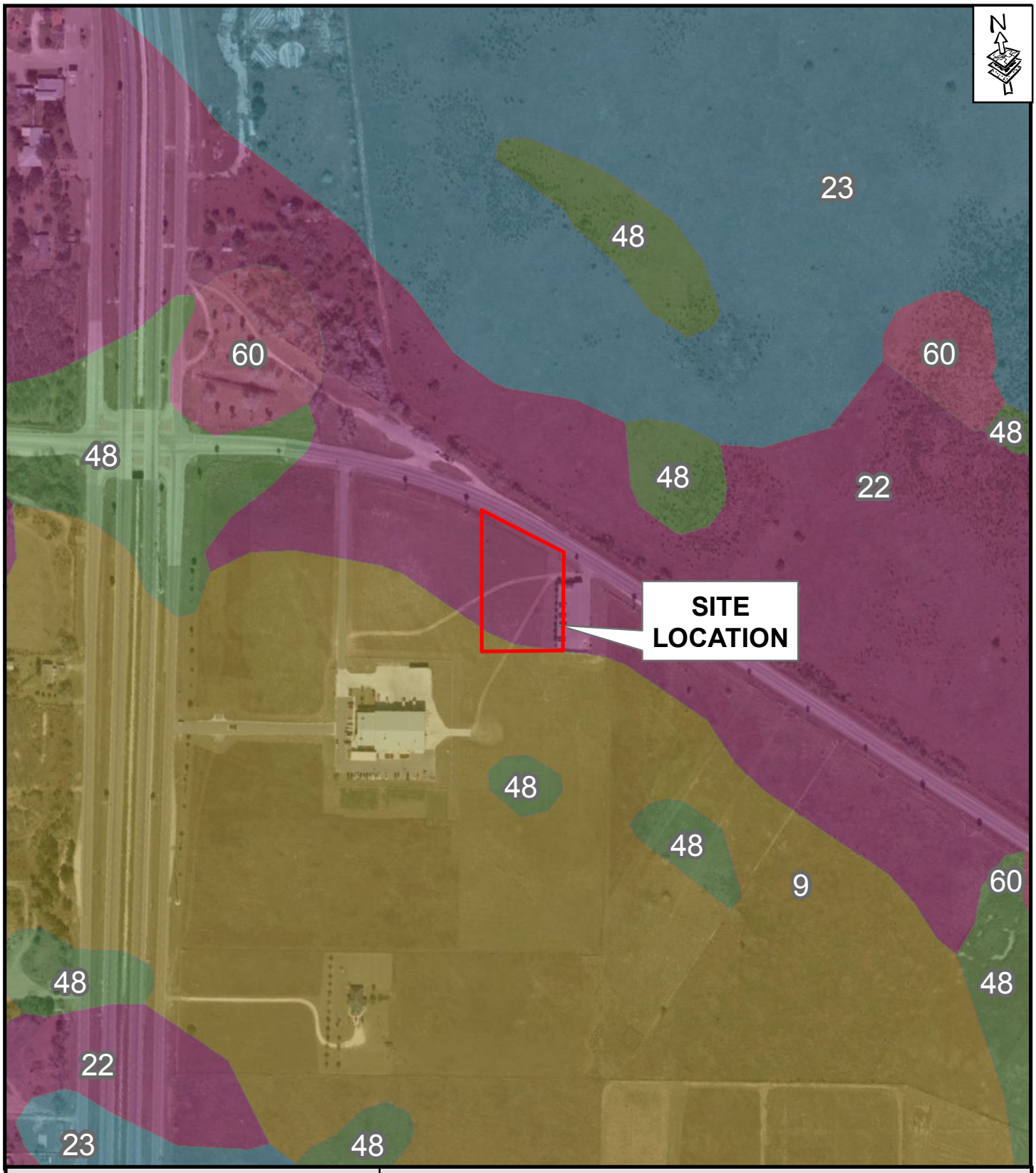


**Figure 3**
**Hidalgo Co. Pct. No. 4**
**Emergency Services Facility**
**Soil Classification Map**
USDA SOIL CONSERVATION SERVICE

## Legend

- Site Location
- 22 - Hebbronville Sandy Loam, 0 to 1% slopes
- 9 - Delfina Loamy Fine Sand, 0 to 3% slopes

400 Feet

1 inch = 400 feet

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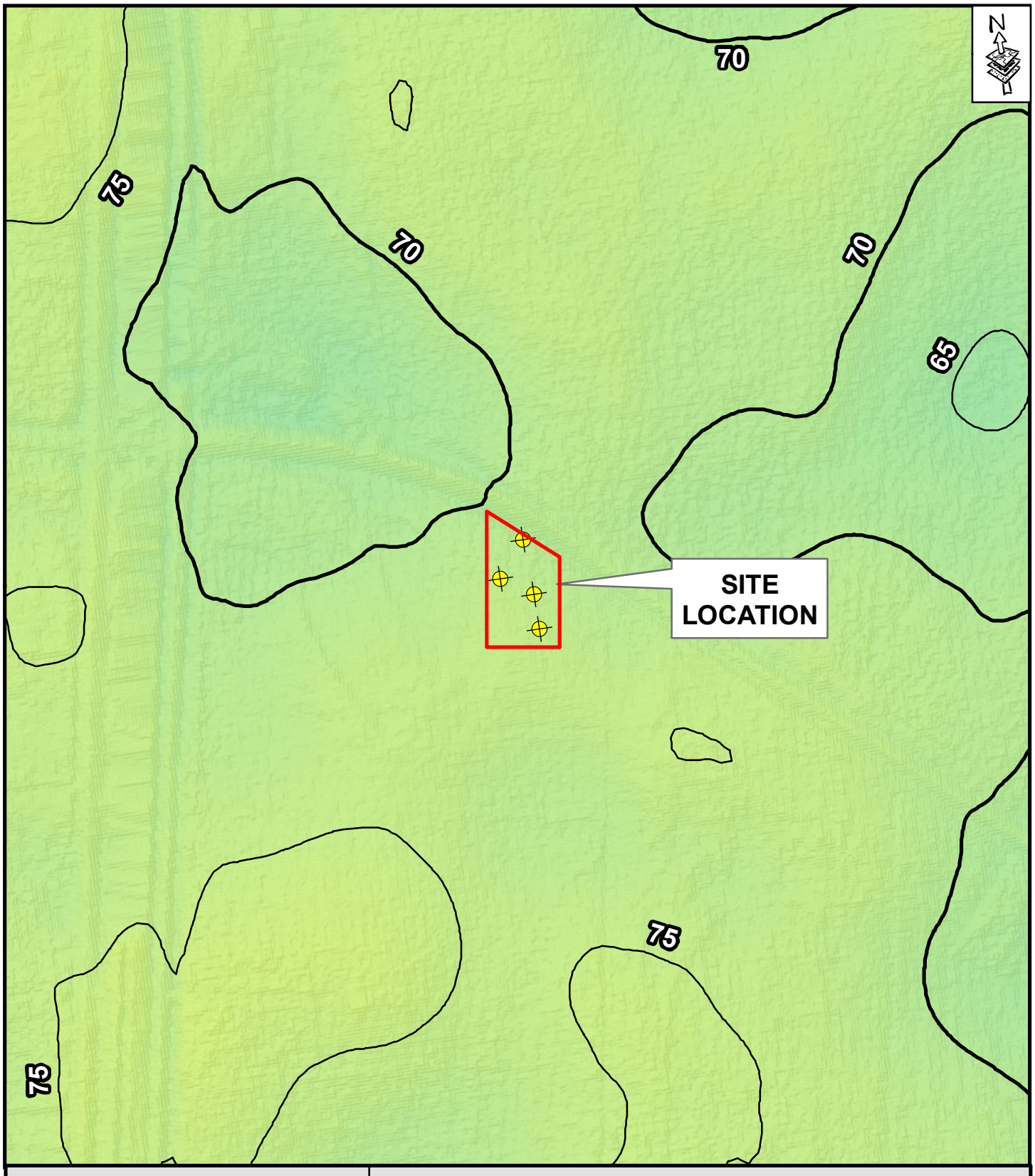


**Figure 4**
**Hidalgo Co. Pct. No. 4**
**Emergency Services Facility**
**Digital Elevation Map**

## Legend

- Borehole Locations
- Site Location
- 1 ft Contours
- 5 ft Contours
- 10 ft Contours

Value
High
Low

400 Feet
1 inch = 400 feet

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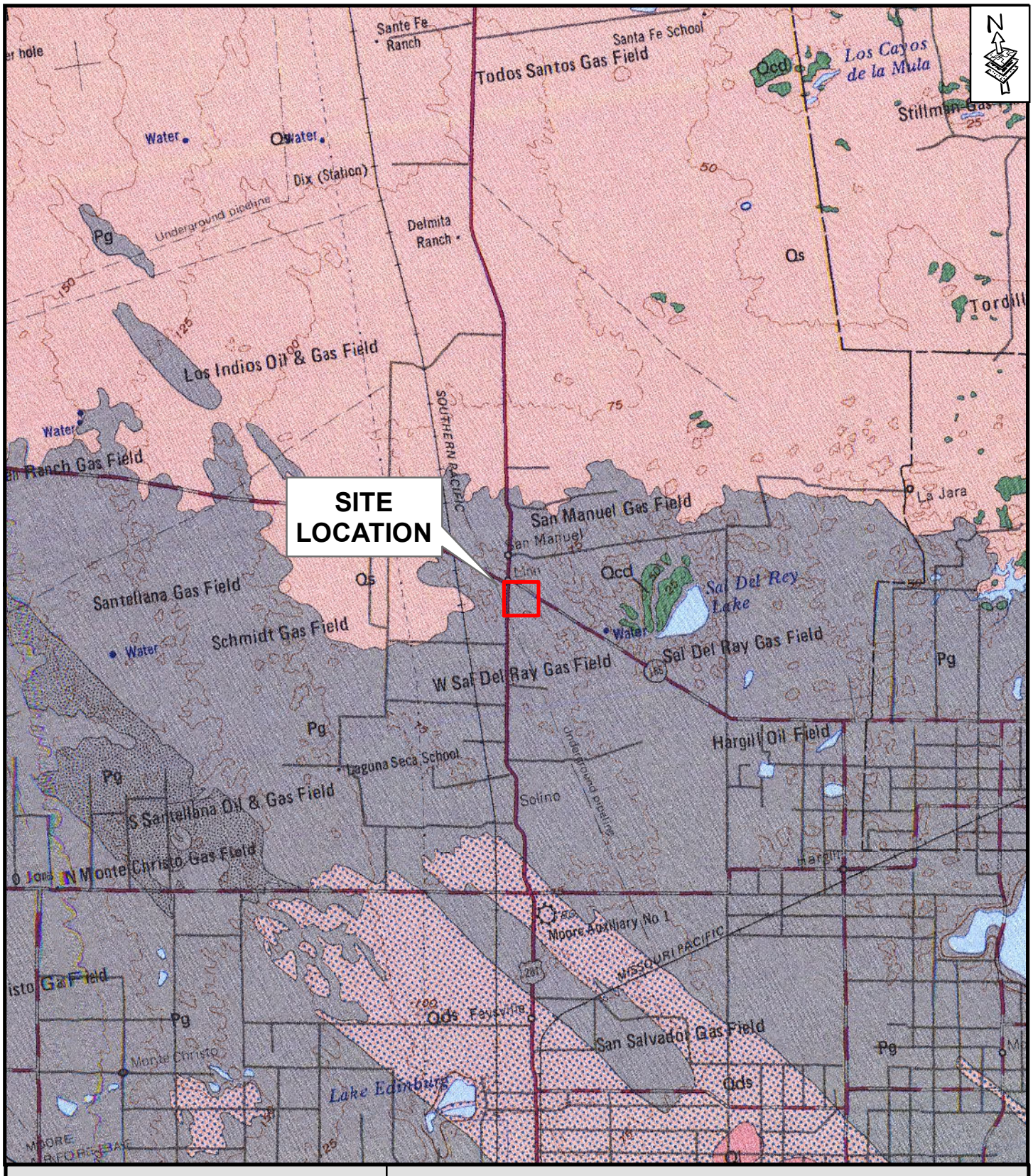


**Figure 5**
**Hidalgo Co. Pct. No. 4**
**Emergency Services Facility**
**Geologic Atlas of Texas Map**

## Legend

- Site Location
- Pg — Goliad Formation

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# APPENDIX B – BORING LOGS

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Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

# KEY TO SYMBOLS

**CLIENT** Hidalgo County Pct. 4 **PROJECT NAME** Emergency Services Facility

**PROJECT NUMBER** GL13032 **PROJECT LOCATION** Hidalgo County

## LITHOLOGIC SYMBOLS
## (Unified Soil Classification System)

CL: USCS Low Plasticity Clay

SC: USCS Clayey Sand

SC-SM: USCS Clayey Sand

## SAMPLER SYMBOLS

Shelby Tube

Standard Penetration Test

## WELL CONSTRUCTION SYMBOLS

## ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)
TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION
Water Level at Time Drilling, or as Shown
Water Level at End of Drilling, or as Shown
Water Level After 24 Hours, or as Shown

KEY TO SYMBOLS - GINT STD US LAB.GDT - 1/2/14 15:15 - L:\GINT\PROJECTS\HID CO PCT 4 - EMERGENCY SERVICES FACILITY.GPJ

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Mercedes TX 78570
Telephone: 956-565-0760

# BORING NUMBER B-1



**CLIENT** Hidalgo County Pct. 4
**PROJECT NAME** Emergency Services Facility
**PROJECT NUMBER** GL13032
**PROJECT LOCATION** Hidalgo County
**DATE STARTED** 12/10/13 **COMPLETED** 12/10/13
**GROUND ELEVATION** 73 ft **HOLE SIZE** 4 inches
**DRILLING CONTRACTOR** L&G Engineering Laboratory
**GROUND WATER LEVELS:**
**DRILLING METHOD** Solid Stem Auger
**AT TIME OF DRILLING** --- No Water Strike Encountered
**LOGGED BY** R. Cantu **CHECKED BY** D. Saenz, P.E.
**AT END OF DRILLING** ---
**NOTES** GPS 26°33'19.60"N, 98°07'09.40"W (Elev. Approx.)
**AFTER DRILLING** ---

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | POCKET PEN. (tsf) | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: PLASTICITY INDEX | FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | (SC) Clayey Sand, Lean, Dark Brown to Orange - Brown, Medium Dense, Dry | SPT 1 | | 3-4-7 (11) | | | 6 | | | | 31 |
| | | | SPT 2 | | 9-7-7 (14) | | | 3 | 27 | 15 | 12 | |
| 5 | | (SC) Clayey Sand, Lean, Light Brown, w/ Calcareous Nodules, Medium Dense, Dry | SPT 3 | | 7-8-9 (17) | | | 3 | | | | |
| | | | SPT 4 | | 9-7-6 (13) | | | 3 | | | | 47 |
| 10 | | | SPT 5 | | 11-12-11 (23) | | | 4 | 37 | 21 | 16 | |
| 15 | | (SC) Clayey Sand, Lean, Light Brown, w/ Calcareous Nodules, Very Dense, Dry | SPT 6 | | 31-37-44 (81) | | | 6 | | | | 37 |
| 20 | | | SPT 7 | | 50/5" | | | 9 | 46 | 23 | 23 | |
| 25 | | (SC) Clayey Sand, Lean , Grayish Light Brown, Very Dense, Cemented Sections, Dry | SPT 8 | | 16-23-43 (66) | | | 7 | | | | 27 |

Bottom of borehole at 25.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 1/2/14 15:14 - L:\GINT\PROJECTS\HID CO PCT 4 - EMERGENCY SERVICES FACILITY.GPJ

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Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

# BORING NUMBER B-2



**CLIENT** Hidalgo County Pct. 4 **PROJECT NAME** Emergency Services Facility

**PROJECT NUMBER** GL13032 **PROJECT LOCATION** Hidalgo County

**DATE STARTED** 12/10/13 **COMPLETED** 12/10/13 **GROUND ELEVATION** 73 ft **HOLE SIZE** 4 inches

**DRILLING CONTRACTOR** L&G Engineering Laboratory **GROUND WATER LEVELS:**

**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Water Strike Encountered

**LOGGED BY** R. Cantu **CHECKED BY** D. Saenz, P.E. **AT END OF DRILLING** ---

**NOTES** GPS 26°33'19.00"N, 98°07'08.40"W (Elev. Approx.) **AFTER DRILLING** ---

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | POCKET PEN. (tsf) | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: PLASTICITY INDEX | FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | (SC-SM) Silty Clayey Sand, Dark Brown, Very Loose, Dry | SPT 1 | | 1-1-2 (3) | | | 7 | 22 | 16 | 6 | |
| | | (SC) Clayey Sand, Lean, Orange - Brown w/ Dark Brown Sections (Noted From 4.5 ft to 6 ft), Loose to Medium Dense, Dry | SPT 2 | | 3-4-5 (9) | | | 4 | | | | 36 |
| 5 | | | SPT 3 | | 4-5-7 (12) | | | 3 | | | | |
| | | (SC) Clayey Sand, Lean, Light Brown, w/ Calcareous Nodules, Medium Dense, Dry | SPT 4 | | 10-10-11 (21) | | | 2 | 35 | 16 | 19 | |
| 10 | | | SPT 5 | | 8-10-14 (24) | | | 2 | | | | 47 |
| | | (SC) Clayey Sand, Lean, Light Brown, w/ Calcareous Nodules, Dense to Very Dense, Dry | SPT 6 | | 11-18-25 (43) | | | 6 | 40 | 28 | 12 | |
| 15 | | | | | | | | | | | | |
| 20 | | | SPT 7 | | 50/3" | | | 10 | | | | 44 |
| | | (CL) Sandy Lean Clay, Light Brown, Hard, Dry | SPT 8 | | 50/5" | | | 6 | 30 | 21 | 9 | 61 |
| 25 | | | | | | | | | | | | |

Bottom of borehole at 25.0 feet.

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Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

# BORING NUMBER P-1



**CLIENT** Hidalgo County Pct. 4
**PROJECT NAME** Emergency Services Facility
**PROJECT NUMBER** GL13032
**PROJECT LOCATION** Hidalgo County
**DATE STARTED** 12/10/13 **COMPLETED** 12/10/13
**GROUND ELEVATION** 72 ft **HOLE SIZE** 4 inches
**DRILLING CONTRACTOR** L&G Engineering Laboratory
**GROUND WATER LEVELS:**
**DRILLING METHOD** Solid Stem Auger
**AT TIME OF DRILLING** --- No Water Strike Encountered
**LOGGED BY** R. Cantu **CHECKED BY** D. Saenz, P.E.
**AT END OF DRILLING** ---
**NOTES** GPS 26°33'20.60"N, 98°07'08.48"W (Elev. Approx.)
**AFTER DRILLING** ---

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | POCKET PEN. (tsf) | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: PLASTICITY INDEX | FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | (SC) Clayey Sand, Lean, Dark Brown, w/ Traces of Small Roots, Very Loose to Loose, Dry | SPT 1 | | 2-2-4 (6) | | | 7 | | | | 30 |
| | | | SPT 2 | | 3-2-2 (4) | | | 5 | 24 | 16 | 8 | |
| 5 | | | SPT 3 | | 3-2-2 (4) | | | 5 | | | | 32 |
| | | (SC) Clayey Sand, Lean, Light Brown, w/ Calcareous Nodules, Loose, Dry | SPT 4 | | 3-3-5 (8) | | | 6 | 30 | 15 | 15 | 35 |
| 10 | | (SC) Clayey Sand, Lean, Brown, w/ Calcareous Nodules, Medium Dense, Dry | SH 5 | | | 4.5 | | 8 | 45 | 21 | 24 | 49 |

Bottom of borehole at 10.0 feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 1/2/14 15:15 - L:\GINT\PROJECTS\HID CO PCT 4 - EMERGENCY SERVICES FACILITY.GPJ

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Construction Material Testing
Geotechnical Engineering

L&G Engineering Laboratory LLC
2100 W. Expressway 83
Mercedes TX 78570
Telephone: 956-565-0760

# BORING NUMBER P-2



**CLIENT** Hidalgo County Pct. 4
**PROJECT NAME** Emergency Services Facility
**PROJECT NUMBER** GL13032
**PROJECT LOCATION** Hidalgo County
**DATE STARTED** 12/10/13 **COMPLETED** 12/10/13
**GROUND ELEVATION** 74 ft **HOLE SIZE** 4 inches
**DRILLING CONTRACTOR** L&G Engineering Laboratory
**GROUND WATER LEVELS:**
**DRILLING METHOD** Solid Stem Auger
**AT TIME OF DRILLING** --- No Water Strike Encountered
**LOGGED BY** R. Cantu **CHECKED BY** D. Saenz, P.E.
**AT END OF DRILLING** ---
**NOTES** GPS 26°33'18.00"N, 98°07'08.40"W (Elev. Approx.)
**AFTER DRILLING** ---

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | SAMPLE TYPE NUMBER | RECOVERY % (RQD) | BLOW COUNTS (N VALUE) | POCKET PEN. (tsf) | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: PLASTICITY INDEX | FINES CONTENT (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | (SC) Clayey Sand, Lean, Dark Brown w/ Light Brown Sections, w/ Traces of Small Roots, Very Loose to Loose, Dry | SPT 1 | | 1-2-2 (4) | | | 5 | 24 | 16 | 8 | |
| | | | SPT 2 | | 2-2-2 (4) | | | 5 | | | | 34 |
| 5 | | | SPT 3 | | 2-2-3 (5) | | | 7 | 24 | 16 | 8 | |
| | | (SC) Clayey Sand, Lean, Light Tannish Brown, w/ Calcareous Nodules, Medium Dense, Dry | SPT 4 | | 4-5-7 (12) | | | 6 | | | | 42 |
| 10 | | (CL) Sandy Lean Clay, Light Tannish Brown, w/ Calcareous Nodules, Very Stiff, Dry | SPT 5 | | 7-8-11 (19) | | | 5 | 40 | 18 | 22 | 50 |

Bottom of borehole at 10.0 feet.

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# APPENDIX C – POTENTIAL VERTICAL RISE

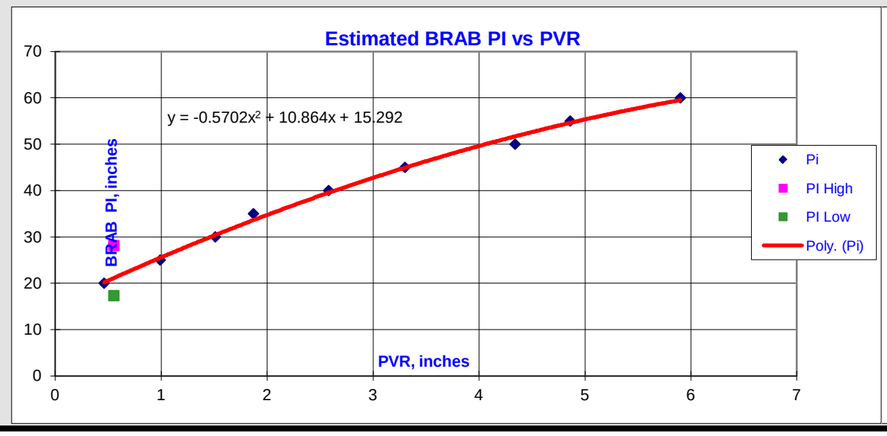
Project: Hidalgo Co. Pct.4 - Emergency Services Facility
Number: GL13032
Boring: Proposed Building
Date: 12/20/13
Engineer: Jordan B. Sinclair, E.I.T.

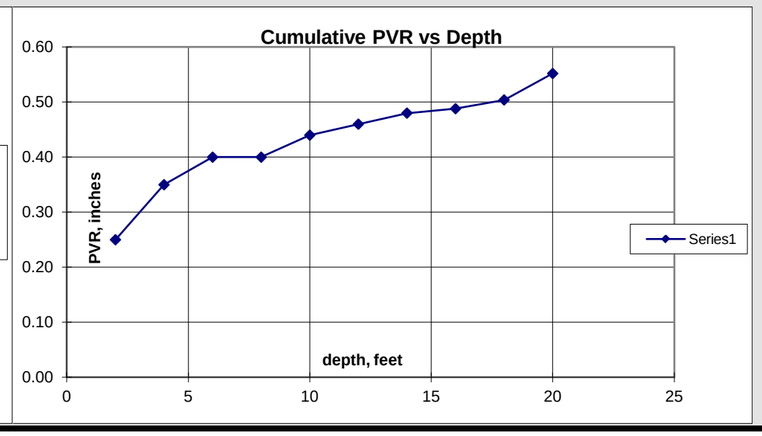
**Existing in-situ soil has a PVR of approximately 0.6 inches at this location.**

**L & G Engineering Laboratory**
Construction Material Testing
Geotechnical Engineering

Additional Surcharge 0 psi
Wet Density 125 pcf

| Layer | Top | Bottom | PI | Load Top | Load Bottom | Average Load, psi | Moisture content | Minus No. 40 | Free Swell | Top of Layer | Bottom of Layer | Differential PVR | PVR in Layer | Cumulative PVR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 12 | 0 | 2 | 1 | dry | 100% | 5.0 | 0.00 | 0.25 | 0.25 | 0.25 | 0.25 |
| 2 | 2 | 4 | 12 | 2 | 4 | 3 | dry | 100% | 5.0 | 0.25 | 0.35 | 0.10 | 0.10 | 0.35 |
| 3 | 4 | 6 | 14 | 4 | 6 | 5 | dry | 100% | 5.0 | 0.35 | 0.40 | 0.05 | 0.05 | 0.40 |
| 4 | 6 | 8 | 14 | 6 | 8 | 7 | dry | 100% | 5.0 | 0.40 | 0.40 | 0.00 | 0.00 | 0.40 |
| 5 | 8 | 10 | 16 | 8 | 10 | 9 | dry | 100% | 6.0 | 0.66 | 0.70 | 0.04 | 0.04 | 0.44 |
| 6 | 10 | 12 | 16 | 10 | 12 | 11 | dry | 100% | 6.0 | 0.70 | 0.72 | 0.02 | 0.02 | 0.46 |
| 7 | 12 | 14 | 16 | 12 | 14 | 13 | dry | 100% | 6.0 | 0.72 | 0.74 | 0.02 | 0.02 | 0.48 |
| 8 | 14 | 16 | 23 | 14 | 16 | 15 | dry | 100% | 9.0 | 1.76 | 1.77 | 0.01 | 0.01 | 0.49 |
| 9 | 16 | 18 | 23 | 16 | 18 | 17 | dry | 100% | 9.0 | 1.77 | 1.78 | 0.02 | 0.02 | 0.50 |
| 10 | 18 | 20 | 23 | 18 | 20 | 19 | dry | 100% | 9.0 | 1.78 | 1.83 | 0.05 | 0.05 | 0.55 |




**PVR 0.6**

**Equivalent BRAB PI**
**14**

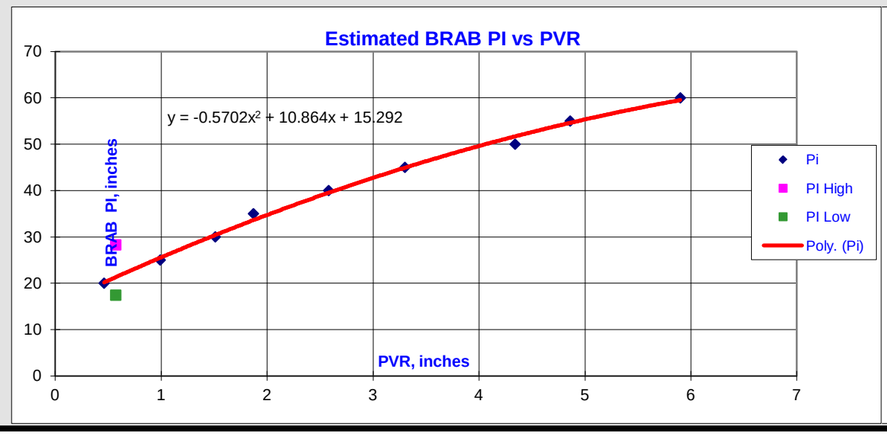
Project: Hidalgo Co. Pct.4 - Emergency Services Facility
Number: GL13032
Boring: Proposed Building
Date: 12/20/13
Engineer: Jordan B. Sinclair, E.I.T.

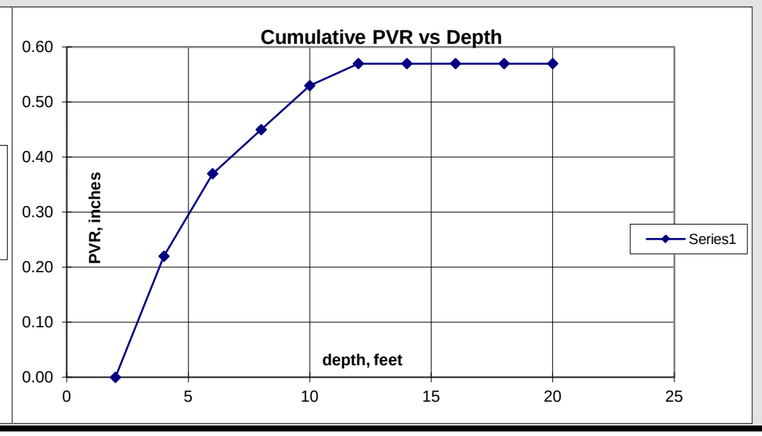
**Existing in-situ soil has a PVR of approximately 0.6 inches at this location.**

**L&G Engineering Laboratory**
Construction Material Testing
Geotechnical Engineering

Additional Surcharge 0 psi
Wet Density 125 pcf

| Layer | Top | Bottom | PI | Load Top | Load Bottom | Average Load, psi | Moisture content | Minus No. 40 | Free Swell | Top of Layer | Bottom of Layer | Differential PVR | PVR in Layer | Cumulative PVR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 6 | 0 | 2 | 1 | dry | 100% | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 2 | 4 | 19 | 2 | 4 | 3 | dry | 100% | 7.0 | 0.47 | 0.69 | 0.22 | 0.22 | 0.22 |
| 3 | 4 | 6 | 19 | 4 | 6 | 5 | dry | 100% | 7.0 | 0.69 | 0.84 | 0.15 | 0.15 | 0.37 |
| 4 | 6 | 8 | 19 | 6 | 8 | 7 | dry | 100% | 7.0 | 0.84 | 0.92 | 0.08 | 0.08 | 0.45 |
| 5 | 8 | 10 | 19 | 8 | 10 | 9 | dry | 100% | 7.0 | 0.92 | 1.00 | 0.08 | 0.08 | 0.53 |
| 6 | 10 | 12 | 19 | 10 | 12 | 11 | dry | 100% | 7.0 | 1.00 | 1.04 | 0.04 | 0.04 | 0.57 |
| 7 | 12 | 14 | 12 | 12 | 14 | 13 | dry | 100% | 5.0 | 0.40 | 0.40 | 0.00 | 0.00 | 0.57 |
| 8 | 14 | 16 | 12 | 14 | 16 | 15 | dry | 100% | 5.0 | 0.40 | 0.40 | 0.00 | 0.00 | 0.57 |
| 9 | 16 | 18 | 12 | 16 | 18 | 17 | dry | 100% | 5.0 | 0.40 | 0.40 | 0.00 | 0.00 | 0.57 |
| 10 | 18 | 20 | 12 | 18 | 20 | 19 | dry | 100% | 5.0 | 0.40 | 0.40 | 0.00 | 0.00 | 0.57 |

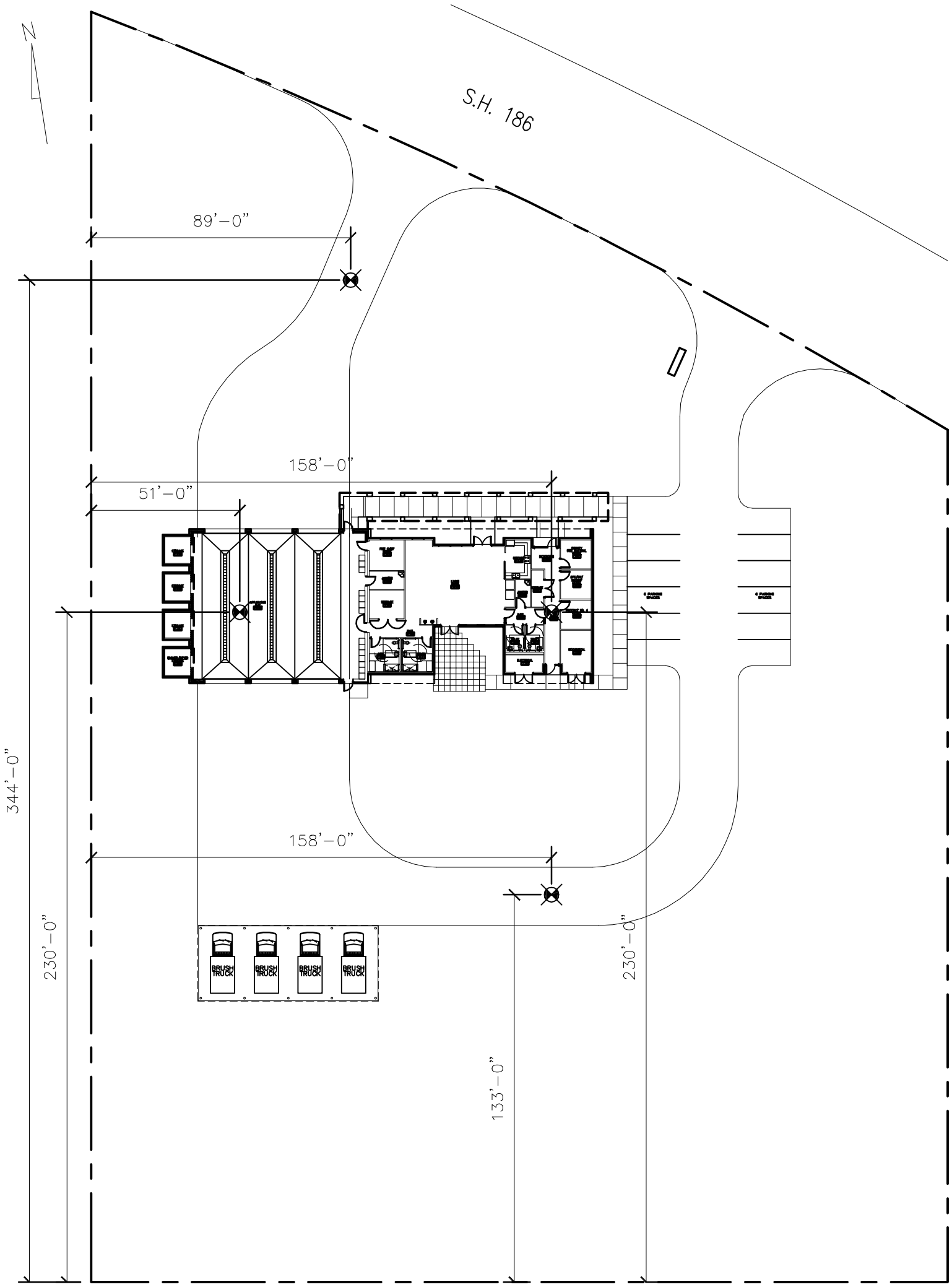



**PVR 0.6**

**Equivalent BRAB PI**
**16**

# APPENDIX D – PLANS & SPECS (PROVIDED BY CLIENT)


N
S.H. 186
89'–0"
158'–0"
51'–0"
158'–0"
344'–0"
230'–0"
230'–0"
133'–0"
BRUSH TRUCK
BRUSH TRUCK
BRUSH TRUCK
BRUSH TRUCK

**SECTION 00300**

**BID FORM**

**PROJECT:** 2014-067-04-02-MSS-Hidalgo County Precinct No. 4 "Construction of the Linn – San Manuel Emergency Services Facility

**PLACE:** Hidalgo County Purchasing Department, Hidalgo County New Administration Building, 2802 South Business Hwy. 281, (Southeast of Canton Road and Business 281), Edinburg, Texas.

**DATE:** April 2, 2014

**TIME:** 3:00 PM

**TO:** Martha L. Salazar, CPPB, Hidalgo County Purchasing Agent, Hidalgo County Purchasing Department

1. Pursuant to and in compliance with the Invitation for Bid and the proposed contract documents dated February 27, 2014; Mata+Garcia Architects LLP to the above referenced project, the undersigned hereby proposes and agrees to fully perform the work within the time stated and in strict accordance with the proposed Contract Documents, and addenda thereto, for the following sum of money:

   A. BASE BID: New Emergency Services Facility: All labor, materials, services, and equipment necessary for the work shown on the drawings and specifications, (Contract Documents), by the date set forth by the general contractor as the completion date of the project.

   _____DOLLARS($_____)

   B. Alternate No. 1 – Generator: All labor, materials, services, and equipment necessary for the work shown on the drawings and specifications, (Contract Documents), add the following amount:

   _____DOLLARS($_____)

   C. Alternate No. 2 – Asphalt and Concrete Driveways and Parking as per Civil Engineering Drawings: All labor, materials, services, and equipment necessary for the work shown on the drawings and specifications, (Contract Documents), deduct the following amount:

   _____DOLLARS($_____)

2. If awarded this contract, the undersigned will execute a satisfactory Construction Contract, Performance Bond, Labor and Material Payment Bond and Proof of Insurance coverage, with the Owner for the entire work as per the Contract Documents within ten (10) days after the Notice of Award. It is agreed that his proposal is subjected to the owner's acceptance for a period of thirty (30) days from the above date.

3. Enclosed is a Certificate Check or Bidders Bond in the amount of $_____in compliance with the specifications requirements. (5% of highest amount proposed.) The above check or Bidders Bond is to become the property of the Owner in the event the Construction Contract (when offered by the Owner) and the bonds and proof of insurance are not within the time set forth above.

4. Extra Work:
   The undersigned agrees that should any change in the work or extra work be ordered, the allowance for overhead and profit contained shall be as scheduled below, but in no case shall it exceed 15%. The following applicable percentages shall be added to the extra work cost as defined by Article 12 of the General Conditions.
   A. Allowance to the Contractor for overhead and profit for extra work provided by his own forces _____%
   B. Allowance to the Contractor for overhead and profit for extra work provided by a subcontractor and supervised by the contractor _____%

5. The undersigned agrees to the following:
   A. To furnish all labor and materials as shown and specified.
   B. To complete the base bid including anticipated delay days due to inclement weather or muddy ground conditions in _____ calendar days.(Completion date as set by General Contractor.)
   C. To work _____ days per week.
   D. To start work _____ days after notice of award of contract.

6. Receipt is acknowledged of the following addends:
   No._____ Date:_____
   No._____ Date:_____

7. The Bidder attests and affirms that he and his subcontractors are skilled experienced in the use and interpretation of plans, specifications addenda, and related bid documents and has found them to be free of conflict and/or ambiguities and sufficient for bidding and construction purposes. Further, he has carefully examined the soils repairs and the site of the work, and through his own personal observations has satisfied himself as to the nature, location and requirement of the work; the character, quality and quantity of materials required; the difficulties likely to be encountered; the other items and/or conditions which may affect the satisfactory performance of the work. He has based his proposal solely on these documents and personal observation and has not relied in any way explanation or interpretation and or written from any source other than those written and issued by the Architect/Engineer.

8. The Bidder agrees that the owner has the right to accept or reject any or all bids and to waive all informalities.

9. The undersigned bidder, by signing and executing this bid, certifies and represents to the County of Hidalgo that Bidder has not offered, conferred or agreed to confer any pecuniary benefits, as defined by TEX. PENAL CODE ANN. S218, or any other thing or value, as consideration for the receipt of information or any specs treatment or advantage relating to this proposal; the Bidder also certifies, and presents, that the Bidder has not offered, conferred or agreed to confer any penicuniary benefit or other thing conferred of value as consideration not authorized by the law, the Bidder also certifies and represents that proposer has not received any information not available to other Bidders so as to give the undersigned a preferential advantage with respect to this bid; the Bidder further certifies and represents that Bidder has not violated any state, federal or local low, regulation or ordinance relating to bribery, improper influence, collusion or that the Bidder will not, in the future, offer, confer, or agree to confer any pecuniary benefit or other thing of value to any officer, trustee, agent, or employee of the County of Hidalgo in return for the person having exercised the person's official discretion, power or duty with respect to this proposal, the Bidder certifies and represents that is has now, and will not in the future, offer, confer, or agree to confer a

pecuniary benefit or other thing of value of any officer, trustee, agent, or employee of the County of Hidalgo in connection with information regarding this bid; the submission of this bid, the award of this bid or the performance, delivery or sale pursuant to this bid.

Respectfully submitted;

Proposer_____Signed by:_____
Name of Firm

Address_____ Name:_____

_____ Title:_____

_____ Date:_____

Phone No:_____ Fax No:_____

(Seal if bidder is a corporation.)

**END OF SECTION**

**SECTION 00400**

**SUPPLEMENTS TO BID FORMS**

**BID SECURITY**

Each bid must be accompanied by Bid Security in the amount of 5% of the largest possible data of the bid submitted.

The Bid Security may be by cash, certified check or a Bid Bond. The Bid Bond must be executed by the bidder as principal. The Bid Bond form and Security Company are subject to approval by the Owner and the Surety must comply with requirements noted in the General Conditions.

The bid securities will be returned promptly after the Owner and the accepted bidder have executed the Contract, or, if no award has been made within ninety (90) days after the date of the opening of bids, upon demand of the bidder anytime thereafter so long as he has not been notified of the acceptance of his bid.

END OF SECTION

**SECTION 00500**

**AGREEMENT FORM**

Agreement (Stipulated Price)

The Agreement will be executed on AIA Document Number A-101 “Standard Form of Agreement between Owner and Contractor”, 2007 edition. A sample of this form is attached to the County of Hidalgo “Front End Documents”.

**END OF SECTION**

## SECTION 00600

## BONDS AND CERTIFICATES

The Contractor shall furnish the following Bonds and Certificates to be delivered simultaneously with the executed contract:

a. Performance Bond
b. Labor and Materials Payment Bond
c. Certificates of Insurance-Provide on AIA document G-705

The Performance, Labor and Materials Bond shall be provided on Bonds which comply with Article 5160 of the revised Civil Statues of the state of Texas as amended by the Acts of the 64th Legislature 1975 and acts of the 65th Legislature, 1977.

The surety on such bonds shall be a surety company satisfactory to the Owner. See Article 7 of the Supplementary Condition.

Costs of the above stated bonds and insurance are to be included in the bid.

Attorneys-in-Fact who sign bonds must file with each bond a certified and effective dated copy of their Power of Attorney.

The Performance Bond shall guarantee the repair and maintenance of all defects due to faulty materials and workmanship that appear within one (1) year from date of substantial completion.

AIA Document A310-Bid Bond,
AIA Document A101 / Standard form of agreement between
Owner and Contractor 2007
Performance Bond, AIA Document A312
"Payment Bond"
AIA Document A201 General Conditions of the Contract for Construction 2007

Refer to the County Of Hidalgo "Front End Documents" for additional information.

END OF SECTION

**SECTION 01010**

**SUMMARY OF WORK**

## PART I GENERAL

### 1.01 SECTION INCLUDES

A. Contractor use of site.
B. Work Sequence.
C. Owner occupancy.

### 1.02 CONTRACTOR USE OF SITE

A. Limit use of site to allow:
   1. Owner occupancy. (County crews working on grading for adjacent park.)
   2. Work by Others and Works by Owner (A separate request for bid contract will be issued for construction work on amenities for the adjacent Sunflower Park.)
B. Construction Operations: Limited to areas noted on Drawings. (To be reviewed at Pre-Bid Meeting on Monday, March 24, 2014 at 3:00 P.M. at Hidalgo County Purchasing Department Conference Room, 2812 Business Hwy. 281, Edinburg, Texas, 75839.
C. Construction Operations outside of limits of construction shall be coordinated with Owner to minimize impact to Owner operations.
D. Utility Outrages and Shutdown: Coordination with Owner to avoid disruption of Owner's activities.

### 1.03 WORK SEQUENCE

A. Construct work in phases to accommodate Owner's occupancy requirements during the construction period, coordinate construction schedule and operations with such that all work outside of the limits of construction is scheduled to occur at times areas are not required for Owner operations.

### 1.04 OWNER OCCUPANCY

A. The Owner intends to occupy the entire campus area outside the limits of Construction.
B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operation.
C. Scheduled the work to accommodate this requirement.

**END OF SECTION**

**SECTION 01020**

**ALLOWANCES**

## PART I GENERAL

### 1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Each specification section listed in paragraph 1.04 of this section

### 1.02 CONTINGENCY ALLOWANCE

A. Use moneys in Contingency Allowance only on issuance of written directive by the architect.

B. Include in bid for inclusion in contract sum, Contingency Allowance of $10,000.00 (Ten Thousand Dollars.)

C. The contractor's base bid shall include overhead, profit, insurance and taxes for the Contingency Allowance. Contingency Allowance request shall include the following costs: (1) Products (2) Labor (3) Transportation (4) Equipment rental (5) other direct expenses.

D. Money remaining in allowance at the close of the project, is to be credited to Owner by Change Order, or transferred to other allowances as directed by Architect.

### 1.03 ALLOWANCE FOR PRODUCT USE

A. Purchase products under each Allowance as directed by the Architect.

B. Include the following amounts in bid, for inclusion in contract sum:
   1. Section 10400 Identifying Devices (Interior Room Signage): Allow lump sum of $2,000.00 (Two Thousand and no/100 Dollars).
   2. Landscaping Allowance: Allow lump sum of $25,000.00 (Twenty-fiveThousand and no/100 Dollars.) Breakdown: $20,000.00 for landscaping and $5,000.00 for Irrigation.

C. Amount of Allowances includes:
   1. Net cost of product
   2. Delivery and unloading at site
   3. Applicable taxes

D. In addition to amounts of allowances, include in bid, for inclusion in contract sum, contractors' cost for: (1) Handling at site, including uncrating and storage (2) Protection from damage from elements (3) Labor, installation and finishing (4) Other expenses required to complete installation (5) Contractors' overhead, profit and insurance.

E. Money remaining in allowance at close of project, credited to Owner by Change Order, or to other allowances as directed by Architect.

### 1.04 SELECTION OF PRODUCTS

A. Architect's duties:
   1. Consult with contractors in consideration of products and supplies to be used.
   2. Make selection, designate products to be used.
   3. Make recommendations for consideration by Owner.
   4. Notify Owner of any effect anticipated by selection of product or supplier under supplier consideration:
      a. Construction schedule.
      b. Contract sum.
   5. On notice of approval, enter Purchase Agreement with designated supplier.

**1.05 DELIVERY**

A. Contractor's responsibility:
   1. Arrange for delivery and unloading.
   2. Promptly inspect products for damage or defects.
   3. Submit claims for transportation damage.

**1.06 INSTALLATION**

A. Do not exceed allowance without Architect's approval.

B. Should actual approved purchase cost be more or less than specified amount of allowance, contract sum will be adjusted by change order equal to amount of difference.

C. For Products specified under unit other data to substantiate quantity actually used.

END OF SECTION

## SECTION 01027

## APPLICATION FOR PAYMENT

### PART I GENERAL

**1.01 SECTION INCULDES**

A. Procedures for preparation and submittal of Application for Payment from Contractor to the Architect.
B. Schedule of Values.

**1.02 RELATED SECTIONS**

A. Section 01300-Submittal procedures.
B. Section 01700-Contract Closeout: Final Payment.

**1.03 FORMAT**

A. AIA G702-Application and Certificate for Payment including continuation sheets when required, for submission to the Architect.
B. AIA G722 and G723-Project Application and project certificate for payment and project application summary for submission to the architect.
C. For each item, provide a column for listing: Item Number; Description of Work; Scheduled Value, Previous Applications: Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

**1.04 SCHEDULED OF VALUES**

A. Present required information of AIA G702 for scheduled of values in typewritten form or on electronic media printout.
B. Submit Schedule of Values itemizing work on contract drawings and itemizing work of each specification section and products found within.
C. Further breakout all significant products or components of contract work with the total value broken into material and labor categories. Organize categories in similar order to specifications.
D. Specifically show values for all work required in Specifications Section 01700.
E. Specifically show values for all allowances.
F. Schedule of value shall be approved prior to first application for payment

**1.05 PREPARATION OF APPLICATIONS**

A. Present required information in typewritten form or on electronic media printout.
B. Executed certification by signature of authorized officer.
C. Use data from approved Scheduled of Values. Provide dollar value in each column for each item for portion of work performed and for stored products.
D. List each authorized Change Order as an extension on continuation sheet, listing Change Order numbered and dollar amount as for an original item of work.
E. Prepare Application for Final Payment as specified in Section 01700.

**1.06 SUBMITTAL PROCEDURES**

A. Submit four copies of each Application for Payment (Form G702).
B. Submit an updated construction scheduled with each Application for Payment.
C. Submit under transmittal letter specified in Section 01300.
D. General Contractor will submit Form G722 and G723 to Architect.

**1.07 SUBSTANTIATING DATA**

A. When Architect requires substantiating information, submit data justifying dollar amounts in question.

B. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

**END OF SECTION**

**SECTION 01028**

**CHANGE ORDER PROCEDURES**

## PART I GENERAL

### 1.01 SECTION INCLUDES

A. Submittals
B. Documentation of change in Contract Sum/Price and Contract Time.
C. Change Procedures
D. Construction Change Authorization
E. Agreed Lump Sum Change Order
F. Agreed Unit Price Change Order
G. Field Cost of Plus Change Order
H. Execution of Change of Contractor Submittals.

### 1.02 RELATED SECTIONS

A. Section 01027-Applications for Payment: Payment applications.
B. Section 01300-Submittals: Work schedule
C. Section 01600-Materials and Equipment: Product options and substitutions.
D. Section 01700-Contract Close out: Project Record Documents.

### 1.03 SUBMITTALS

A. Submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's empty or Subcontractors of change to the Work.
B. Change Order Forms: AIA G701/CM Change Order.

### 1.04 DOCUMENTATION OF CHANGE IN CONTRACT SUM/PRICE AND CONTRACT TIME

A. Maintain detailed records of work done. Provide full information required for evaluation of proposed changes and to substantiate costs of changes in the Work.
B. Document each quotation for a change in cost or time with sufficient data allow evaluation of the quotation.
C. On request, provide additional data to support computations:
    1. Quantities of products, labor and equipment
    2. Taxes, insurance and bonds.
    3. Overhead and profit
    4. Justification for any change in Contract Time.
    5. Credit for deletions from Contract Time.
D. Support each claim for additional costs, and for work done on an actual field cost plus basis, with additional information:
    1. Origin and date of claim.
    2. Dates and times work was performed, and by whom.
    3. Time records and wages rates paid.
    4. Invoices and receipts for products, equipment, and subcontractors, similarly documented.

**1.05 CHANGE PROCEDURES**

A. The Architect will advise of minor change in the Work not involving an adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on AIA Form G710

B. The Architect may issue a Proposal Request, which includes a detailed description of a proposed change with supplementary or revised drawings and specifications. The General Contractor will prepare and submit a cost proposal within 20 days.

**1.06 CONSTRUCTION CHANGE AUTHORIZATION**

A. Architect may issue a document, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. The document will describe changes in the Work, and for subsequent inclusion in a Change in the Work, and will designate method of determining any change in Contract Sum/Price or Contract Time.

C. Promptly execute the change in Work.

**1.07 GREED LUMP SUM CHANGE ORDER**

A. For general construction work, the contractor will submit a breakdown consistent with his pay estimate breakdown, detailed with estimate quantities for both labor and materials. The contractor will be allowed the actual cost of materials, labor, payroll taxes and insurance, builder's risk insurance, bond and other itemized direct job site expenses as previously approved by the Owner. If the scope of construction is reduced by the Owner such as such that the general contractor will not incur cost for the deleted work, the general contractor will not credit those costs to the Owner, and retain only his overhead and profit. If extra work is requested by the Owner, the general contractor will be allowed to add to his actual costs a percentage as noted in paragraphs B and C below to cover his overhead and profit.

B. Actual Cost of work $500 or More:

Allowable mark-up percentage for overhead and profit will be 20 percent on the first $10,000, 15 percent on the next $10,000, and 10 percent on the balance over $20,000.

If subcontracted work is involved, the general contractor will include with this proposal a detailed breakdown for the subcontractor in accordance with the above requirements for the general contractor. The subcontractor will be allowed the same mark-up percentages as provided for the general contractor.

The general contractor will be allowed the following mark-up on subcontracted work: a maximum of 10 percent on the first $30,000, 7-1/2 percent on the next $30,000, and 5 percent on the balance over $60,000.

C. Actual Cost of Work Less Than $500:

Overhead and profit mark-up for extra work with an actual cost of less than $500 shall be negotiated. The contractor shall present to the Owner itemized evidence of reasonable expenditures and efforts necessitated by the changes in scope of work.

Payments of change orders in amounts less then $500 shall be deferred until one of the following conditions occur: (1) subsequent change orders increase accumulative total of $500 or more, or (2) ninety days expire after acceptance of the change order, or (3) final payment is made for the completion of work that has a period of less than 90 days.

**1.08 NEGOTIATED COST**

A. The contractor upon receipt of a written order signed by the Owner shall promptly proceed with the work involved. The cost of such work shall than be determined by the Architect on the basis or reasonable expenditures and savings of those performing the work attributable to the change, including, in the case on increase in the Contract Sum, a reasonable allowance experimenters and savings of those performing the work attributable to the change, including, in the case on increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, the contractor shall keep and present, in such form as the architect may prescribed, and itemized accounting together with appropriate supporting data for inclusion in a change order. Unless otherwise provided in the Contract in a change order. Unless otherwise provided in the Contract Documents, cost shall be limited to the following: cost of materials, and cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; worker's or workmen's compensation insurance; bond premiums; rental value of equipment and machinery; and the additional costs of supervision and field personnel directly attributable to the change.

**1.09 EXECUTION OF CHANGE ORDERS**

A. Execution of Change of Orders: Architect will issue Change Orders for signatures of parties as provided in the Condition of the Contract.

**1.10 CORRELATION OF CONTRACTORS SUBMITTALS**

A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum/Price.

B. Promptly revise progress schedules to adjust time for other items of work affected by the change, and resubmit.

C. Promptly enter change in Project Record Documents.

END OF SECTION

**SECTION 01039**

**COORDINATION AND MEETINGS**

## PART I GENERAL

### 1.01 SECTION INCLUDES

A. Coordination.
B. Field engineering.
C. Alteration project procedures.
D. Cutting and patching.
E. Pre-construction conference.
F. Progress meeting.
G. Pre-installation conferences.
H. Scheduling.

### 1.02 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work with various section, having, interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
C. Coordinate space requirements and installation of mechanical and electrical work, which are indicated diagrammatically on drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion.
F. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

### 1.03 FIELD ENFINEERING

A. Employ a Land Surveyor registered in the State of Texas and acceptable to the Owner.
B. Contractor to locate and protect survey control and reference points.
C. Control datum for survey is that established by Owner provided survey and as shown on Drawings.
D. Provide field engineering services. Establish elevations, lines and levels, utilizing recognized engineering survey practices.

### 1.04 ALTERATION PROJUCT PROCEDURES

A. Materials: As specified in product sections; match existing products and work for patching and extending work.
B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
C. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to specified conditions.
D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

E. Where new work abuts or aligns with existing, perform a smooth and even transition. Patch work to match existing adjacent work in texture and appearance.
F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
G. Where change of plane of V4 inch or more occurs, submit recommendation for providing a smooth transition for Architect review.
H. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfection.
I. Finish surfaces as specified in individual product sections.

**1.05 CUTTING AND PATCHING**

A. Employ skilled and experienced installer to perform cutting and patching.
B. Submit written request in advance of cutting or altering elements which affects:
   1. Structural integrity of element.
   2. Integrity of weather-exposed or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Visual qualities of sight-exposed elements.
   5. Work of Owner of separate contractor.
C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
   1. Fit the several parts together, to integrate with other Work.
   2. Uncover work to install or correct ill-timed work.
   3. Remove and replace defective and non-conforming work.
   4. Remove samples of installed Work for testing.
   5. Provide openings in elements of Work for penetrations of mechanical and electrical work.
D. Execute work by methods that will avoid damage to other Work, and provide proper surfaces to receive patching and finishing.
E. Cut rigid materials using masonry saw or core drill.
F. Restore work with new products in accordance with requirements of Contract Documents.
G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
J. Identify any hazardous substance or condition exposed during the Work to the Architect for decision or remedy.

**1.06 PRE-CONSTRUCTION CONFERENCE**

A. Architect will schedule a meeting after Notice to Proceed.
B. Attendance Required: Owner, Architect, Engineers, Contractor, and major Sub-contractors.
C. Agenda:
   1. Submission of executed bonds and insurance certificates.
   2. Distribution of Contract Documents.
   3. Submissions of list of Sub-Contractors, list of products, schedule of values, and progress schedule.
   4. Designation of personnel representing the parties in Contract, and the Architect.
   5. Procedures and processing of field decisions, submittals substitutions, applications for payments, proposal request, Change Orders, and contract closeout procedures.
   6. Scheduling.

## 1.07 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within seven days to Architect, Owner, participants, and those affected by decisions made.

C. Attendance Required: Job superintendent, major Sub-contractors and suppliers, owner, architect, as appropriate to agenda topics for each meeting.

D. Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Review of Application For Payment.
14. Other business relating to Work.

## 1.08 PRE-INSTALLATION CONFERENCES

A. When required in individual specification section, convene a pre-installation meeting at work site prior to commencing work of the Section.

B. Require attendance of parties directly affecting, or affected by, work of the specific Section.

C. Notify Architect seven days in advance of meeting date.

D. Prepare agenda, preside at conference, record minutes, and distribute copies within two days after conference to participants, with two copies to Architect.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

## 1.09 SCHEDULING

A. The General Contractor will produce an overall project schedule.

B. Bid Package contractors and suppliers will provide individual work schedule data and input to the construction Manager.

END OF SECTION

## SECTION 01040

## CONTRACT COORDINATION

### PART I GENERAL

**1.01 SECTION INCLUDES**

A. Coordination of work of contract.

**1.02 RELATED REQUIREMENTS**

A. Section 01005-Administrative Provisions.
B. Section 00145-Cutting and patching.

**1.03 DESCRIPTION**

A. Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.

**1.04 MEETINGS**

A. In addition to progress meetings specified in Section 01005, hold coordination meetings and pre-installation conferences with personnel and subcontractors to assure coordination of work.

**1.05 COORDINATIONS OF SUBMITTALS**

A. Schedule and coordinate submittals specified in section 01300.
B. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
C. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and affect of work of other sections.

**1.06 COORDINATION OF SPACE**

A. Coordinate use of project space and sequence of installation of mechanical, electrical and plumbing work that is indicated diagrammatically on drawings. Follow routings shown for pipes, ducts, and conduits as closely as practicable, with due allowance or available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
B. In finish areas conceal pipes, ducts and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

**1.07 COORDINATION OF CONTRACT CLOSEOUT**

A. Coordinate completion and clean up of work separate sections in preparation for substantial completion.
B. After owner occupancy of premises, coordinate access to site by various sections for correction of defective work not in accordance with contract documents, to minimize disruption of owner's activities.
C. Assemble and coordinate closeout submittals specified in Section 01700.

END OF SECTION

## SECTION 01045

## CUTTING AND PATCHING

### PART I GENERAL

**1.01 REQUIRMENTS INCLUDE**

A. Contractor shall be responsible for all cutting, fitting and patching, including attendant excavation and back fill, required to complete the work or to:
   1. Make its several parts fit together properly.
   2. Uncover portions of the work to provide for installation of ill-times work.
   3. Remove and replace defective work.
   4. Remove and replace work not conforming to requirements of contract documents.
   5. Remove samples of installed work as specified for testing.
   6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

**1.02 SUBMITTALS**

A. Submit a written request to Architect/Engineer well in advance of executing and cutting or alteration which effects:
   1. Work of the owner or any separate contractor.
   2. Structural value or integrity of any element of the project.
   3. Integrity or effectiveness of weather-exposed or moisture resistant elements or systems.
   4. Efficiency, operational life, maintenance or safety of operational elements.
   5. Visual qualities of sight-exposed elements.

B. Request shall include:
   1. Identification of the project.
   2. Description of the affected work.
   3. The necessity for cutting, alteration or excavation.
   4. Effect on work of owner or any separate contractor, or on structural or weatherproof integrity of project.
   5. Description of proposed work:
      a. Scope of cutting, patching, alteration, or excavation.
      b. Trades who will execute work.
      c. Products proposed to be used.
      d. Extent of refinishing to be done.
   6. Alternatives to cutting, when applicable.
   7. Cost proposal, when applicable.

C. Should conditions of the work or the schedule indicate a change of products from original installation, contractor shall submit request for substitution.

D. Submit written notice to Architect/Engineer designating the date and the time the work will be uncovered.

### PART 2 PRODUCTS

**2.01 MATERIALS**

A. Comply with specifications and standards for each specific product involved.

## PART 3 EXECUTION

### 3.01 INSPECTION

A. Inspect existing conditions of project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering of work, inspect conditions affecting installation of products, or performance of work.

C. Report unsatisfactory or questionable conditions to Architect/Engineer in writing; do not proceed with work until Architect/Engineer has provided further instructions.

### 3.02 PREPARATION

A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of work.

B. Provide devices and methods to protect other portions of project from damage.

C. Provide protection from elements for that portion of the project that may be exposed by cutting and patching work, and maintain excavations free from water.

### 3.03 PERFORMANCE

A. Execute cutting sand demolition by methods that will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.

B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.

C. Employ original installer or fabricator to perform cutting and patching for:
   1. Weather-exposed or moisture resistant elements.
   2. Sight-exposed finished surfaces.

D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finish.

E. Restore work that has been cut or removed; install new products to provide completed work in accordance with requirements of Contract Documents.

F. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes;
   1. For continuous surfaces, refinish to nearest intersection.
   2. For an assembly, refinish entire unit.

END OF SECTION

**SECTION 01050**

**FIELD ENGINEERING**

## PART I GENERAL

### 1.01 DESCRIPTION

A. Work included: Provide and pay for field engineering services required for project.
   1. Survey work required herein.
   2. Other professional engineering services required to execute Contractor's construction methods.

B. Related Work Described Elsewhere:

| | | |
|---|---|---|
| 1. | Earthwork | Section 02200 |
| 2. | Concrete Footings | Section 02300 |
| 3. | Concrete Walks | Section 02510 |
| 4. | Asphaltic Concrete Paving | Section 02513 |
| 5. | Portland Cement Concrete Paving | Section 02515 |
| 6. | Concrete Curbs and Gutters | Section 02528 |

### 1.02 QUALIFICATIONS OF SURVEYOR

A. Qualified land surveyor registered in state in which project is located.
B. Approved in writing by Architect.

### 1.03 SURVEY REFERENCE POINTS

A. Existing basic horizontal and vertical control points for project are those designated on the drawings.
B. Location: Verify and protect control points (bench marks) prior to beginning work and preserve permanent reference points during construction.

### 1.04 PROJECT SURVEY REQUIREMENTS

A. Establish minimum of two (2) permanent bench marks on site, referenced to survey control points. Record locations, with horizontal and vertical data, on the Project Record Documents as per Section 01720.
B. Establish lines and levels, locate and layout, by instrumentation.
   1. Site improvements:
      a. Stakes for grading, fill and topsoil replacement.
      b. Utility lines slopes and invert elevations.
      c. Pavement and curb elevation for all driveways and parking areas.
   2. Batter board for structures.
   3. Building foundations, column locations and floor elevations.
   4. Controlling lines and levels required for mechanical and electrical trades.
C. Establish all external corner locations for structures at same time. Verify setbacks and distances to property lines with information given on drawings.
D. Promptly notify architect of any errors or discrepancies encountered; await interpretation prior to proceeding with work.

### 1.05 RECORDS

A. Maintain complete, accurate log of all control points and survey work as it progresses.

### 1.06 SUBMITTALS

A. Submit documentation to verify accuracy of field engineering work upon Architects request.
B. Submit certification signed by surveyor certifying that elevations and locations are in conformance, or non-conformance with the Contract Documents.

END OF SECTION

## SECTION 01090

## REFERENCE STANDARDS

### PART I GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Applicability of reference standards.
B. Provisions of reference standards at site.
C. Acronyms used in contract documents for reference standards. Source of reference standard.

### 1.02 RELATED REQUIREMENTS

A. General and supplementary conditions of the contract.

### 1.03 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or federal standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
B. The date of the standard is that in effect as of the Bid date, or date of Owner-contractor agreement when there are no bids, except when a specific date is specified.
C. When required by individual specification section, obtain coy of standard. Maintain copy at job site during submittals, planning, and progress of the specific work, until substantial completion.

### 1.04 SCHEDULE OF REGERENCES

AA Aluminum Association
818 Connecticut Avenue, N. W.
Washington, DC 20006

AABC Associated Air Balance Council
1000 Vermont Avenue, N. W.
Washington, DC 20001

ACI American Concrete Institute
Box 19150
Redford Station
Detroit, MI 48219

ADC Air Diffusion Council
435 North Michigan Avenue
Chicago, IL 60611

AGC Associated General Contractors of America
1957 E> Street, N. W.
Washington, DC 20006

AI Asphalt Institute
Asphalt Institute Building
College Park, MD 20740

AITC American Institute of Timber Construction
333 W> Hampden Avenue
College Park, MD 20240

| | |
|---|---|
| AISC | American Institute and Steel Construction<br>1221 Avenue of the Americas<br>New York, NY 10020 |
| AISI | American Iron and Steel Institute<br>1000 16th Street, N. W.<br>Washington, DC 20036 |
| AMCA | Air Movement and Control Association<br>30 West University Drive<br>Arlington Heights, IL 60004 |
| ANSI | American National Standards Institute<br>1430 Broadway<br>New York, NY 10018 |
| APA | American Plywood Association<br>Box 11700<br>Tacoma, WA 98411 |
| ARI | Air Conditioning and Refrigeration Institute<br>1815 North Fort Myer Drive<br>Arlington, VA 22209 |
| ASHRAE | American Society of Heating, Refrigeration<br>And Air Conditioning Engineers<br>345 East 47th Street<br>New York, NY 10017 |
| ASME | American Society of Mechanical Engineers<br>345 East 47th Street<br>New York, NY 10017 |
| ASPA | American Sod Producers Association<br>Association Building<br>Ninth and Minnesota<br>Hastings, NE 68901 |
| ASTM | American Society for Testing And Materials<br>1916 Race Street<br>Philadelphia, PA 19103 |
| AWWA | American Water Works Association<br>6666 West Quincey Avenue<br>Denver, Colorado 80235 |
| AWI | Architectural Woodwork Institute<br>2310 South Walter Reed Drive<br>Arlington, VA 22206 |
| AWPA | American Wood-Preservers Association<br>7735 Old Georgetown Rd.<br>Bethesda, MD 20014 |

| | |
|---|---|
| AWS | American Welding Society<br>2501 NW 7th Street<br>Miami, FL 33125 |
| CLFMI | Chain Link Fence Manufacturers Institute<br>1101 Connecticut Avenue, N.W.<br>Washington, DC 20036 |
| CRSI | Concrete Reinforcing Steel Institute<br>180 North LaSalle Street<br>Suite 2110<br>Chicago, IL 60601 |
| EJMA | Expansion Joint Manufacturers Association<br>708 Westchester Avenue<br>White Plains, NY 10604 |
| FM | Factory Mutual System<br>1151 Boston-Providence Turnpike<br>Norwood, MA 02062 |
| FS | Federal Specification<br>General Services Administration<br>Specifications and Consumer Information<br>Distribution Section (WFSIS)<br>Washington Navy Yard, Bldg. 197<br>Washington, DC 20407 |
| GA | Gypsum Association<br>1603 Orrington Avenue<br>Evanston, IL 60201 |
| IEEE | Institute of Electrical and Electronics Engineers<br>345 East 47th Street<br>New York, NY 10017 |
| IMIAC | International Masonry Industry All-Weather Council<br>International Masonry Institute<br>823 15th Street, N.W.<br>Washington, DC 20005 |
| NEBB | National Electrical Manufacturers' Association<br>8224 Old Courthouse Road<br>Vienna, VA 22180 |
| NEMA | National Electrical Manufacturer's Association<br>2101 L Street, N.W.<br>Washington, DC 20037 |
| NFPA | National Fire Protection Association<br>Battery March Park<br>Quincy, MA 02269 |

| | |
|---|---|
| PCA | Portland Cement Association<br>5420 Old Orchard Road<br>Skokie, IL 20076 |
| PS | Product Standard<br>U.S. Department of Commerce<br>Washington, DC 20203 |
| SDI | Steel Door Institute<br>712 Lakewood Center North<br>Cleveland, OH 44107 |
| TCA | Tile Council of America, Inc.<br>Box 326<br>Princeton, NJ 08540 |
| UL | Underwriters' Laboratories, Inc.<br>333 Pfingston Road<br>Northbrook, IL 60062 |

END OF SECTION

**SECTION 01100**

**ALTERNATIVES**

**PART I GENERAL**

**1.01 DESCRIPTION**

A. Work included. Certain Alternates have been established as described herein. These are to allow the Owner to:
   1. Compare costs where alternate materials and methods may be used on the project.
   2. Make a decision concerning Alternate materials and methods prior to awarding the Contract.

B. Related work described elsewhere.
   1. Pertinent Section of the Specifications described the materials and methods required under the Alternate.
   2. The method for stating the proposed Contract Sum in described on the Bid Form.

**1.02 SUBMITTALS**

A. Indicate on the Bid Form a proposal for the Alternate.

B. In no figure is indicated for the Alternate, the Alternate may be accepted at no change in Base Bid.

C. Do not submit alternates other than those described in this section

D. Do not submit statements qualifying alternates.

**1.03 PRODUCT HANDLING**

A. If the Owner elects to accept the alternate(s), make all modifications required in furnishing and installing of the Alternate(s) to approval of Architect and at no Additional Cost other than proposed on Bid Form.

**PART 2 PRODUCTS**

**2.01 ALTERNATE NO.1.**

A. Provide all labor, materials, equipment, etc. for providing and installing the Generator and all related accessories.

**ALTERNATE NO.2.**

B. Provide all labor, materials, equipment, etc. for providing and installing the asphalt and concrete paving; as per the civil engineering drawings.

**PART 3 EXECUTION**

**3.01 ADVANCE COORDINATION**

A. Immediately after award of Contract, advise necessary subcontractors and suppliers as to nature and extent of alternates, involved changes caused by Alternate Selection.

**3.02 SURFACE CONDITIONS**

A. Prior to installation to alternate, verify that work has been modified as necessary to accept the installation and that items may be installed in complete accordance with their manufacturer's current recommendations; in the event of discrepancy, notify Architect and proceed as directed.

END OF SECTION

## SECTION 01300

## SUBMITTALS

### PART I GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Procedures.
B. Schedule of Values.
C. Shop Drawings.
D. Product Data. Samples.
E. Manufacturer's Certificates.

### 1.02 RELATED REQUIREMENTS

A. Section 01005-Administrative Provisions.
B. Section 01600-Material and equipment: Manufacturers Instructions.

### 1.03 PROCEDURES

A. Deliver submittals to Architect/Engineer at address listed on project manual.
B. Transmit each item under AIA form 810. Identify Project Contractor, Subcontractor, Major Supplier, Identify pertinent drawing sheet and detail number, and specification section number, as appropriate. Identify deviations from Contract documents. Provide space for Contractor and Architect/Engineer review stamps. General Contractor to review submittals prior to submission and place signature on company review stamp.
C. Submit Initial progress schedules in bar chart form showing start and completion of all trades or sections of the work and schedule of values in duplicate within 15 days after award of contract. After review by Architect/Engineer revise and resubmit as required. Submit revised schedules with each application for payment, reflecting changes since previous submittal. Progress schedules shall be updated monthly to show project status.
D. Comply with progress schedule for submittals related to work progress. Coordinate submittal of related items.
E. After Architect/Engineer review of submittal, revise and resubmit as required. Identifying changes made since previous submittal. For any submittal reviewed more than twice the architect will submit a fee for additional services to the owner with the fees being deducted from the general contractor's contract for construction.
F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

### 1.04 CONSTRUCTION PROGRESS SCHEDULE

A. Submit horizontal bar chart with separate bar for each major trade or operation identifying first work of each week.
B. Show complete sequence of construction by activity. Identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of work as of time of each progress application for payment.
C. Show submittal dates required for shop drawings, product data, and samples and product delivery dates, including those furnished by Owner and those under allowances.

### 1.05 SCHEDULE OF VALUES

A. Submit typed schedule on AIA form G703: Contractor's standard form or media-driven print out will be considered on request.
B. Format: Table of contents of this project manual. Identify each line item with number and title of the major specification sections.

C. Include in each line item amount of allowances specified. For unit cost allowances, give quantities measured from contract documents multiplied by the unit cost equal to the total for the item.
D. Include in each line item a directly proportional amount of contractor's overhead and profit.
E. Revise schedule to list change orders, for each application for payment.

**1.06 SHOP DRAWINGS**

A. Submit the number of opaque reproductions which contractor requires, plus two copies, which will be retained by Architect/Engineer.
B. Timeline: Normal review time for each consultant is as follows; Architect – one week, Structural Engineer – two weeks, Civil Engineer – two weeks, MEP Engineer – four weeks (if submitted all at once); two weeks (each) if submitted in sections.

**1.07 PRODUCT DATA**

A. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to work. Include manufacturer's installation instructions when required by the specification section.
B. Submit the number of copies which contractor requires, plus two copies, which will be retained by Architect/Engineer.

**1.08 SAMPLES**

A. Submit full range of manufacturer's standard colors, textures, and patterns for Architect/Engineer's selection. Submit samples of selection of finishes within 30 days after date of contract. Architect will not allow time extensions or substitutions for materials not ordered within first thirty days of construction and later found not available for the project.
B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
C. Include identification on each sample, giving full information.
D. Submit the number specified in respective specification section; one will be retained by Architect/Engineer. Reviewed samples, which may be used in the work, are indicated in the specification section.

**1.09 MANUFACTURER'S CERTIFICATE**

A. Submit certificates, in duplicate, in accordance with requirements of each specification section.

END OF SECTION

## SECTION 01340

## SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

### PART I GENERAL

**1.01 SUMMARY**

A. Submit to Architect/Engineer, Shop Drawings, Product Data and Samples required by Specification Sections.

B. Related Requirements Specified Elsewhere:

1. Construction Schedule: Section 01310
2. Testing Laboratory Services: Section 01400
3. Project Record Documents: Section 01720

C. Prepare and submit, with Construction Schedule, a separate schedule listing dates for submission and review of Shop Drawings. Product Data and Samples will be needed for each product.

**1.02 SHOP**

A. Original drawings prepared by Contractor, Subcontractor, Supplier or Distributor, which illustrate some portion of the work; showing fabrication, layout, setting or erection details. No portion of the Contract Documents shall be reproduce for use as a part of the Shop Drawings.

B. Prepared by a qualified detailed.

C. Identify details by reference to sheet and detail numbers shown on Contract Drawings.

D. Reproductions for submittals: Reproducible Transparency with one Opaque Diazo Print.

**1.03 PRODUCT DATA**

A. Manufacturer's Standard Schematic Drawings:

1. Modify drawings to delete information not applicable to project.

B. Manufacturer's Catalog Sheets, Brochures, Diagrams, Schedules, Performance Charts, Illustrations and other descriptive data.

1. Clearly mark each copy to identify pertinent materials, products or models.
2. Show dimensions and clearances required.
3. Show performance characteristics and capacities.
4. Show wiring diagrams and controls.

**1.04 SAMPLES**

A. Physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.

B. Office Samples of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of product or material.
2. Full range of color samples.

C. Field Samples and Moch-Ups:

1. Erect at Project Site at location acceptable to Architect.
2. Construct each complete including work of all trades required in finished work.

**1.05 CONTRACTOR'S RESPONSIBILITIES**

A. Review and Approve Shop Drawings, Product Data and samples prior to submission and so indicate over his signature.

B. Verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.

C. Coordinate submittals with requirements of work and Contract Documents.
D. Contractor's responsibility for deviations in submittals is not relieved by Architect/Engineer's review of submittal.
E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect/Engineer's review of submittals, unless Architect/Engineer gives written acceptance of specific deviations.
F. Notify Architect/Engineers, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
G. Begin no work which required submittals until return of submittals with Architect/Engineer's stamp and initials or signature indicating review.
H. After Architect/Engineer's review, distribute copies.

**1.06 SUBMISSION REQUIREMENTS**

A. Schedule submissions at least ten days before dates reviewed submittals will be needed.
B. Shop Drawings: Submit one (1) Reproducible Transparency and one (1) Opaque Print.
C. Product Data: Submit number of copies of Product Data which Contractor requires for distribution plus two (2) copies which will be retained by Architect/Engineer.
D. Samples: Submit number of Samples specified in each Specification Section.
E. Accompany submittals with transmittal letter in duplicate, containing:
    1. Date
    2. Project Title and Number
    3. Contractor's name and address
    4. The number of each Shop Drawing, Product Data and Sample Submitted
    5. Notification of Deviations from Contract Documents
    6. Other pertinent data
F. For Work designed by consultants, make submission directly to consultant, and simultaneously submit duplicate of transmittal letter to Architect/Engineer.
G. Submittals shall include:
    1. Date and Revision Dates
    2. Project Title and Number
    3. The names of:
        a. Architect/Engineer
        b. Contractor
        c. Subcontractor
        d. Supplier
        e. Manufacturer
        f. Separate detailed when pertinent
    4. Identification of product or material
    5. Relocation to adjacent structure or materials
    6. Field dimensions, clearly identified as such
    7. Specification Section number
    8. Applicable Standards, such as ASTM or Federal Specification
    9. A blank space 3" x 3" for the Architect/Engineer's stamp
    10. Identification of deviations from Contract Documents.
    11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract Documents.
H. If Shop Drawings which have been previously submitted for review are resubmitted, they shall clearly note any changes or additions that have been made to the previous submittal. After two reviews, General Contractor will be charged for review by the office of the Architect; fees to be deducted by Owner directly from the Contract for Construction.

**1.07 DISTRIBUTION OF SUBMITTALS AFTER REVIEW**

A. Distribute copies of Shop Drawings and Product Data which carry Architect/Engineer's/Consultant's stamp to:
    1. Contractor's File

2. Job-Site File
3. Record Documents File
4. Other Prime Contractors
5. Subcontractors
6. Supplier
7. Fabricator
8. Architect (if shop drawings are submitted directly to Consultant)

**1.08 ARCHITECT/ENGINEER'S DUTIES**

A. Review Submittals with reasonable promptness. Architect – one week; Structural Engineer – two weeks, Civil Engineer – two weeks, MEP Engineer – four weeks; two weeks (each) if submitted in sections.

B. Review for:
   1. Design concept
   2. Information given in Contract Documents

C. Review of Separate item does not constitute review of an assembly in which item functions.

D. Affix stamp and initials or signature certifying review of submittal.

E. Return submittals to contractor for distribution.

END OF SECTION

SECTION 01400

QUALITY REQUIREMENTS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Owner, or authorities having jurisdiction are not limited by provisions of this Section.

### 1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Owner.

C. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades-people of the corresponding generic name.

I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

## 1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Owner for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Owner for a decision before proceeding.

## 1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.

6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

## 1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

F. Factory-Authorized Technical Representative Qualifications: An authorized, full-time technical specialist employee representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of roofing systems that are similar in material, design, and extent to those indicated for this Project.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
   1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
   2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
   3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
   1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
      a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
   2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
   3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
   4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
   5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a manufacturer-authorized technical representative to inspect field-assembled components. Report results in writing as specified in Division 1 Section "Submittal Procedures."

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Owner and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   1. Notify Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections, including minor cutting and patching.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Facilities for storage of test samples.
   5. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
   1. Date test or inspection was conducted.
   2. Description of the Work tested or inspected.
   3. Date test or inspection results were transmitted to Owner.
   4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Owner's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
   2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

## SECTION 01410

## TESTING LABORATORY SERVICES

### PART 1 GENERAL

#### 1.1 DESCRIPTION

A. Work included: During progress of work, the Owner may require testing to be performed to determine that materials provided meet specified requirements; such testing includes, but in not necessarily limited to:
   1. Soil Compaction
   2. Normal Weight Concrete

B. Related Work Described Elsewhere: Requirements for testing may be described in various specification sections; where no testing requirements are described but Owner decides it is required, testing shall be performed under current pertinent testing standards.

C. Testing Laboratory: The Testing Laboratory will be selected by the Owner.

#### 1.2 QUALITY ASSURANCE

A. Qualifications of testing laboratory: The laboratory will be qualified in accordance with ASTM E-329-70 “Recommended Practice for inspection and Testing Agencies for Concrete and Steel used in Construction.”

B. Codes and standards: Testing: In accordance with pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

#### 1.3 PRODUCT HANDLING

A. Promptly process and distribute test reports and related instructions to assure necessary retesting and/or replacement of materials with least possible delay in work.

### PART 2 PRODUCTS

#### 2.1 PAYMENT FOR TESTING SERVICES

A. Initial Services: To be paid for by the Owner.

B. Retesting: When initial tests indicate non-compliance with Contract Documents, subsequent retesting shall be performed by the same laboratory and costs thereof deducted by the Owner for the Contract Sum.

#### 2.2 CODE COMPLIANCE TESTING

A. Inspections and tests required by codes or ordinances, or by plan approval authority, and made by a legally constituted authority, shall be the responsibility of, and shall be paid for, by the Contractor and not borne by the Owner

#### 2.3 CONTRACTOR’S CONVENIENCE TESTING

A. Inspection or testing performed exclusively for the Contractor’s convenience shall be the sole responsibility of the Contractor.

### PART 3 EXECUTION

#### 3.1 COOPERATION WITH TESTING LABORATORY

A. Representatives of testing laboratory shall have access to work at all times; provide facilities for such access in order that laboratory may properly perform it’s function.

#### 3.2 SCHEDULES FOR TESTING

A. Establishing Schedule:

1. Determine with laboratory, time required to perform tests and issue findings.
2. Provide required time in construction schedule.

B. Revising Schedule: Coordinate changes of schedule with laboratory as required. Testing Laboratory shall provide a 24-hour phone number to enable the Contractor to revise the schedule at times other than regular business hours.

C. Adherence to Schedule: When laboratory is prevented from testing or taking specimens according to the determined schedule due to incompleteness of work, extra costs attributable to delay may be back-charged to Contractor and not be borne by Owner.

**3.3 TAKING SPECIMENS**

A. Testing Laboratory shall perform the following services:
1. Take samples and specimens as directed.
2. Furnish sampling equipment and personnel.
3. Deliver specimens and samples to laboratory.

END OF SECTION

## SECTION 01500

## CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

### PART I GENERAL

**1.01 REQUIREMENTS INCLUDED**

A. Electricity, Lighting.
B. Heat, Ventilation.
C. Telephone services.
D. Water
E. Sanitary Facilities.
F. Barriers.
G. Cleaning during Construction.
H. Project Identification.
I. Field offices and sheds.
J. Removal

**1.02 RELATED REQUIREMENTS**

A. Section 01005 Administrative Provisions.

**1.03 ELECTRICITY, LIGHTING**

A. Provide service required for construction operations, with branch wiring and distributions boxes located to allow services and lighting by means of construction operations.
B. Provide lighting for construction operations.

**1.04 HEAT, VENTILATION**

A. Provide as required to maintain specified conditions for construction operations, to protect materials and finishes from damages due to temperature or humidity.
B. Prior to operation of permanent facilities for temporary purposes. Verify that installation is approved for operation, and that filters are in place.
C. Provide ventilation of enclosed areas to cure materials, to dispare humidity, and to prevent accumulations of dust, fumes, vapors, or gases.

**1.05 TELEPHONE SERVICES**

A. Provide telephone, fax and internet service to field office.

**1.06 WATER**

A. Provide water services required for construction operations. Extended branch piping with outlets located so that matter is available by use of hoses.

**1.07 SANITARY FACILITIES**

A. Provide and maintain required facilities and enclosures.

**1.08 BARRIERS**

A. Provide as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

**1.09 CLEANING DURING CONSTRUCTION**

A. Control accumulation of waste materials and rubbish; periodically dispose of off-site.
B. Clean interior areas prior to start of finish work; maintain areas free of dust and other contaminants during finishing operations.

**1.10 PROJECT IDENTIFICATION**

A. Provide 8' x 4' project identification sign of wood frame and exterior grade plywood construction, painted, with exhibit lettering by professional sign painter, to Architect, professional consultants, and contractor.
B. Erect on site at location established by Architect and owner.
C. Allow no other sign to be displayed.
D. Information to be supplied by Architect.

**1.11 FIELD OFFICES AND SHEDS**

A. Office: Weather-tight, with lighting, electrical outlets, heating, and ventilation equipment.
B. Storage sheds for tools, materials, and equipment: Weather tight with adequate space for organized storage and access, and lighting for inspection off stored materials.

**1.12 REMOVAL**

A. Remove temporary materials, equipment, services and construction prior substantial completion inspection.
B. Clean and repair damages caused by installations to a depth of 2 feet; grade site as indicated. Restore existing facilities used during construction to specified, or to original, condition.

END OF SECTION

## SECTION 01600

## MATERIAL AND EQUIPMENT

### PART I GENERAL

**1.01 REQUIREMENTS INCLUDED**

A. Products.
B. Workmanship.
C. Manufacturers' Instruction.
D. Transportation and handling.
E. Storage and protection.
F. Substitutions and product options.

**1.02 RELATED REQUIREMENTS**

A. Section 01005-Administrative Provisions.
B. Section 01090-Reference Standards.
C. Section 01300-Submittals: Submittal of Manufacturers Certificates.

**1.03 PRODUCTS**

A. Products include material, equipment, and systems.
B. Comply with specifications and referenced standards as minimum requirements.
C. Components required to be supplied in quantity within a specification section shall be the same, and shall be interchangeable.

**1.04 WORKMANSHIP**

A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B. Perform work by persons qualified to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

**1.05 MANUFACTURER'S INSTRUCTIONS**

A. When work is specified to comply with manufacturers' instructions, submit copies as specified in Section 01300, distribute copies to persons involved, and maintain one set in field office.
B. Perform work in accordance with details of instructions and specified requirements. Should a conflict exist between specifications and instructions, consul with Architect/Engineer.

**1.06 TRANSPORTATION AND HANDLING**

A. Transport products by methods to avoid product damage; deliver in an undamaged condition in manufacturer unopened containers or packing, dry.
B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

**1.07 STORAGE AND PROTECTION**

A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures: maintain within temperature and humidity ranges required by manufacturer's instructions.

B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.

E. After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.

**1.08 PRODUCTS OPTIONS**

A. Within 30 days after date of contract, submit complete list of major products proposed, with name of manufacturer, trade name.

B. Products specified by naming only on manufacturer: no option.

**1.09 SUBSTITUTIONS**

A. During bidding, Architect/Engineer will consider requests from Prime bidders for substitutions received at least (7) days prior to bid date: requests received after that time will not be considered. No substitutions will be granted after the award of contract.

B. Document each request with complete data substantiating compliance of proposed substitution with contract documents.

C. Request constitutes a representation that contractor:

1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
2. Will provide the same warranty for substitution as for specified product.
3. Will coordinate installation and make other changes which may be required for work to be complete in all respects.
4. Waives claims for additional cost, which may subsequently become apparent.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of contract documents.

E. Architect/Engineer will determine acceptability of proposed substitution, and will notify contractor of acceptance or rejection in writing within a reasonable time.

END OF SECTION

**SECTION 01640**

**SUBSTITUTIONS AND PRODUCT OPTIONS**

## PART 1 GENERAL

### 1.01 PRODUCT LIST

A. Within 30 days after date of Contract submit to Architect/Engineer five copies of complete list of all products which are proposed for installation. Request for substitutions shall be made in accordance with Paragraph 1.03.

B. Tabulate list by each specification section.

C. For products specified under Reference Standards, include with listing of each product:
   1. Name and Address of Manufacturer
   2. Trade Name
   3. Manufacturer's Data
   4. Model or Catalog Designation

### 1.02 CONTRACTOR'S OPTIONS

A. For products specified only by Reference Standards, select any product meeting standards, by any manufacturer.

B. For products specified by naming several products or manufacturers, select any product and manufacturer named.

C. For products specified by naming one or more products, but indicating the option of selecting equivalent products e.g., by stating "or approved equal" after specified product, Contractor must submit request as required for substitution, for any product not specifically named.

D. For products specified by naming only one product and manufacturer, there is no option, and substitution will be allowed by approval prior to bidding only.

### 1.03 SUBSTITUTIONS

A. During bidding, Architect/Engineer will consider written requests from prime bidders for substitutions, received at least **Ten (10) Days Prior To Bid Date:** requests received after that time will not be considered. No substitutions will be granted after the award of contract.

B. Submit five copies of request for substitution, include in request:
   1. Complete data substantiating compliance of proposed substitution with Contract Documents.
   2. For products:
      a. Product identification, including manufacturer's name and address.
      b. Manufacturer's literature:
         1.) Product Description
         2.) Performance and Test Data
         3.) Reference Standards
      c. Samples
      d. Name and addresses of similar projects on which products were used, and date of installation.
   3. For construction methods:
      a. Detailed description of proposed method.
      b. Drawings illustrating methods.
   *4. Itemized comparison of proposed substitution with product or method specified.*
   5. Data relating to changes in construction schedule.
   6. Relation to separate contracts.
   7. Accurate cost data on proposed substitution in comparison with product or method specified, including presenting credits to the Owner, where applicable.

C. In making request for substitution, Bidder/Contractor represents:
   1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
   2. He will provide the same guarantee for substitution as for product or method specified.
   3. He will coordinate installation of accepted substitution in work, making such changes as may be required for work to be complete in all respects.
   4. He waives all claims for additional costs related to substitution, which consequently becomes apparent.
   5. Cost data is complete and included all related costs under his contract or other contracts, which maybe affected by the substitution.
   6. He will reimburse the Owner for any redesign cost by the Architect/Engineer for accommodation of the substitution.

D. Substitutions **Will Not** be considered if:
   1. They are indicated or implied on Shop Drawings or Project Data Submittals without formal request submitted in accordance with Paragraph 1.03.
   2. Acceptance will require substantial revision of Contract Documents.

END OF SECTION

## SECTION 01700

## CONTRACT CLOSE-OUT

### PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Close-out Procedures.
B. Final cleaning.
C. Project record documents.
D. Operation and Maintenance data.
E. Systems Demonstration.
F. Warranties and Bonds.

### 1.02 RELATED REQUIREMENTS

A. Conditions of the contract: Fiscal provisions, legal submittals, and other administrative requirements.
B. Section 01005-Administrative Provisions.
C. Section 01500-Construction Facilities and Temporary Controls.

### 1.03 CLOSE-OUT PROCEDURES

A. Comply with the procedures stated in the General Conditions of the Contract for issuance of Certificate for Substantial Completion.
B. When Contractor considers work has reached final completion, submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.
C. In addition to submittals required by the Conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted contract sum, previous payments, and remaining sum due.
D. Architect/Engineer will issue a final change order reflecting approved adjustments to contract not previously made by Change Order.

### 1.04 FINAL CLEANING

A. Execute prior to final cleaning.
B. Clean interior and exterior surfaces to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition, clean roofs, gutters, down spouts, and drainage systems.
C. Clean site; sweep paved areas, rake clean other areas.
D. Remove waste and surplus materials, rubbish, and construction facilities from the project and from the site.

### 1.05 PROJECT RECORD DOCUMENTS(Final payment dependent upon submission)

A. Maintain a Job Site, one copy of:
    1. Contract Drawings
    2. Specifications
    3. Addenda
    4. Reviewed Shop drawings
    5. Change Orders
    6. Other Modifications to Contract
    7. Field Test Records
B. Store Documents in temporary Field Office, apart from Documents used for construction.
C. Provide files and racks for storage of Documents.

D. Maintain Documents in clean, dry, legible condition.
E. Do not use Record Documents for construction purposes.
F. Make Documents available at all times for inspection by Architect/Engineer and Owner.
G. Maintain record even though no changes are made from original documents.
H. Provide colored pencil for marking, conforming to follow color code:
   1. Red for Architectural Work
   2. Blue for Structural Work
   3. Green for Plumbing Work
   4. Orange for HVAC Work
   5. Brown for Electrical Work
   6. Black for other written notations
I. Use colored pencils compatible with mylar sepia.
J. Label each document "Project Record" in 2 high printed letters.
K. Keep Record Documents current.
L. Do not permanently conceal any work until required information has been recorded.
M. Contract Drawings: legibly mark to record actual construction:
   1. Depth of various elements of foundation in relation to First Floor level.
   2. Horizontal and Vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
   3. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
   4. Field change of dimension and detail.
   5. Changes made by change order or written directive.
   6. Details not on original Contract Drawings.
N. Specification and Addenda: legible mark up each Section to record:
   1. Manufacturer, Trade Name, Catalog Number, and Supplier of each product and item of equipment actually installed.
   2. Changes made by change order or written directive.
   3. Other matters not originally specified.
O. Shop Drawings: Maintain as Record Documents: legibly annotate following drawings to record changes made after review:
   1. Structural Steel
   2. Reinforcing Steel
   3. Mill Work
P. At completion of project, transfer all Project Record Data to one complete set of mylar sepias and deliver one complete set of mylar sepias of all drawings and one set of specifications containing all changes and modifications that occurred during construction to the Architect. The cost of printing the mylar sepias shall be paid by the Contractor.
Q. Accompany submittal with transmitted letter, in duplicate, containing:
   1. Date
   2. Project Title and Number
   3. Contractor's Name and Address
   4. Title and Number of Each Record Document
   5. Certification that each Document as submitted is complete and accurate.
   6. Signature of Contractor, or his Authorized Representative.

**1.06 OPERATION AND MAINTENANCE DATA(Final payment upon submission)**

A. Provide data for:
   1. Mechanical equipment and controls-Division 15.
   2. Electrical equipment and controls-Division 16.
B. Submit three sets prior to final inspection, bound in 8 ½" x 11" three ring side binders with durable plastic covers.
C. Part 1: Directory, listing names, addresses and telephone numbers of Architect/Engineer, General Contractor and sub-contractors.

D. Part 2: Operation and maintenance instructions arranged by specification division. For each list:
   1. Appropriate design criteria.
   2. List of equipment.
   3. Parts list.
   4. Operating instructions.
   5. Maintenance instructions, equipment.
   6. Maintenance instructions, finishes.
   7. Shop drawings and product data.
   8. Warranties.

**1.07 SYSTEMS DEMONSTRATION**

A. Prior to final inspection, demonstrate operation of each system to Architect/Engineer and Owner.

B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

**1.08 WARRANTIES AND BONDS**

A. Provide duplicate, notarized copies. Execute contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.

B. Submit material prior to final Application for Payment. For equipment put into use with Owner's permission during construction, submit within 10 days after first operation. For items of work delayed materially beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

END OF SECTION

**SECTION 01710**

**CLEANING**

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. Related Requirements Specified Elsewhere:
   1. Cutting and Patching:Section 01070
   2. Cleaning for Specific Products or Work: Specification Section for that Work.

B. Maintain premises and public properties free from accumulation of waste, debris, and rubbish, caused by operations.

C. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight exposed surfaces: leave project clan and ready for occupancy.

### 1.02 SAFETY REQUIREMENTS

A. Standards: Maintain project in accord with applicable safety and insurance standards.

B. Hazard Controls:
   1. Store volatile wastes in covered metal containers, and remove from premises daily.
   2. Prevent accumulation of wastes, which create hazardous conditions.
   3. Provide adequate ventilation during use of volatile or noxious substances.

C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
   1. Do not burn or bury rubbish and waste materials on project site.
   2. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.
   3. Do not dispose of wastes into streams or waterways.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

## PART 3 EXECUTION

### 3.01 DURING CONSTRUCITON

A. Execute cleaning to ensure buildings, grounds and public properties are maintained free from accumulations of waste materials and rubbish

B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

C. At reasonable intervals (maximum each week) during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.

D. Provide on-site containers for collection of waste materials, debris and rubbish.

E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner’s property.

F. Broom clean interior building areas and continue cleaning on an as-needed basis until building is ready for occupancy.

G. Handle materials in a controlled manner with as few handling as possible: do not drop or throw materials from heights.

H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

**3.02 FINAL CLEANING**

A. Employ experienced workmen, or professional cleaners, for final cleaning.

B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.

C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces; polish surfaces so designated for shine finish.

D. Repair, patch and touch-up marred surfaces to specified finish, to match adjacent surfaces.

E. Broom clean paved surfaces; rake clean other surfaces of grounds.

F. Replace air conditioning filters if units were operated during construction.

G. Clean duct, blowers and coils, if air conditioning units were operated without filters during construction.

H. Owner will assume responsibility for cleaning as of time designated on Certificate of Substantial Completion for Owner's acceptance of project or portion thereof.

END OF SECTION

## SECTION 01730

## OPERATING AND MAINTENANCE DATA

### PART 1 GENERAL

**1.01 SUMMARY**

A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract.
   1. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.

B. Instruct Owner's personnel in the maintenance of products and in the operation of equipment and systems.

C. Related requirements specified in other Sections:
   1. Shop Drawings, Product Data and Samples: Section 01340.
   2. Contract Closeout: Section 01720.
   3. Project Record Documents: Section 01720.
   4. Warranties and Bonds: Section 01740.

**1.02 FORM OF SUBMITTALS**

A. Prepare data in the form of an instructional manual for use by Owner's personnel.

B. Format:
   1. Size: 8½" x 11"
   2. Paper: 20 pound, minimum, white, for typed pages.
   3. Text: manufacturer's printed data, or neatly typewritten.
   4. Drawings:
      a. Provide reinforced punched binder tab, bind in with text.
      b. Fold larger drawings to the size of text pages.
   5. Provide flyleaf for each separate product, and major component parts of equipment.
   6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE DATA". List:
      a. Title of Project
      b. Name of Contractor

C. Binders:
   1. Commercial quality three-ring binders with durable and cleanable plastic covers.
   2. Maximum ring size: 3 inches.
   3. When multiple binders are used, correlate the data into related consistent groupings. Mark binders in sequence.

**1.03 CONTENT OF MANUAL**

A. Table of Contents:
   1. Neatly typewritten table of contents for each volume. Base table of contents of Operating and Maintenance Data on table of contents of these specifications.

B. Product Data:
   1. Include only those sheets, which are pertinent to the specific product.
   2. Annotate each sheet to:
      a. Clearly identify the specific product or part installed.
      b. Clearly identify the data applicable to the installation.
      c. Delete references to inapplicable information.

3. List with each product, the name, address and telephone number of:
    a. Subcontractors, including name of responsible principal, address and telephone number.
    b. Maintenance contractor, as appropriate.
    c. Identify the area of responsibility of each.
    d. Local source of supply for parts and replacement.

C. Drawings:
1. Supplement product data with drawings as necessary to clearly illustrate:
    a. Relations of component parts of equipment and systems.
    b. Control and flow diagrams.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

D. Written text, as required to supplement product data for the particular installation.
1. Organize in a consistent format under separate headings for different procedures.
2. Provide a logical sequence of instructions for each procedure.

E. Mechanical and Electrical Systems:
1. The booklet shall contain a complete description of each system in the building as hereinafter outlined.
    a. Description of Electrical System:
    b. Manufacturer's catalog data and parts list on each piece of service entrance equipment and each electrical subpanel in the building.
    c. Manufacturer's catalog data; cuts and parts list of all lighting fixtures and show in which rooms they were installed.
    d. Manufacturer's catalog data, cuts, parts list and wiring diagrams on each piece of fire alarm system, sound system, program system, clock and bell system and all other systems. Data shall include 2 sets of drawings of circuitry by installer.
    e. Provide four sets of drawings to include riser diagrams, panel schedules with directory of circuits and any revisions from Contract Drawings.

F. Description of Plumbing System:
1. Manufacturer's catalog data and parts list on each piece of plumbing equipment furnished.
2. Maintenance and lubrication instructions must be on letterhead of the manufacturer of the equipment.

G. Description of Heating and Air Conditioning System:
1. Complete manufacturer's catalog data, cuts, parts list and wiring diagrams on each piece of heating and air conditioning equipment furnished.
2. Manufacturer's catalog data, cuts, parts list and diagrams on each type of temperature control. Data shall include 2 sets of temperature control diagrams.
3. Maintenance and lubrication instructions on each piece of equipment furnished: instructions must be on the letterhead of the manufacturer of the equipment.

H. Finish Schedule:
1. Provide a copy of the room finish schedule. Schedule shall identify each room by name and number, identify each type finish and color of floors, base, wainscot, walls, ceiling, and all other finishes. Where applicable, pattern or design identification numbers shall be included.

**1.04 SUBMITTAL SCHEDULES**

A. General
1. Prepare 2 copies of the Operating and Maintenance Data Booklet and deliver 2 copies of the booklet to the Architect.

END OF SECTION

## SECTION 01740

## WARRANTIES AND BONDS

### PART 1 GENERAL

**1.01 DESCRIPTION**

A. Compile specified warranties and bonds and submit to Architect. Warranties to commence no earlier than the date of Substantial Completion.

B. Related Requirements Described Elsewhere:
   1. Bid Security Section 00400
   2. Performed Bond and Labor and Material Payment Bond Section 00600
   3. Contract Close-out Section 01700
   4. Operating and Maintenance Data Section 01730
   5. General Warranty of Construction General Conditions

**1.02 SUBMITTALS**

A. Assemble warranties, bonds and services and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Provide two original signed copies of each submittal.

C. Make submittals within ten days after date of Substantial Completion, prior to final request for payment.

**1.03 FORMAT**

A. Size: 8½" x 11", punch sheets for 3 ring binder. Fold larger sheets to fit into binder. Paper to be 20 pound, minimum, white, for typed pages.

B. Cover: Identify each packet with typed title "Warranties and Bonds". List title of project and name of Contractor on cover.

C. Binders: Commercial quality, 3 ring with durable and cleanable plastic covers.

D. Table of Contents: Neatly typewritten table of contents for each volume. Base table of contents of Warranties and Bonds on table of contents of these specifications.

E. Contents:
   1. Product of work item.
   2. Firm of origination of warranty, with name of principal, address and telephone number.
   3. Scope.
   4. Date of beginning of warranty, bond or service and maintenance contract.
   5. Duration of warranty, bond or service maintenance contract.
   6. Provide information for Owner's personnel.
      a. Proper procedure in case of failure.
      b. Instances which might affect the validity of warranty or bond.
   7. Contractor, name or responsible principal, address and telephone number.

**1.04 SUBMITTALS LIST**

The following is an indication of guarantee required by various sections of these specifications, but is not limited to:

| | | | |
|---|---|---|---|
| A. | Section 02281 | Termite Control | -5 years bonded guarantee |
| B. | Section 07140 | Below Grade Waterproofing | -2 years guarantee |
| C. | Section 07160 | Dampproofing Above Grade | -5 years guarantee |
| D. | Section 07410 | Standing Seam Metal Roofing | -20 years service guarantee |
| E. | Section 08120 | Aluminum Doors and Frames | -5 years guarantee |
| F. | Section 08213 | PlasClad Wood Doors | -Industry Standard Guarantee |
| G. | Section 09510 | Acoustical Treatment | -1 year guarantee |
| | | Suspension System | -15 years |
| H. | Section 10800 | Toilet and Bath Accessories | -10 years for mirrors |
| | | | -10 years for hand dryers |

END OF SECTION

**SECTION 01780**

**PROJECT RECORD DOCUMENTS**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record revisions to the Work:
   1. Drawings
   2. Specifications
   3. Addenda
   4. Architects/Engineers written responses to Minor Change directives, Change Proposal Requests, and other supplemental instructions.
   5. Change Orders and other modifications to the Contact.
   6. Reviewed Shop Drawings, Product Data, and Samples.
   7. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner. Architect will review documents for general conformance but will not be responsible for completeness or accuracy of the recorded information.

C. Do not use record documents for construction purposes. Store record documents separate from documents used for construction. Protect record documents from deterioration and loss in a secure, weather-tight location in accordance with Section 01501, Temporary Facilities.

D. Record information concurrent with construction progress, not less than weekly. Provide access to record documents for Architect's reference during normal working hours.

E. Give particular attention to information on concealed products and installations that would be difficult to identify or measure and record later.

F. Mark record sets in red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.
   1. Mark important additional information which was either shown schematically or omitted from original Documents.
   2. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.
   3. Where feasible, the individual or entity who obtained record data, whether the individuals or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on record documents.
      a. Accurately record information in an understandable drawing technique.
      b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
   4. Sign or initial and date each mark-up.

G. Upon completion of the Work, submit Project Record Documents to Architect for the Owner's records in accordance with Section 01710, Closeout Procedures.

## 1.2 RECORD SPECIFICATIONS

A. Record Specifications: Maintain one complete copy of the Project Manual including addenda and modifications issued. Legibly mark and record at each product section a description of actual products installed and variations in actual Work performed in comparison with products specified. Include the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by addenda and modifications.
4. Related record drawing information and Product Data.
5. Other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.

## 1.3 RECORD DRAWINGS

A. Record Drawings: Maintain one complete blackline copy of the Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies from the Work as originally shown.

1. Legibly mark each item to record actual construction including, but not limited to the following:
    a. Measured depths of foundations in relation to project finish floor datum.
    b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
    c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
    d. Field changes of dimension and detail.
    e. Details not on original Contract drawings.
    f. Revisions to details shown on the drawings.
    g. Dimensional changes to the drawings.
    h. Actual equipment locations.
    i. Duct size and routing.
    j. Changes made by Change Order; include change order number.

B. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked to reflect changes in the Work, record a cross-reference at the corresponding location on the Contract Drawings.

C. Preparation of Transparencies: Prepare a full set of corrected reproducible Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawings; include the printed designation “PROJECT RECORD DRAWINGS” in a prominent location on each Drawing.
2. Remove Architects and Engineer's seal from drawings and specifications prior to issuance to Architect for approval.
3. Refer instances of uncertainty to the Architect for resolution.

## 1.4 RECORD PRODUCT DATA

A. Maintain one copy of each Product data submittal for record document purposes. Mark Product Data to indicate the actual product installation. Include significant changes in the product delivered to the site, and changes in manufacture's instructions and

recommendations for installation.

## 1.5 RECORD SAMPLE SUBMITTALS

A. Immediately prior to date of Substantial Completion, meet with the Architect, and Owner, at the Owner's discretion, at the site to determine which of the Samples maintained during the construction period shall be transmitted to Owner for record purposes. Comply with the Architect's instructions for packaging, identification marking, and delivery to Owner's Sample storage space. Dispose of other Samples in manner specified for disposal of surplus and waster materials.

## 1.6 MISCELLANEOUS RECORD DOCUMENTS

A. Refer to other Specification Sections for miscellaneous record- keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Categories of requirements resulting in miscellaneous records, include, but are not limited to the following:

1. Ambient and substrate condition tests.
2. Changes requested by Owner's consultants.
3. Inspections and certifications by governing authorities.
4. Inspection and testing by Owner's inspection agency.
5. Fire resistance and flame spread test results.

## 1.7 CERTIFICATION

A. By submittal of Project Record Documents, Contractor certifies, that to the best of his knowledge, informational and belief the documents are a true and complete representation of the actual construction of the Work of this Project.

## PART 2 – PRODUCTS

Not Used

## PART 3 – EXECUTION

Not Used

**END OF SECTION**

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**FOR**
**LINN - SAN MANUEL EMERGENCY SERVICES FACILITY-PCT. NO.4**

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**END OF DOCUMENT**

# SECTION 02230

# SITE CLEARING

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
1. Removing surface debris.
2. Removing designated trees, shrubs, and other plant life.
3. Removing abandoned utilities.
4. Excavating topsoil.

B. Related Sections:
1. Section 02311 - Rough Grading.
2. Section 02316 - Rock Removal.

## PART 2 EXECUTION

### 2.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify existing plant life designated to remain is tagged or identified.

C. Identify waste area for placing removed materials.

### 2.2 PREPARATION

A. Call Local Utility Line Information not less than three working days before performing Work.
1. Request underground utilities to be located and marked within and surrounding construction areas.

### 2.3 PROTECTION

A. Locate, identify, and protect utilities indicated to remain, from damage.

B. Protect trees, plant growth, and features designated to remain, as final landscaping

C. Protect bench marks, survey control points, and existing structures from damage or displacement.

2.4 CLEARING

A. Clear areas required for access to site and execution of Work.

B. Remove trees and shrubs within marked areas. Remove stumps.

C. Clear undergrowth and deadwood, without disturbing subsoil.

D. Apply herbicide to remaining stumps to inhibit growth.

2.5 REMOVAL

A. Remove debris, rock, and extracted plant life from site.

B. Remove abandoned utilities. Indicated removal termination point for underground utilities on Record Documents.

C. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.

D. Do not burn or bury materials on site. Leave site in clean condition.

2.6 TOPSOIL EXCAVATION

A. Excavate topsoil from areas to be further excavated, relandscaped, or regraded, without mixing with foreign materials for use in finish grading.

B. Do not excavate wet topsoil.

C. Stockpile in area designated on site to depth not exceeding 8 feet and protect from erosion.

D. Remove excess topsoil not intended for reuse, from site.

END OF SECTION

# SECTION 02315

# EXCAVATION AND FILL

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
1. Soil densification.
2. Excavating for building foundations.
3. Excavating for slabs-on-grade.
4. Excavating for site structures.

B. Related Sections:
1. Section 02055 - Soils for Earthwork: Stockpiling excavated materials.
2. Section 02060 - Aggregates for Earthwork: Stockpiling excavated materials.
3. Section 02311 - Rough Grading: Topsoil and subsoil removal from site surface.
4. Section 02316 - Rock Removal: Removal of rock during excavating.
5. Section 02320 - Backfill.
6. Section 02324 - Trenching: Excavating for utility trenches.

### 1.2 REFERENCES

A. ASTM International:
1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
2. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
3. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
4. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

B. Local utility standards when working within 24 inches of utility lines.

## PART 2 EXECUTION

### 2.1 EXCAVATION

A. Underpin adjacent structures which may be damaged by excavation work.

B. Excavate subsoil to accommodate building foundations, slabs-on-grade.

C. Excavate to working elevation for piling work.

D. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity; perform compaction in accordance with Section 02320 and Section 02324.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Trim excavation. Remove loose matter.

G. Notify Architect/Engineer of unexpected subsurface conditions.

H. Correct areas over excavated with structural fill.

I. Remove excess and unsuitable material from site.

J. Repair or replace items indicated to remain damaged by excavation.

2.2 PROTECTION

A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.

B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION

Section 02040

SEEDING FOR EROSION CONTROL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. "Seeding for Erosion Control" shall consist of preparing ground, providing for sowing of seeds, mulching with straw, hay or cellulose fiber and other management practices along and across such areas as are designated on the plans and in accordance with these specifications.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for square yard of ground cover using manufacturer recommended application rates.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

PART 2 P R O D U C T S

2.01 GENERAL

A. All seed must meet the requirements of the Texas Seed Law including the labeling requirements for showing pure live seed, (PLS = Purity x Germination), name and type of seed.

B. Additional materials required shall be provided as required.

2.02 SEED

A. Seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of use on the project.

B. Each variety of seed shall be furnished and delivered in separate bags or containers.

C. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Engineer.

D. Buffalo grass shall be treated with a fungicide approved the Engineer.

E. The amount of seed planted per acre shall be of the type listed in the Table below.

| Common Name | Scientific Name |
|---|---|
| Green Spragletop | Leptochloa dubia |
| Sidoats Grama (El Reno or Premier) | Boutleoua gracilis |
| Blue Grama (Texas Grown) | Bouteloua gracilis |
| Buffalo grass (Treated) | Buchloe dactyloides |
| Western Wheat grass | Agropyron smithii |

| | |
|---|---|
| Blackwell Switchgrass | Panicum virgatum |
| Caucasian Bluestem | Andropogon caucasicus |
| K.R. Bluestem | Andropogon lehmanniana |
| Lehmann Love grass | Pennisetum ciliare |
| Rhodegrass | Chloris gayana |
| Bermuda and Giant Bermunda Grass (Hulle) | Cynodon dactylon |
| Sand Dropseed | Sporobolus cryptandrum |
| Bahiagrass (Pensacola) | Paspalum noatum |
| Weeping Lovegrass | Eragrotis curvula |
| Sand Bluestem | Andropogon hallii |

PART 3 E X E C U T I O N

3.01 PLANTING SEASON

A. All Planting shall be done between the dates specified for each highway district except as specifically authorized in writing

B. The pure live seed planted per acre shall be of the type specified with the mixture, rate and planting dates as follows except as specifically shown on plans.

a. September 15 to March 1: Seeding to be with combination of 2 pounds per 1,000 square feet of un-hulled Bermuda grass (Cynoden Dactolyn) and 2 pounds per 1,000 square feet of winter rye with a purity of 95% germination.

b. March 2 to September 14: Seeding to be with hulled Bermuda grass (Cynoden Dactolyn) at a rate of 2 pounds per 1,000 square feet with a purity of 95% with 85% germination.

END OF SECTION

# SECTION 02055

# SOILS FOR EARTHWORK

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
   1. Subsoil materials.
   2. Topsoil materials.

B. Related Sections:
   1. Section 02060 - Aggregates for Earthwork.
   2. Section 02061 - Aggregates for Exterior Improvements.
   3. Section 02311 - Rough Grading.
   4. Section 02320 - Backfill.
   5. Section 02324 - Trenching.

### 1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
   1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
   2. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft3 (2,700 kN-m/m3)).
   3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

## PART 2 PRODUCTS

### 2.1 SOURCE QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing and Inspection Services Testing and analysis of soil material.

B. Testing and Analysis of Subsoil Material:Perform in accordance with ASTM D698.

C. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D698.

D. When tests indicate materials do not meet specified requirements, change material and retest.

E. Furnish materials of each type from same source throughout the Work.

## PART 3 EXECUTION

### 3.1 EXCAVATION

A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.

B. Stockpile excavated material meeting requirements for subsoil materials and topsoil materials.

C. Remove excess excavated materials subsoil and topsoil not intended for reuse, from site.

D. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.

### 3.2 STOCKPILING

A. Stockpile materials on site at locations designated by Architect/Engineer.

B. Stockpile in sufficient quantities to meet Project schedule and requirements.

C. Separate differing materials with dividers or stockpile apart to prevent mixing.

D. Prevent intermixing of soil types or contamination.

E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

### 3.3 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 02083

FIBERGLASS MANHOLES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Fiberglass manholes placed within traffic areas.

B. Fiberglass manholes placed within non traffic areas.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for fiberglass manholes is on unit price basis for each manhole installed.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ANSI B 16.1 - Cast Iron Pipe Flanges and Flanged Fittings.

B. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.

C. ASTM C 270 - Standard Specification for Mortar for Unit Masonry.

D. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non shrink).

E. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft3 (600kN-m/m3).

F. ASTM D 2665 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste and Vent Pipe and Fittings.

G. ASTM D 2996 - Standard Specification for Filament-Wound “Fiberglass” (Glass-Fiber Reinforced Thermosetting-Resin) Pipe.

H. ASTM D 2997 - Standard Specification for Centrifugally Cast “Fiberglass” (Glass-Fiber Reinforced Thermosetting Resin) Pipe.

I. ASTM D 3753 - Standard Specification for Glass-Fiber-Reinforced Polyester Manholes and Wetwells.

J. American Association of State Highway and Transportation Officials (AASHTO).

1.04 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit manufacturer's data and details of following items for approval:

1. Design and fabrication details of fiberglass manhole components
2. Installation instruction for fiberglass manholes
3. Frames, grates, rings, and covers
4. Materials to be used in fabricating drop connections
5. Materials to be used for pipe connections at manhole walls
6. Materials to be used for stubs and stub plugs, if required
7. Plugs to be used for sanitary sewer hydrostatic testing
8. Manufacturer's data for pre-mix (bag) concrete if used for channel inverts and benches
9. Manufacturer's color chart for fiberglass vent pipe coatings.

C. Submittals listed in Section 02082, paragraph 1.04.

PART 2 P R O D U C T S

2.01 FIBERGLASS MANHOLES AND BASE SECTIONS

A. Provide prefabricated fiberglass manholes which conform in shape, size, dimensions, and details shown on Drawings and of sufficient strength to safely support HS-20 loading in accordance with AASHTO. Unless modified by Drawings, use manhole sections conforming to ASTM D 3753.

B. Mark date of manufacture and name or trademark of manufacturer in 1-inch high stenciled letters on inside of barrel.

C. Unless larger size is required, provide 48-inch-diameter barrel or 1.5 times the nominal pipe diameter of the largest pipe, which ever is larger for fiberglass manholes. A concentric reducer over the barrel of the manhole shall have an inside diameter of 23 inches. Provide wall section thickness for depth of manhole according to ASTM D 3753, but not less than 0.48 inches in thickness.

E. Provide fabricated reducer bonded at factory to form one continuous unit at top of manhole barrel to accept concrete grade rings and cast iron frame and cover. Reducer design shall be of sufficient strength to safely support HS-20 loading in accordance with AASHTO.

F. Provide manhole base of pre-cast, unless cast-in-place base is indicated on Drawings. For pre-cast manhole bases, use an approved steel-reinforced design of sufficient strength to withstand imposed loads. Form base so that joint with fiberglass manhole barrel is sealed against leakage, as shown on Drawings.

2.02 C O N C R E T E

A. Conform to requirements of Section 03315 - Concrete for Utility Construction.

B. Channel Inverts: Use 5 sack premix (bag) concrete or Class A concrete for inverts not integrally formed with manhole base, with minimum compressive strength of 4000 psi.

C. Concrete Foundation: Use Class A concrete with minimum compressive strength of 4000 psi for cast-in-place base and for foundation slab under manhole base section where indicated on Drawings.

D. Gravel: Provide gravel under base section, as shown on manhole Drawings.

2.03 REINFORCING STEEL

A. Provide reinforcing steel conforming to requirements of Section 03315 - Concrete for Utility Construction.

2.04 MISCELLANEOUS METALS

A. Provide cast-iron frames, rings, and covers conforming to requirements of Section 02084 - Frames, Grates, Rings, and Covers.

2.05 DROP CONNECTIONS AND STUBS

A. Provide drop connections and stubs conforming to same pipe material requirements used in main pipe, unless otherwise indicated on Drawings.

2.06 PIPE CONNECTIONS FOR SANITARY SEWERS

A. Attach PVC bell-end stub out no longer than 18 inches in length to the manhole by means of “Insert-a-Tee” gasket watertight compression connection or by fiberglass lay up in accordance with the manufacture’s recommendations. Cutting of the manhole wall shall be by means of a hole saw only.

B. For drop, provide manufactured connector, such as Insert-a-Tee or equal, which provides positive seal between pipe and wall.

2.07 SEALANT MATERIALS

A. Butyl Sealant: Provide Press-Seal EZ Stick, or equal, for HDPE rings.

2.08 BACKFILL MATERIALS

A. Backfill materials shall conform to requirements of Section 02317 - Excavation and Backfill for Utilities.

2.09 NON-SHRINK GROUT

A. Provide prepackaged, inorganic, flowable, non-gas-liberating, nonmetallic, cement-based grout requiring only addition of water.

B. Grout shall meet requirements of ASTM C 1107 and shall have minimum 28-day compressive strength of 7000 psi.

2.10 VENT PIPES

A. Provide external vent pipes for manholes, where indicated on Drawings.

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify that lines and grades are correct.

B. Determine if subgrade, when scarified and recompacted, can be compacted to 95 percent of maximum Standard Proctor Density according to ASTM D 698 prior to placement of foundation material and base section. When it cannot be compacted to that density, moisture condition subgrade until that density can be reached or treat as an unstable subgrade.

3.02 PLACEMENT

A. Install fiberglass manholes to conform to locations and dimensions shown on Drawings.

B. Place sanitary sewer manholes at points of change of alignment, grade, size, pipe intersections, and end of sewer.

3.03 MANHOLE BASE SECTIONS AND FOUNDATIONS

A. Place base section and foundation as shown on Drawings.

3.04 CAST-IN-PLACE FOUNDATION

A. Where Drawings indicate cast-in-place manhole base, place concrete as shown on Drawings on 4-inch (minimum) layer of gravel. When unstable subgrade is identified, over-excavate subgrade to allow for placement of 12 inch thick layer of gravel wrapped in filter fabric.

3.05 MANHOLE BARREL

A. Lower manhole barrel onto base section. Seal with manufacturer's gasket or approved sealant. Wrap joint with external sealing material, minimum 12-inch width.

B. Where cast-in-place base is used, support manhole barrel in place and brace it from sides of excavation to prevent any movement of barrel during concrete placement and while concrete is setting. Provide minimum clearance between reinforcing steel and manhole barrel bottom as shown on Drawings. Do not support manhole barrel on reinforcing steel. Place bead of water swelling sealant around inside of barrel near bottom, as shown on Drawings, to form seal.

3.06 PIPE CONNECTIONS AT PRECAST MANHOLE BASE

A. Install approved resilient connectors at each pipe entering and exiting sanitary sewer manholes in accordance with manufacturer's instructions.

B. Ensure that no concrete, cement stabilized sand, fill, or other solid material is allowed to enter space between pipe and edge of wall opening at and around resilient connector on either interior or exterior of manhole. When necessary, fill space with compressible material to ensure full flexibility provided by resilient connector.

C. Test connection for watertight seal before backfilling.

3.07 PIPE CONNECTIONS AT CAST-IN PLACE BASE

A. Cut manhole barrel for pipe penetrations following curvature of pipe and with maximum of 1-inch clearance. Seal cut edges with resin. Hole shall be circular.

B. Place continuous bead of water swelling sealant, as shown on Drawings, around pipe

penetrations on interior of manhole barrel. Roughen surface of fiberglass prior to placement to improve bond with sealant. Allow sealant to completely cure before placing concrete against it.

C. Extend pipe entering manhole at least 8 inches into manhole. Fit pipes with an Insert-a-Tee" gasket watertight compression connection placed tightly around pipe using stainless steel clamp. Alternately, pipes may have continuous bead of water swelling sealant, as detailed on Drawings, placed around pipe circumference.

D. When forming invert surface in bottom of manhole, mound concrete around pipe penetrations so that water swelling sealant beads and neoprene water-stop gasket have minimum 2 inches of concrete cover.

E. Test connection for watertight seal before backfilling.

3.08 INVERTS FOR SANITARY SEWERS

A. Construct invert channels as shown on Drawings.

3.09 DROP CONNECTIONS FOR SANITARY SEWERS

A. Backfill drop assembly with gravel.

B. Install drop connection when sewer line enters manhole higher than 30 inches above invert of manhole.

C. At drop pipe connections through fiberglass barrel, cut circular hole sized to requirements of manufactured connector. Seal cut edge with resin. Install watertight connector according to manufacturer's recommendations.

3.10 STUBS FOR FUTURE CONNECTIONS

A. Where future connections are indicated on Drawings, install resilient connectors and pipe stubs with approved watertight plugs in manholes.

B. At cast-in-place base, where future connections are indicated on Drawings, install section of pipe extending no further than 12 inches from edge of foundation, ending in bell and provided with rubber-gasket watertight plug.

3.11 ADJUSTMENT RINGS AND FRAME

A. Adjust HDPE rings so that elevation of installed casting cover matches pavement surface. Do not load manhole except on load bearing shoulder of manhole. Seal between adjustment ring and fiberglass manhole with approved sealant material. Set cast iron frame on adjustment ring in bed of approved sealant material. Install sealant bed consisting of two beads on sealant, each bead having minimum dimensions of 1/2-inch and 1/2-inch wide.

B. Wrap manhole frame and adjustment rings with external sealing material, minimum 3 inches beyond joint between ring and frame and ring.

C. Set cast iron frame on top of cone or adjustment rings using water swelling sealant materials and adjust elevation of casting cover to match pavement surface. For manholes in unpaved areas, set top frame minimum of 6 inches above existing ground line unless otherwise, indicated on Drawings.

3.12 BACKFILL

A. After leakage testing, place and compact backfill material in area of excavation surrounding manholes in accordance with requirements of Section 02317- Excavation and Backfill for Utilities. Use embedment zone backfill material, as specified for adjacent utilities, from manhole foundation up to elevation 12-inches over each pipe connected to manhole. Provide trench zone backfill, as specified for adjacent utilities, above embedment zone backfill.

B. In unpaved areas, provide positive drainage away from manhole frame to natural grade. Provide minimum of 4-inches of topsoil.

3.13 FIELD QUALITY CONTROL

A. Conduct leakage testing of sanitary sewer manholes in accordance with requirements of Section 02533 - Testing for Sanitary Sewers.

3.14 PROTECTION

A. Protect manholes from damage until work has been finally accepted. Repair damage to manholes at no additional cost to Owner.

END OF SECTION

SECTION 02084

FRAMES, GRATES, RINGS AND COVERS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Iron castings for manhole frames and covers, inlet frames and grates, catch basin frames and grates, meter vault frames and covers, adjustment rings, and extensions.

B. Ring grates.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for frames, grates, rings, covers, and seals under this Section. Include payment in price for related item.

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures~~

1.03 REFERENCES

A. AASHTO - American Association of State Highway and Transportation Officials Standard Specification for Highway Bridges

B. ASTM A 48 - Standard Specification for Gray Iron Castings

C. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

D. AWS - D 12.1 Welding Reinforcing Steel.

1.04 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit copies of manufacturer's specifications, load tables, dimension diagrams, anchor details, and installation instructions.

C. Submit shop drawings for fabrication and installation of casting assemblies that are not included in Drawings. Include plans, elevations, sections and connection details. Show anchorage and accessory items. Include setting drawings for location and installation of castings and anchorage devices.

PART 2 P R O D U C T S

2.01 CASTINGS

A. Use castings for frames, grates, rings and covers conforming to ASTM A 48, Class 35B. Provide locking covers if indicated on Drawings.

B. Use clean castings capable of withstanding application of AASHTO M306- 40,000 pound

proof loading without detrimental permanent deformation.

C. Fabricate castings to conform to shapes, dimensions, and with wording or logos shown on Drawings. Standard dimensions for manhole covers are 33.58 inches in diameter.

D. Use clean castings, free from blowholes and other surface imperfections. Use clean and symmetrical cast holes in covers, free of plugs.

2.02 BEARING SURFACES

A. Machine bearing surfaces between covers or grates and their respective frames so that even bearing is provided for position in which casting may be seated in frame.

2.03 SPECIAL FRAMES AND COVERS

A. Where indicated on Drawings, provide watertight manhole frames and covers with minimum of four bolts and gasket designed to seal cover to frame. Supply approved watertight manhole covers and frames.

B. Where shown on Drawing, provide manhole frames and covers with 48 inch diameter clear opening, with inner cover for 22.5 inch diameter clear opening. Provide approved inner cover with pattern shown on Drawings.

2.04 FINISH

A. Unless otherwise specified, uncoated coat iron.

2.05 FABRICATED RING GRATES

A. Fabricate ring grates from reinforcing steel conforming to ASTM A 615.

B. Conform to welds connecting bars to AWS D 12.1.

2.06 ADJUSTMENT RINGS FOR ASPHALT OVERLAYS

A. Use castings conforming Section 2.01.

B. One piece casting with dimensions to fit frame and cover.

PART 3 E X E C U T I O N

3.01 INSTALLATION

A. Install castings according to approved shop drawings, instructions in related specifications, and applicable directions from manufacturer's printed materials.

B. Set castings accurately at required locations to proper alignment and elevation. Keep castings plumb, level, true, and free of rack. Measure location accurately from established lines and grades. Brace or anchor frames temporarily in form work until permanently set.

END OF SECTION

SECTION 02200
EARTHWORK & SITE GRADING

## PART 1 - GENERAL

### 1.1 SCOPE

A. Perform all work required to complete the project as indicated by the Contract Documents, and furnish all supplementary items necessary for the completion of all work specified in this Section.

B. The work included in this Section shall include furnishing all labor, tools, materials and incidentals required to complete the work; excavate and fill to the lines, elevations and limits shown on the drawings for all pavements, buildings, landscaped areas, etc. as indicated below and cleaning up. The landscaped areas shall be graded to an elevation 6 inches below finished grade allowing for topsoil placement. The pavement areas shall be graded to an elevation below finished grade allowing for pavement placement. Building foundation areas shall be prepared in accordance with the geotechnical investigation and these specifications. The Contractor shall comply with all requirements of the city standards, the E.P.A. requirements and with the standards and specifications stated herein. All earthwork shall be done in accordance with the Geotechnical Investigation.

### 1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02233 – Clearing & Grubbing
B. Section 02270 - Soil Erosion and Sediment Control
B. Section 02751 - Concrete Pavement

### 1.3 QUALITY ASSURANCE

A. Codes and Standards

1. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. The contractor shall have a trench safety plan prepared by a registered professional engineer for all excavations in excess of 5 feet deep.

B. Testing and Inspection Service

1. The owner will engage a soil testing and inspection service for quality control testing during earthwork operations to inspect and test all soil materials proposed for use in all excavation and fill operations.

### 1.4 JOB CONDITIONS

A. Existing Utilities

1. It shall be the Contractor's responsibility to verify the location (horizontal and vertical depth) of all utilities prior to beginning earthwork operations. If utilities are to remain in place, provide protection from damage during construction operations.

2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult owner immediately for directions as to how to proceed. Cooperate with owner, public and private utility companies in keeping services and

facilities in operation. Repair damaged utilities to satisfaction of utility owner.

3. Do not interrupt existing utilities serving facilities occupied and used by owner or adjacent properties, except when permitted in writing by property owner and then only after temporary utility services have been provided.

B. Use of Explosives

1. The use of explosives is not permitted.

C. Protection of Persons and Property

1. Barricade open excavations occurring as part of this work and post with warning lights. Provide traffic control as required by the city and as required to protect the public.

2. Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

A. Fill Material:

1. Onsite excavated material free from trash, vegetation, rocks and lumps of earth larger than 4 inches in diameter or other objectionable material. Imported fill, if required, shall also be clean and have a liquid limit less than 50 percent.

B. Select Material:

1. Uniformly blended clayey sand to very sandy with a plasticity index between 6 and 15 and liquid limit of less than 35 percent.

## PART 3 - EXECUTION

### 3.1 INSPECTION

A. Examine the areas and conditions under which earthwork and site grading operations are to be performed. After excavation to subgrade, proofroll with a heavy pneumatic tired roller, loaded dump truck or similar equipment weighing approximately 25 tons or greater to help compact pockets of loose soil and expose additional areas of weak, soft or wet soils in the presence of the owner's representative. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

### 3.2 EXCAVATION

A. The Contractor shall excavate to the lines and elevations shown on the drawings, as previously indicated herein, regardless of the type, condition, or moisture content of the material encountered. Conduct excavation operations to provide positive drainage, at contractor's expense, at all times during construction. If positive drainage cannot be maintained, contractor shall keep standing water out of all excavations with adequate

dewatering equipment.

B. All areas shall be cut accurately to the indicated grades. Care shall be taken to prevent excavation below the grades indicated and any bottoms or slopes that have been undercut shall be backfilled with approved materials and compacted to the required fill density.

C. Excavation required for rough grading shall be finished within a tolerance of 0.10 foot above or below the rough grade and in no case shall depressions be left that will not completely drain.

**3.3 BUILDING SUBGRADE**

A. Follow recommendations in geotechnical report and on the structural drawings.

**3.4 FILLING**

A. Remove all vegetation, organic materials and debris prior to placing fill.

B. Fill used below the parking and landscape areas shall be onsite soils encountered in the excavation or imported fill except grass, weeds, roots, vegetation and similar materials. The largest rock, particle or clod shall be less than 4 inches in diameter prior to compaction.

C. Care should be taken that utility cuts are not left open for extended periods and that cuts are properly backfilled. A positive cut-off of 1' thick compacted clay at the building line shall be used to help prevent water from migrating in the utility trench.

D. Before fill is placed under pavement or if subgrade is in an excavation, subgrade soils shall be scarified to a depth of 8" and recompacted between 93 and 98 percent of maximum dry density per ASTM D698 at a moisture content from +2 to +5 percent above optimum moisture content.

E. Fill below all pavement and landscaped areas shall be placed in 6 to 8 inch loose lifts and compacted to a minimum dry density of 95 percent of the standard proctor density (ASTM D698) under pavement and 90 percent elsewhere. The moisture content shall be between -1 and +3 percent above optimum.

F. Compaction shall be obtained by use of sheeps foot rollers, rubber-tired rollers, or other approved equipment capable of obtaining the required density. In the event the embankment material is too wet or too dry for adequate compaction, the contractor shall add moisture or dry the material as required to the extent necessary to obtain the required density.

**3.5 PAVEMENT SUBGRADE**

A. Construct subgrades for paved areas to conform to the grades, lines and cross sections shown on the drawings and per the recommendations in the geotechnical report.

B After the pavement subgrades have been shaped and compacted, bring the surface to a firm, unyielding surface by rolling the entire area with an approved vibratory roller. Compact all areas inaccessible to the roller with hand tampers weighing not less than 50 pounds, and with face area not more than 100-square-inches. Unless the material at the time of the rolling contains sufficient moisture to insure proper compaction, add water as directed before compacting. Allow the material containing excess moisture to dry to the proper consistency and moisture content before being compacted.

## 3.6 MOISTURE CONTROL

A. Where soil material must be moisture conditioned before compaction, uniformly apply required amount of water to surface of soil material in such manner as to prevent free water appearing on surface during, or subsequent to, compaction operations.

B. Remove and replace, or scarify and air dry soil material that is too wet to permit compaction to specified percentage of maximum density.

C. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread on surface where directed by owner's representative and permitted to dry. Assist drying by discing, harrowing or pulverizing until moisture-density relation tests fall within the herein-specified range.

## 3.7 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction

1. ~~Testing laboratory services shall be in accordance with section 01410.~~
2. Allow owner's testing service to inspect and approve subgrades and fill layers before further construction work is performed. In the building areas, there will be at least 1 density test per 2500 square feet per lift with a minimum of 3. In the pavement areas there will be at least 1 density test per 5000 square feet per lift with a minimum of 3.
3. If, in the opinion of the owner, based on testing service and inspection, the subgrade or fills which have been placed are below the specified density, the contractor shall provide additional compaction and testing at no additional expense to the owner.
4. The results of density tests which may be selected will be considered satisfactory when they are in each instance equal to or greater than the specified density, and if not more than 1 density test out of 5 has a value greater than 2% below the required density.

## 3.8 MAINTENANCE

A. Protection of Graded Areas

1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
2. Repair and re-establish grades in settled, eroded, and rutted areas to the specified tolerances.

B. Reconditioning Compacted Areas

1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction. Use hand tamping for recompaction over underground utilities.

## 3.8 DISPOSAL OF EXCESS AND WASTE MATERIALS

Remove all excess excavation, trash, debris and waste materials, and legally dispose of off the owner's property, at no additional cost.

**END OF SECTION**

Section 02233

CLEARING AND GRUBBING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Removing surface debris and rubbish.

B. Clearing site of plant life and grass.

C. Removing trees and shrubs.

D. Removing root system of trees and shrubs.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No Separate payment will be made for work performed under this Section. Include cost of work performed under this Section in pay items for which this work is a component.

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable codes for disposal of debris.

B. Coordinate clearing work with utility companies.

1.04 SUBMITTALS

A. Conform to the requirements of Submittal Procedures Section of this Project Manual.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Verify that existing plant life and features designated to remain are identified and tagged. Submit preconstruction photographs in accordance with the applicable portions of the Construction Photographs Section.

3.02 PROTECTION

A. Protect the following from damage or displacement:

1. Living trees located 3 feet or more outside of the intersection of side slopes and original ground line.

2. Plants other than trees and landscape features designated to remain.

3. Utilities designated to remain.

4. Bench marks, monuments, and existing structures designated to remain.

3.03 CLEARING

A. Remove stumps, main root ball, and root system to:

1. A depth of 24 inches below the finished subgrade elevation in the area bounded by lines two feet behind back of curbs.

2. A depth of 24 inches below the finished surface of the required cross section for other areas.

B. Clear undergrowth and deadwood without disturbing subsoil.

C. Remove vegetation from top soil scheduled for reuse.

3.04 REMOVAL

A. Remove debris, rubbish, and extracted plant material life from the site in accordance with requirements of Waste Material Disposal.

END OF SECTION

SECTION 02270
SOIL EROSION AND SEDIMENT CONTROL

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

A. Furnish all labor, materials, tools, equipment, and services for all soil erosion and sediment control, as indicated, in accord with provisions of Contract Documents.

B. Completely coordinate with work of all other trades.

C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation in order to meet the United States Environmental Protection Agency requirements.

### 1.2 QUALITY ASSURANCE

A. Erosion Control Standards:

1. United States Environmental Protection Agency, National Pollutant Discharge Elimination System (NPDES) - Storm Water Management for Construction Activities.

2. North Central Texas Council of Governments (NCTCOG) - Storm Water Quality Best Management Practices for Construction Activities.

### 1.3 EROSION CONTROL PRINCIPLES:

A. Perform demolition, construction and other soil disturbances in a manner which minimizes soil erosion.

B. Retain and protect existing vegetation as much as is feasible.

C. Keep area which is exposed and free of vegetative cover to a minimum, within practical limits.

D. Protect exposed critical areas during prolonged construction or other land disturbance by temporary seeding, mulching or other suitable stabilization measures.

### 1.4 JOB CONDITIONS:

A. Comply with all requirements of the EPA for implementation of the storm water pollution prevention plan, under the NPDES General Permits for Storm Water Discharges from Construction Sites.

### 1.5 SUBMITTALS

A. Project Information:

1. Submit copy of NPDES Storm Water Permit for Construction Activities to Owner prior to construction.

## PART 2 - PRODUCTS

### 2.1 MATERIALS:

A. Filter Fabric: Sediment control silt fabrics, AMOCO Style #2125 or approved equal.

B. Crushed stone.

C. Metal clips or ties.

D. Steel fence posts.

E. Grass Seed: annual ryegrass or Bermuda depending on the season.

F. Concrete block.

G. Wire screen.

## PART 3 - EXECUTION

### 3.1 BEGINNING CONSTRUCTION

A. Prior to general demolition, install temporary silt fences and stabilized construction entrance as indicated on the storm water pollution prevention plan or where directed by Owner.

B. Construct erosion control devices in accordance with the storm water pollution prevention plan and as directed by the Owner during demolition and as demolition progresses.

C. Seed disturbed areas where construction activities temporarily cease at rate necessary to achieve a full stand of grass. Reseed as required until good stand of grass is achieved.

### 3.2 DURING CONSTRUCTION

A. Maintain temporary silt fences.

B. Inspect regularly, especially after rainstorms.

C. Repair or replace damaged or missing items.

D. Sow temporary grass cover over disturbed areas where construction activities temporarily cease for more than 21 days and as required by NPDES permit.

E. Install inlet protection as indicated by the storm water pollution prevention plan at each inlet.

F. Provide swales and dikes as necessary to direct all water towards a protected device.

G. Do not disturb existing vegetation (grass and trees) outside limits of demolition.

H. Remove sediment from behind temporary silt fences when it reaches a depth of 6 in.

### 3.3 COMPLETION OF CONSTRUCTION AND STABILIZATION OF THE SITE

A. Remove from site all temporary erosion control devices.

**END OF SECTION**

# SECTION 02311

# ROUGH GRADING

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
1. Excavating topsoil.
2. Excavating subsoil.
3. Cutting, grading, filling, compacting site for site structures, building pads.

B. Related Sections:
1. Section 02055 - Soils for Earthwork: Soils for fill.
2. Section 02060 - Aggregates for Earthwork: Aggregates for fill.
3. Section 02230 - Site Clearing: Excavating topsoil.
4. Section 02315 - Excavation and Fill: Building excavation.
5. Section 02316 - Rock Removal.
6. Section 02320 - Backfill: General building area backfilling.
7. Section 02324 - Trenching: Trenching and backfilling for utilities.

### 1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:
1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
3. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
4. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft3 (2,700 kN-m/m3)).
5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
7. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head).
8. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

9. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

## PART 2 EXECUTION

### 2.1 PREPARATION

A. Call Local Utility Line Information service not less than three working days before performing Work.
   1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum.

C. Protect utilities indicated to remain from damage.

D. Protect bench marks, survey control point, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

### 2.2 FILLING

A. Fill areas to contours and elevations with unfrozen materials.

B. Place fill material in continuous layers and compact as required.

C. Maintain optimum moisture content of fill materials to attain required compaction density.

D. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.

E. Make grade changes gradual. Blend slope into level areas.

### 2.3 FIELD QUALITY CONTROL

A. Perform in place compaction tests in accordance with the following:
   1. As required by geotechnical engineer.

END OF SECTION

SECTION 02316

EXCAVATION AND BACKFILL FOR STRUCTURES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Excavation, backfilling, and compaction of backfill for structures.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No payment will be made for structural excavation and backfill under this Section. Include payment in unit price or lump sum for construction of structures.

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 DEFINITIONS

A. Unsuitable Material: Unsuitable soil materials are the following:

1. Materials that are classified as ML, CL-ML, MH, PT, OH, and OL according to ASTMD 2487.

2. Materials that cannot be compacted to required density due to gradation, plasticity, or moisture content.

3. Materials that contain large clods, aggregates, stones greater than 4 inches in any dimension, debris, vegetation, waste or any other deleterious materials.

4. Materials that are contaminated with hydrocarbons or other chemical contaminants.

B. Suitable Material: Suitable soil materials are those meeting specification requirements.

C. Select Material: Material as defined in Section 02320 - Utility Backfill Materials.

D. Backfill: Select material meeting specified quality requirements, placed and compacted under controlled conditions around structures.

E. Foundation Backfill Materials: Natural soil or manufactured aggregate meeting Class I requirements and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as backfill where needed to provide stable support for structure foundation base.

F. Foundation Base: For foundation base material, use gravel aggregate with filter fabric as required. Foundation base provides smooth, level working surface for construction of concrete foundation.

G. Foundation Subgrade: Foundation subgrade is surface of natural soil which has been excavated and prepared to support foundation base or foundation backfill, where needed.

H. Ground Water Control Systems: Installations external to excavation such as well points, eductors, or deep wells. Ground water control includes dewatering to lower ground water, intercepting seepage which would otherwise emerge from side or bottom of excavation, and depressurization to prevent failure or heaving of excavation bottom. Refer to Section 01578 - Control of Ground Water and Surface Water.

I. Surface Water Control: Diversion and drainage of surface water runoff and rain water away from excavation. Remove rain water and surface water which accidentally enters excavation as part of excavation drainage.

J. Excavation Drainage: Removal of surface and seepage water in excavation by sump pumping and using French drains surrounding foundation to intercept water.

K. Over-Excavation and Backfill: Excavation of subgrade soils with unsatisfactory bearing capacity or composed of otherwise unsuitable materials below foundation as shown on Drawings, and backfilled with foundation backfill material.

L. Shoring System: Structure that supports sides of an excavation to maintain stable soil conditions and prevent cave-ins.

1.04 REFERENCES

A. ASTM D 698 - Standard Test Methods for Laboratory Compaction of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600kN-m/m3)).

B. ASTM D 1556 - Standard Test Method for Density of Soil in Place by Sand-Cone Method.

C. ASTM D 2922 - Standard Test Methods for Density of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

D. ASTM D 3017 - Standard Test Method for Water Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depths).

E. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

F. TxDOT Tex-101-E - Preparing Soil and Flexible Base Materials for Testing.

G. TxDOT Tex-110-E - Particle Size Analysis of Soils.

H. Federal Regulations, 29 CFR, Part 1926, Standards - Excavation, Occupational Safety and Health Administration (OSHA).

1.05 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit work plan for excavation and backfill for each structure with complete written description which identifies details of proposed method of construction and sequence of operations for construction relative to excavation and backfill activities. Use descriptions, with supporting illustrations, sufficiently detailed to demonstrate to Engineer that procedures meet requirements of Specifications and Drawings.

C. Submit excavation safety system plan.

1. Submit excavation safety system plan in accordance with applicable OSHA requirements for

excavations.

2. Submit excavation safety system plan in accordance with requirements of OSHA, for excavations that fall under State and Federal trench safety laws.

D. Submit ground and surface water control plan if needed.

E. Submit backfill material sources and product quality information in accordance with requirements of Section 02320 - Utility Backfill Materials.

F. Submit project record documents. Record location of utilities, as installed, referenced to survey benchmarks. Include location of utilities encountered or rerouted. Give horizontal dimensions, elevations, inverts and gradients.

1.06 TESTS

A. Testing and analysis of backfill materials for soil classification and compaction during construction will be performed by an independent laboratory provided by Owner in accordance with requirements of Section 01454 - Testing Laboratory Services and as specified in this Section.

B. Perform embedment and backfill material source qualification testing.

PART 2 P R O D U C T S

2.01 EQUIPMENT

A. Perform excavation with equipment suitable for achieving requirements of this Specification.

B. Use equipment which will produce degree of compaction specified. Compact backfill within 3 feet of walls with hand operated equipment. Do not use equipment weighing more than 10,000 pounds closer to walls than a horizontal distance equal to depth of fill at that time. Use hand operated power compaction equipment where use of heavier equipment is impractical or restricted due to weight limitations.

2.02 MATERIAL CLASSIFICATIONS

A. Use backfill materials conforming to classifications and product descriptions of Section 02320 - Utility Backfill Materials. Use classification or product description for backfill applications as shown on Drawings and as specified.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Conduct an inspection to determine condition of existing structures and other permanent installations.

B. Set up necessary street detours and barricades in preparation for excavation if construction will affect traffic. Maintain barricades and warning devices at all times for streets and intersections where work is in progress, or where affected by Work, and is considered hazardous to traffic movements.

C. Perform work in accordance with OSHA standards. Employ an excavation safety system as specified by OSHA.

D. Remove existing pavements and structures, including sidewalks and driveways.

E. Install and operate necessary dewatering and surface water control measures if needed.

3.02 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other permanent objects outside of grading limits and within grading limits as designated on Drawings.

B. Protect and support above-grade and below-grade utilities which are to remain.

C. Restore damaged permanent facilities to pre-construction conditions unless replacement or abandonment of facilities is indicated on Drawings.

D. Prevent erosion of excavations and backfill. Do not allow water to pond in excavations.

E. Maintain excavation and backfill areas until start of subsequent work. Repair and re-compact slides, washouts, settlements, or areas with loss of density at no additional cost to the Owner.

3.03 EXCAVATION

A. Perform excavation work so that underground structure can be installed to depths and alignments shown on Drawings. Use caution during excavation work to avoid disturbing surrounding ground and existing facilities and improvements. Keep excavation to absolute minimum necessary. No additional payment will be made for excess excavation not authorized by Engineer.

B. Upon discovery of unknown utilities, badly deteriorated utilities not designated for removal, or concealed conditions, discontinue work at that location. Notify Engineer and obtain instructions before proceeding in such areas.

C. Immediately notify agency or company owning any line which is damaged, broken or disturbed. Obtain approval from Engineer and agency for any repairs or relocations, either temporary or permanent.

D. Avoid settlement of surrounding soil due to equipment operations, excavation procedures, vibration, dewatering, or other construction methods.

E. Provide surface drainage during construction to protect work and to avoid nuisance to adjoining property. Where required, provide proper dewatering and piezometric pressure control during construction.

F. Conduct hauling operations so that trucks and other vehicles do not create dirt nuisance in streets. Verify that truck beds are sufficiently tight and loaded in such a manner such that objectionable materials will not spill onto streets. Promptly clear away any dirt, mud, or other materials that spill onto streets or are deposited onto streets by vehicle tires.

G. Maintain permanent benchmarks, monumentation, and other reference points. Unless otherwise directed, replace those which are damaged or destroyed by Work.

H. Provide sheeting, shoring, and bracing where required to safely complete Work, to prevent excavation from extending beyond limits indicated on Drawings, and to protect Work and adjacent structures or improvements. Use sheeting, shoring, and bracing to protect workmen and public conforming to requirements of OSHA.

I. Prevent voids from forming outside of sheeting. Immediately fill voids with grout, cement stabilized sand, or other material approved by Engineer and compact to 95 percent standard

density.

J. After completion of structure, remove sheeting, shoring, and bracing unless shown on Drawings to remain in place or directed by Engineer in writing that such temporary structures may remain. Remove sheeting, shoring and bracing in such a manner as to maintain safety during backfilling operations and to prevent damage to Work and adjacent structures or improvements.

K. Immediately fill and compact voids left or caused by removal of sheeting with cement stabilized sand or other material approved by Engineer and compact to 95 percent standard density.

3.04 HANDLING EXCAVATED MATERIALS

A. Classify excavated materials. Place material which is suitable for use as backfill in orderly piles at sufficient distance from excavation to prevent slides or cave-ins.

B. Provide additional backfill material, if adequate quantities of suitable material are not available from excavation and trenching operations at site.

3.05 DEWATERING

A. Provide ground water control if needed.

B. Keep ground water surface elevation minimum of 2 feet below bottom of foundation base.

C. Maintain ground water control and surface water until structure is sufficiently complete to provide required weight to resist hydrostatic uplift with minimum safety factor of 1.2.

3.06 FOUNDATION EXCAVATION

A. Notify Engineer at least 48 hours prior to plan completion of foundation excavations. Do not place foundation base until excavation is accepted by Engineer.

B. Excavate to elevations shown on Drawings, as needed to provide space for foundation base, forming level undisturbed surface, free of mud or soft material. Remove pockets of soft or otherwise unstable soils and replace with foundation backfill material or material as directed by Engineer. Prior to placing material over it, re-compact subgrade where indicated on Drawings, scarifying as needed, to 95 percent of maximum Standard Dry Density according to ASTM D 698. If specified level of compaction cannot be achieved, moisture condition subgrade and re-compact until 95 percent is achieved, over-excavate to provide minimum layer of 24 inches of foundation backfill material, or other means acceptable to Engineer.

C. Fill unauthorized excessive excavation with foundation backfill material or other material as directed by Engineer.

D. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition. Keep excavations free of standing water and completely free of water during concrete placement.

E. Remove soils which become unsuitable due to inadequate dewatering or other causes, after initial excavation to required subgrade, and replace with foundation backfill material, as directed by Engineer, at no additional cost to Owner.

F. Place foundation base, or foundation backfill material where needed, over subgrade on same day that excavation is completed to final grade. Where base of excavations are left open for longer periods, protect them with seal slab or cement-stabilized sand.

G. Use filter fabric to separate gravel aggregate, and other free draining Class I materials from native soils or select material backfill. Overlap fabric minimum of 12 inches beyond where another material stops contact with soil.

H. Place gravel aggregate, and other Class I materials, in uniform layers of 8-inch maximum thickness. Perform compaction by means of at least two passes of vibratory compactor.

3.07 FOUNDATION BASE.

A. Place foundation base after subgrade is properly prepared, including placement of foundation backfill where needed. Use foundation base consisting of 12-inch layer of gravel aggregate. Extend foundation base minimum of 12 inches beyond edge of structure foundation, unless shown otherwise on Drawings.

B. Where foundation base and foundation backfill are of same material, both can be placed in one operation.

3.08 BACKFILL

A. Complete backfill to surface of natural ground or to lines and grades shown on Drawings. Remove forms, lumber, trash and debris from structures. Use select fill for backfill. Existing material that qualifies as select material may be used, unless indicated otherwise on Drawings. Deposit backfill in uniform layers and compact each layer as specified.

B. Do not place backfill against concrete walls or similar structures until laboratory test breaks indicate that concrete has reached minimum of 85 percent of specified compressive strength. Where walls are supported by slabs or intermediate walls, do not begin backfill operations until slab or intermediate walls have been placed and concrete has attained sufficient strength.

C. Remove concrete forms before starting backfill and remove shoring and bracing as work progresses.

D. Maintain backfill material at no less than 2 percent below no more than 2 percent above optimum moisture content, unless otherwise approved by Engineer. Place fill material in uniform 8-inch maximum loose layers. Compact fill to at least 95 percent of maximum Standard Proctor Density according to ASTM D 698 below paved areas. Compact fill to at least 95 percent around structures below unpaved areas.

E. Where backfill is placed against sloped excavation surface, run compaction equipment across boundary of cut slope and backfill to form compacted slope surface for placement of next layer of backfill.

3.09 FIELD QUALITY CONTROL

A. Testing will be performed.

B. Tests will be performed initially on minimum of one different sample of each material type for plasticity characteristics, in accordance with ASTM D 4318, and for gradation characteristics, in accordance with Tex-101-E and Tex-110-E. Additional classification tests will be performed whenever there is noticeable change in material gradation or plasticity.

C. In-place density tests of compacted subgrade and backfill will be performed according to ASTM D 1556, or ASTM D 2922 and ASTM D 3017, and at following frequencies and conditions:

1. Minimum of one test for every 50 to 100 cubic yards of compacted backfill material as directed by Engineer.

2. A minimum of three density tests for each full work shift.

3. Density tests will be performed in all placement areas.

4. Number of tests will be increased when inspection determines that soil types or moisture contents are not uniform or when compacting effort is variable and not considered sufficient to attain uniform density.

5. Identify elevation of test with respect to natural ground.

6. Record approximate depth of lift tested.

D. At least one test for moisture-density relationships will be initially performed for each type of backfill material in accordance with ASTM D 698. Perform additional moisture-density relationship test once a month or whenever there is noticeable change in material gradation or plasticity.

E. When tests indicate work does not meet specified compaction requirements, recondition, re-compact, and retest at Contractor's expense.

END OF SECTION

Section 02317

# EXCAVATION AND BACKFILL FOR UTILITIES

## PART 1 G E N E R A L

### 1.01 SECTION INCLUDES

A. Excavation, trenching, foundation, embedment, and backfill for installation of utilities, including manholes and other pipeline structures.

### 1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No additional payment will be made for trench excavation, embedment and backfill under this Section. Include cost in the unit price for installed underground piping, sewer, conduit, or duct work.

2. No separate or additional payment will be made for surface water control, ground water control, or for excavation drainage. Include in the unit price for the installed piping, sewer, conduit, or duct work.

3. Concrete Encasement shall be measured and paid for by cubic yard, complete in place. Measurement shall be to the neat lines shown on the plans.

~~4. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

### 1.03 DEFINITIONS

A. Pipe Foundation: Suitable and stable native soils that are exposed at the trench subgrade after excavation to depth of bottom of the bedding as shown on the Drawings, or foundation backfill material placed and compacted in over-excavations.

B. Pipe Bedding: The portion of trench backfill that extends vertically from top of foundation up to a level line at bottom of pipe, and horizontally from one trench sidewall to opposite sidewall.

C. Haunching: The material placed on either side of pipe from top of bedding up to springline of pipe and horizontally from one trench sidewall to opposite sidewall.

D. Initial Backfill: The portion of trench backfill that extends vertically from springline of pipe (top of haunching) up to a level line 12 inches above top of pipe, and horizontally from one trench sidewall to opposite sidewall.

E. Pipe Embedment: The portion of trench backfill that consists of bedding, haunching and initial backfill.

F. Trench Zone: The portion of trench backfill that extends vertically from top of pipe embedment up to pavement subgrade or up to final grade when not beneath pavement.

G. Unsuitable Material: Unsuitable soil materials are the following:

1. Materials that are classified as ML, CL-ML, MH, PT, OH, and OL according to ASTM D 2487.

2. Materials that cannot be compacted to required density due to either gradation, plasticity, or moisture content.

3. Materials that contain large clods, aggregates, stones greater than 4 inches in any dimension, debris, vegetation, waste or any other deleterious materials.

4. Materials that are contaminated with hydrocarbons or other chemical contaminants.

H. Suitable Material: Suitable soil materials are those meeting specification requirements. Unsuitable soils meeting specification requirements for suitable soils after treatment with lime or cement are considered suitable, unless otherwise indicated.

I. Backfill: Suitable material meeting specified quality requirements, placed and compacted under controlled conditions.

J. Ground Water Control Systems: Installations external to trench, such as well points, eductors, or deep wells. Ground water control includes dewatering to lower ground water, intercepting seepage which would otherwise emerge from side or bottom of trench excavation, and depressurization to prevent failure or heaving of excavation bottom.

K. Surface Water Control: Diversion and drainage of surface water runoff and rain water away from trench excavation. Rain water and surface water accidentally entering trench shall be controlled and removed as a part of excavation drainage.

L. Excavation Drainage: Removal of surface and seepage water in trench by sump pumping and using a drainage layer, as defined in ASTM D 2321, placed on the foundation beneath pipe bedding or thickened bedding layer of Class I material.

M. Trench Conditions are defined with regard to the stability of trench bottom and trench walls of pipe embedment zone. Maintain trench conditions that provide for effective placement and compaction of embedment material directly on or against undisturbed soils or foundation backfill, except where structural trench support is necessary.

1. Dry Stable Trench: Stable and substantially dry trench conditions exist in pipe embedment zone as a result of typically dry soils or achieved by ground water control (dewatering or depressurization) for trenches extending below ground water level.

2. Stable Trench with Seepage: Stable trench in which ground water seepage is controlled by excavation drainage.

   a. Stable Trench with Seepage in Clayey Soils: Excavation drainage is provided in lieu of or to supplement ground water control systems to control seepage and provide stable trench subgrade in predominately clayey soils prior to bedding placement.

   b. Stable Wet Trench in Sandy Soils: Excavation drainage is provided in the embedment zone in combination with ground water control in predominately sandy or silty soils.

3. Unstable Trench: Unstable trench conditions exist in the pipe embedment zone if ground water inflow or high water content causes soil disturbances, such as sloughing, sliding, boiling, heaving or loss of density.

N. Subtrench: Subtrench is a special case of benched excavation. Subtrench excavation below trench shields or shoring installations may be used to allow placement and compaction of foundation or

embedment materials directly against undisturbed soils. Depth of a subtrench depends upon trench stability and safety as determined by the Contractor.

O. Trench Dam: A placement of low permeability material in pipe embedment zone or foundation to prohibit ground water flow along the trench.

P. Over-Excavation and Backfill: Excavation of subgrade soils with unsatisfactory bearing capacity or composed of otherwise unsuitable materials below top of foundation as shown on Drawings, and backfilled with foundation backfill material.

Q. Foundation Backfill Materials: Natural soil or manufactured aggregate of controlled gradation, and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as backfill to provide stable support for bedding. Foundation backfill materials may include concrete seal slabs.

R. Trench Safety Systems include both protective systems and shoring systems.

1. Trench Shield (Trench Box): A portable worker safety structure moved along the trench as work proceeds, used as a protective system and designed to withstand forces imposed on it by cave-in, thereby protecting persons within the trench. Trench shields may be stacked if so designed or placed in a series depending on depth and length of excavation to be protected.

2. Shoring System: A structure that supports sides of an excavation to maintain stable soil conditions and prevent cave-ins, or to prevent movement of the ground affecting adjacent installations or improvements.

3. Special Shoring: A shoring system meeting special shoring as specified in Paragraph 1.08, Special Shoring Design Requirements, for locations identified on the Drawings.

1.04 REFERENCES

A. ASTM C 12 - Standard Practice for Installing Vitrified Clay Pipe Lines.

B. ASTM D 558 - Test Methods for Moisture-Density Relations of Soil Cement Mixtures.

C. ASTM D 698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb (2.49-kg) Rammer and 12-in. (304.8-mm) Drop.

D. ASTM D 1556 - Test Method for Density in Place by the Sand-Cone Method.

E. ASTM D 2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.

F. ASTM D 2487 - Classification of Soils for Engineering Purposes.

G. ASTM D 2922 - Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

H. ASTM D 3017 - Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

I. ASTM D 4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

J. TxDOT Tex-101-E - Preparation of Soil and Flexible Base Materials for Testing.

K. TxDOT Tex-110-E - Determination of Particle Size Analysis of Soils.

L. Code of Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA).

1.05 SCHEDULING

A. Schedule work so that pipe embedment can be completed on the same day that acceptable foundation has been achieved for each section of pipe installation, manhole, or other structures.

1.06 SUBMITTALS

A. Conform to Submittal Procedures Section of this Project Manual.

B. Submit a written description for information only of the planned typical method of excavation, backfill placement and compaction, including:

1. Sequence of work and coordination of activities.

2. Selected trench widths.

3. Procedures for foundation and embedment placement, and compaction.

C. Submit a ground and surface water control plan in accordance with requirements in this Section.

D. Submit backfill material sources and product quality information in accordance with requirements of Section 02320 - Utility Backfill Materials.

E. Submit a trench excavation safety program in accordance with OSHA. Include designs for special shoring meeting the requirements defined in Paragraph 1.08, Special Shoring Design Requirements.

F. Submit record of location of utilities as installed, referenced to survey control points. Include locations of utilities encountered or rerouted. Give stations, horizontal dimensions, elevations, inverts, and gradients.

1.07 TESTS

A. Testing and analysis of backfill materials for soil classification and compaction during construction will be performed by an independent laboratory.

B. Perform backfill material source qualification testing in accordance with requirements of Section 02320- Utility Backfill Materials.

1.08 SPECIAL SHORING DESIGN REQUIREMENTS

A. Have special shoring designed or selected by the Contractor's Professional Engineer to provide support for the sides of the excavations, including soils and hydrostatic ground water pressures as applicable, and to prevent ground movements affecting adjacent installations or improvements such as structures, pavements and utilities. Special shoring may be a pre-manufactured system selected by the Contractor’s Professional Engineer to meet the project site requirements based on the manufacturer’s standard design.

PART 2 P R O D U C T S

2.01 EQUIPMENT

A. Perform excavation with hydraulic excavator or other equipment suitable for achieving the requirements of this Section.

B. Use only hand-operated tamping equipment until a minimum cover of 12 inches is obtained over pipes, conduits, and ducts. Do not use heavy compacting equipment until adequate cover is attained to prevent damage to pipes, conduits, or ducts.

C. Use trench shields or other protective systems or shoring systems which are designed and operated to achieve placement and compaction of backfill directly against undisturbed native soil.

D. Use special shoring systems where required which may consist of braced sheeting, braced soldier piles and lagging, slide rail systems, or other systems meeting requirements as specified in Paragraph 1.09, Shoring Design Requirements.

2.02 MATERIAL CLASSIFICATIONS

A. Embedment and Trench Zone Backfill Materials: Conform to classifications and product descriptions of Section 02320 - Utility Backfill Materials.

B. Concrete Encasement and Backfill: Conform to requirements for Class B concrete as specified in Section 03315 - Concrete for Utility Construction.

C. Concrete for Trench Dams: Concrete backfill or 3 sack premixed (bag) concrete.

D. Timber Shoring Left in Place: Untreated oak.

PART 3 E X E C U T I O N

3.01 STANDARD PRACTICE

A. Install flexible pipe, including "semi-rigid" pipe, to conform to standard practice described in ASTM D 2321, and as described in this Section. Where an apparent conflict occurs between the standard practice and the requirements of this Section, this Section governs.

B. Install rigid pipe to conform with standard practice described in ASTM C 12, and as described in this Section. Where an apparent conflict occurs between the standard practice and the requirements of this Section, this Section governs.

3.02 PREPARATION

A. Establish traffic control to conform with Brooks County I.S.D., City and State requirements. Maintain barricades and warning lights for streets and intersections affected by the Work, and is considered hazardous to traffic movements.

B. Perform work to conform with applicable safety standards and regulations. Employ a trench safety system as required by OSHA.

C. Immediately notify the agency or company owning any existing utility line which is damaged, broken, or disturbed. Obtain approval from the Resident Project Representative and agency for any repairs or relocations, either temporary or permanent.

D. Remove existing pavements and structures, including sidewalks and driveways, to conform with requirements of Section 02221 - Removing Existing Pavements and Structures, as applicable.

E. Install and operate necessary dewatering and surface water control measures.

F. Maintain permanent benchmarks, monumentation, and other reference points. Unless otherwise directed in writing, replace those which are damaged or destroyed.

3.03 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other permanent objects outside of grading limits and within the grading limits as designated on the Drawings.

B. Protect and support above-grade and below-grade utilities which are to remain.

C. Restore damaged permanent facilities to pre-construction conditions unless replacement or abandonment of facilities are indicated on the Drawings.

D. Take measures to minimize erosion of trenches. Do not allow water to pond in trenches. Where slides, washouts, settlements, or areas with loss of density or pavement failures or potholes occur, repair, recompact, and pave those areas at no additional cost to Owner.

3.04 EXCAVATION

A. Except as otherwise specified or shown on the Drawings, install underground utilities in open cut trenches with vertical sides. Open cut excavation does not include the use of explosives or headache balls. The use of explosives or headache balls is prohibited.

B. Perform excavation work so that pipe, conduit, and ducts can be installed to depths and alignments shown on the Drawings. Avoid disturbing surrounding ground and existing facilities and improvements.

C. Determine trench excavation widths using the following schedule as related to pipe outside diameter (O.D.). Maximum trench width shall be the minimum trench width plus 24 inches.

| Nominal Pipe Size, Inches | Minimum Trench Width, Inches |
|---|---|
| Less than 18 | O.D. + 18 |
| 18 to 30 | O.D. + 24 |
| Greater than 30 | O.D. + 36 |

D. Use sufficient trench width or benches above the embedment zone for installation of well point headers or manifolds and pumps where depth of trench makes it uneconomical or impractical to pump from the surface elevation. Provide sufficient space between shoring cross braces to permit equipment operations and handling of forms, pipe, embedment and backfill, and other materials.

E. Upon discovery of unknown utilities, badly deteriorated utilities not designated for removal, or concealed conditions, discontinue work at that location. Notify the Resident Project Representative and obtain instructions before proceeding.

F. Shoring of Trench Walls.

1. Install Special Shoring in advance of trench excavation or simultaneously with the trench excavation, so that the soils within the full height of the trench excavation walls will remain laterally supported at all times.

2. For all types of shoring, support trench walls in the pipe embedment zone throughout the installation. Provide trench wall supports sufficiently tight to prevent washing the trench wall soil out from behind the trench wall support.

3. Unless otherwise directed by the Engineer, leave sheeting driven into or below the pipe embedment zone in place to preclude loss of support of foundation and embedment materials. Leave rangers, walers, and braces in place as long as required to support sheeting, which has been cut off, and the trench wall in the vicinity of the pipe zone.

4. Employ special methods for maintaining the integrity of embedment or foundation material. Before moving supports, place and compact embedment to sufficient depths to provide protection of pipe and stability of trench walls. As supports are moved, finish placing and compacting embedment.

5. If sheeting or other shoring is used below top of the pipe embedment zone, do not disturb pipe foundation and embedment materials by subsequent removal. Maximum thickness of removable sheeting extending into the embedment zone shall be the equivalent of a 1-inch-thick steel plate. Fill voids left on removal of supports with compacted backfill material.

G. Use of Trench Shields. When a trench shield (trench box) is used as a worker safety device, the following requirements apply:

1. Make trench excavations of sufficient width to allow shield to be lifted or pulled freely, without damage to the trench sidewalls.

2. Move trench shields so that pipe, and backfill materials, after placement and compaction, are not damaged nor disturbed, nor the degree of compaction reduced.

3. When required, place, spread, and compact pipe foundation and bedding materials beneath the shield. For backfill above bedding, lift the shield as each layer of backfill is placed and spread. Place and compact backfill materials against undisturbed trench walls and foundation.

4. Maintain trench shield in position to allow sampling and testing to be performed in a safe manner.

## 3.05 HANDLING EXCAVATED MATERIALS

A. Use only excavated materials which are suitable as defined in this Section and conforming with Section 02320 - Utility Backfill Materials. Place material suitable for backfilling in stockpiles at a distance from the trench to prevent slides or cave-ins.

B. When required, provide additional backfill material conforming with requirements of Section 02320 - Utility Backfill Materials.

C. Do not place stockpiles of excess excavated materials on streets and adjacent properties. Protect excess stockpiles for use on site.

## 3.06 GROUND WATER CONTROL

A. Implement ground water control if needed. Provide a stable trench to allow installation in accordance with the Specifications.

## 3.07 TRENCH FOUNDATION

A. Excavate bottom of trench to uniform grade to achieve stable trench conditions and satisfactory compaction of foundation or bedding materials.

B. Place trench dams in Class I foundations in line segments longer than 100 feet between manholes, and not less than one in every 500 feet of pipe placed. Install additional dams as needed to achieve workable construction conditions. Do not place trench dams closer than 5 feet from manholes.

3.08 PIPE EMBEDMENT, PLACEMENT, AND COMPACTION

A. Immediately prior to placement of embedment materials, the bottoms and sidewalls of trenches shall be free of loose, sloughing, caving, or otherwise unsuitable soil.

B. Place embedment including bedding, haunching, and initial backfill as shown on Drawings.

C. For pipe installation, manually spread embedment materials around the pipe to provide uniform bearing and side support when compacted. Do not allow materials to free-fall from heights greater than 24 inches above top of pipe. Perform placement and compaction directly against the undisturbed soils in the trench sidewalls, or against sheeting which is to remain in place.

D. Do not place trench shields or shoring within height of the embedment zone unless means to maintain the density of compacted embedment material are used. If moveable supports are used in embedment zone, lift the supports incrementally to allow placement and compaction of the material against undisturbed soil.

E. Place geotextile to prevent particle migration from the in-situ soil into open-graded (Class I) embedment materials or drainage layers.

F. Do not damage coatings or wrappings of pipes during backfilling and compacting operations. When embedding coated or wrapped pipes, do not use crushed stone or other sharp, angular aggregates.

G. Place haunching material manually around the pipe and compact it to provide uniform bearing and side support. If necessary, hold small-diameter or lightweight pipe in place during compaction of haunch areas and placement beside the pipe with sand bags or other suitable means.

H. Place electrical conduit, if used, directly on foundation without bedding.

I. Shovel in-place and compact embedment material using pneumatic tampers in restricted areas, and vibratory-plate compactors or engine-powered jumping jacks in unrestricted areas. Compact each lift before proceeding with placement of next lift. Neither water tamping nor jetting are allowed.

J. For water line construction embedment, use bank run sand, concrete sand, gem sand, pea gravel, or crushed limestone as specified in Section 02320 - Utility Backfill Material.

K. Place trench dams in Class I embedments in line segments longer than 100 feet between manholes, and not less than one in every 500 feet of pipe placed. Install additional dams as needed to achieve workable construction conditions. Do not place trench dams closer than 5 feet from manholes.

L. The Contractor shall provide whatever means and materials are required to prevent pipe flotation at no separate pay.

3.09 TRENCH ZONE BACKFILL PLACEMENT AND COMPACTION

A. Place backfill for pipe or conduits and restore surface as soon as practicable. Leave only the minimum length of trench open as necessary for construction.

B. Where damage to completed pipe installation work is likely to result from withdrawal of sheeting, leave the sheeting in place. Cut off sheeting 1.5 feet or more above the crown of the pipe. Remove trench supports within 5 feet from the ground surface.

C. When shown on Drawings, a random backfill of suitable material may be used in trench zone for trench excavations outside pavements.

D. Place trench zone backfill in lifts and compact by methods selected by the Contractor. Fully compact each lift before placement of the next lift.

1. Bank run sand.

a. Maximum 9-inches compacted lift thickness.

b. Compaction by vibratory equipment to a minimum of 95 percent of the maximum dry density determined according to ASTM D 698.

c. Moisture content within 3 percent of optimum determined according to ASTM D 698

2. Cement-stabilized sand.

a. Maximum lift thickness determined by Contractor to achieve uniform placement and required compaction, but not exceeding 24 inches.

b. Compaction by vibratory equipment to a minimum of 95 percent of the maximum dry density determined according to ASTM D 558.

c. Moisture content on the dry side of optimum determined according to ASTM D 558 but sufficient for cement hydration.

3. Select fill.

a. Maximum 6-inches compacted lift thickness.

b. Compaction by equipment providing tamping or kneading impact to a minimum of 95 percent of the maximum dry density determined according to ASTM D 698.

c. Moisture content within 2 percent of optimum determined according to ASTM D 698.

E. For trench excavations outside pavements, a random backfill of suitable material may be used in the trench zone.

1. Fat clays (CH) may be used as trench zone backfill outside paved areas at the Contractor's option. If the required density is not achieved, the Contractor, at his option and at no additional cost to the Owner, may use lime stabilization to achieve compaction requirements or use a different suitable material.

2. Maximum 9-inch compacted lift thickness for clayey soils and maximum 12-inch lift thickness for granular soils.

3. Compact to a minimum of 90 percent of the maximum dry density determined according to ASTM D 698.

4. Moisture content as necessary to achieve density.

F. Concrete encasement shall be placed at locations shown on the drawings and as directed by the Resident Project Representative.

G. For electric conduits, remove form work used for construction of conduits before placing trench zone backfill.

3.10 MANHOLES, JUNCTION BOXES, AND OTHER PIPELINE STRUCTURES

A. Meet the requirements of adjoining utility installations for backfill of pipeline structures, as shown on the Drawings.

3.11 FIELD QUALITY CONTROL

A. Test for material source qualifications as defined in Section 02320 - Utility Backfill Materials.

B. Provide excavation and trench safety systems at locations and to depths required for testing and retesting during construction at no additional cost to Owner.

C. Tests will be performed on a minimum of three different samples of each material type for plasticity characteristics, in accordance with ASTM D 4318, and for gradation characteristics, in accordance with Tex-101-E and Tex-110-E. Additional classification tests will be performed whenever there is a noticeable change in material gradation or plasticity.

D. At least three tests for moisture-density relationships will be performed initially for backfill materials in accordance with ASTM D 698, and for cement- stabilized sand in accordance with ASTM D 558. Additional moisture-density relationship tests will be performed whenever there is a noticeable change in material gradation or plasticity.

E. In-place density tests of compacted pipe foundation, embedment and trench zone backfill soil materials will be performed according to ASTM D 1556, or ASTM D 2922 and ASTM D 3017, and at the following frequencies and conditions.

1. A minimum of one test for every 100 Linear feet of trench of compacted embedment and compacted trench zone backfill material.

2. A minimum of three density tests for each full shift of Work.

3. Density tests will be distributed among the placement areas. Placement areas are: foundation, bedding, haunching, initial backfill and trench zone.

4. The number of tests will be increased if inspection determines that soil type or moisture content are not uniform or if compacting effort is variable and not considered sufficient to attain uniform density, as specified.

5. Density tests may be performed at various depths below the fill surface by pit excavation. Material in previously placed lifts may therefore be subject to acceptance/rejection.

6. Two verification tests will be performed adjacent to in-place tests showing density less than the acceptance criteria. Placement will be rejected unless both verification tests show acceptable results.

7. Recompacted placement will be retested at the same frequency as the first test series, including verification tests.

F. Recondition, recompact, and retest at Contractor's expense if tests indicate Work does not meet specified compaction requirements. For hardened soil cement with non-conforming density, core and test for compressive strength at Contractor's expense.

G. Acceptability of crushed rock compaction will be determined by inspection.

3.12 DISPOSAL OF EXCESS MATERIAL

A. Dispose of excess materials in accordance with requirements of Waste Material Disposal

END OF SECTION

Section 02320

UTILITY BACKFILL MATERIALS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Material Classifications.

B. Utility Backfill Materials:
Concrete sand
Gem sand
Pea gravel
Crushed stone
Crushed concrete
Bank run sand
Select backfill
Random backfill

C. Material Handling and Quality Control Requirements.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No payment will be made for backfill material under this Section. Include payment in unit price for applicable utility installation.~~

~~2. Payment for backfill material, when included as a separate pay item, is on a cubic yard basis for material placed and compacted within theoretical trench width limits and thickness of material according to Drawings.~~

~~3. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 DEFINITIONS

A. Unsuitable Material: Unsuitable soil materials are the following:

1. Materials that are classified as ML, CL-ML, MH, PT, OH, and OL according to ASTM D 2487.

2. Materials that cannot be compacted to the required density due to either gradation, plasticity, or moisture content.

3. Materials that contain large clods, aggregates, or stones greater than 4 inches in any dimension; debris, vegetation, and waste; or any other deleterious materials.

4. Materials that are contaminated with hydrocarbons or other chemical contaminants.

B. Suitable Material: Suitable soil materials are the following:

1. Those meeting specification requirements.

2. Unsuitable soils meeting specification requirements for suitable soils after treatment with lime or cement.

C. Foundation Backfill Materials: Natural soil or manufactured aggregate meeting Class I A requirements and geotextile filter fabrics as required, to control drainage and material separation. Foundation backfill material is placed and compacted as backfill where needed to provide stable support for the structure foundation base. Foundation backfill materials may include concrete fill and seal slabs.

D. Foundation Base: Crushed stone aggregate with filter fabric as required, cement stabilized sand, or concrete seal slab. The foundation base provides a smooth, level working surface for the construction of the concrete foundation.

E. Backfill Material: Classified soil material meeting specified quality requirements for the designated application as embedment or trench zone backfill.

F. Embedment Material: Soil material placed under controlled conditions within the embedment zone extending vertically upward from top of foundation to an elevation 12 inches above top of pipe, and including pipe bedding, haunching, and initial backfill.

G. Trench Zone Backfill: Classified soil material meeting specified quality requirements and placed under controlled conditions in the trench zone from top of embedment zone to base course in paved areas or to the surface grading material in unpaved areas.

H. Foundation: Either suitable soil of the trench bottom, or material placed as backfill of over-excavation for removal and replacement of unsuitable or otherwise unstable soils.

I. Source: A source selected by the Contractor for supply of embedment or trench zone backfill material. A selected source may be the project excavation, off-site borrow pits, commercial borrow pits, or sand and aggregate production or manufacturing plants.

J. Refer to Section 02317 - Excavation and Backfill for Utilities for other definitions regarding utility installation by trench construction.

1.04 REFERENCES

A. ASTM C 33 - Specification for Concrete Aggregate.

B. ASTM C 40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.

C. ASTM C 123 - Test Method for Lightweight Pieces in Aggregate.

D. ASTM C 131 - Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

E. ASTM C 136 - Test Method for Sieve Analysis of Fine and Coarse Aggregates.

F. ASTM C 142 - Test Method for Clay Lumps and Friable Particles in Aggregates.

G. ASTM D 1140 - Test Method for Amount of Materials in Soils Finer Than No. 200 Sieve.

H. ASTM D 2487 - Classification of Soils for Engineering Purposes (Unified Soil Classification System).

I. ASTM D 2488 - Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

J. ASTM D 4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

K. ASTM D 4643 - Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Method.

L. TxDOT Tex-101-E - Preparation of Soil and Flexible Base Materials for Testing.

M. TxDOT Tex-104-E - Test Method for Determination of Liquid Limit of Soils (Part 1)

N. TxDOT Tex-106-E - Test Method - Methods of Calculating Plasticity Index of Soils.

O. TxDOT Tex-110-E - Determination of Particle Size Analysis of Soils.

1.05 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit a description of source, material classification and product description, production method, and application of backfill materials.

C. Submit test results for samples of off-site backfill materials to comply with Paragraph 2.03, Materials Testing.

D. Before stockpiling materials, submit a copy of temporary easement or approval from landowner for stockpiling backfill material on private property.

E. For each delivery of material, provide a delivery ticket which includes source location.

1.06 TESTS

A. Perform tests of sources for backfill material in accordance with Paragraph 2.03.

B. Verification tests of backfill materials may be performed by the Owner in accordance with Paragraph 3.03.

C. Random fill obtained from the project excavation as source is exempt from pre-qualification requirements by Contractor but must be inspected by Owner's testing lab for unacceptable materials based on ASTM D 2488.

PART 2 P R O D U C T S

2.01 MATERIAL CLASSIFICATIONS

A. Materials for backfill shall be classified for the purpose of quality control in accordance with the Unified Soil Classification Symbols as defined in ASTM D 2487. Material use and application is defined in utility installation specifications and Drawings either by class, as described in Paragraph 2.01B, or by product descriptions, as given in Paragraph 2.02.

B. Class Designations Based on Laboratory Testing:

1. Class IA. Class IA materials shall be manufactured aggregates with an open graduation. Materials shall consist of angular, crushed stone or rock, or crushed gravel. Class IA embedment material shall have a large void content and contain little or no fines. 100% of the material shall pass a 1 ½ " sieve, up to 10% shall pass a No. 4 sieve, and no more than 5% shall pass a No. 200 sieve. Class IA materials used for foundation, replacement of over-

excavation, or in the pipe embedment zone shall be wrapped in one layer of geotextile filter cloth when groundwater is present in the excavated trench and the trench walls in the pipe embedment zone are composed of fine granular soils. Filter cloth shall be Poly-Filter GB, Nicolon 70/20, or Nicolon 40/30A.

2. Class IB. Class IB materials shall be manufactured / processed aggregates with a dense graduation. Materials shall consist of angular, crushed stone (or other Class IA materials) and stone/sand mixtures and contain little or no fines. 100% of the material shall pass a 1 ½ " sieve, up to 50% shall pass a No. 4 sieve, and no more than 5% shall pass a No. 200 sieve.

3. Class II. Class II materials shall be clean, coarse-grained soils classified as GW, GP, SW, or SP soil groups under ASTM D 2487 or coarse-grained soils which are borderline clean to with fines classified as GW-GC or SP-SM under ASTM D 2487. 100% of the GW, GP, SW, SP, GW-CC, and SP-SM soils shall pass a 1 ½ " sieve. Up to 50% of the GW and GP coarse fraction (material retained on a No. 200 sieve) shall pass a No. 4 sieve. Up to 5% of the GW, GP, SW, and SP soils shall pass a No. 200 sieve. Between 5% and 12% of the GW-CC and SP-SM soils shall pass a No. 200 sieve.

4. Class III. Class III materials shall be coarse-grained soils with fines. The soils shall be classified as GM, GC, SM, or SC soil groups under ASTM D 2487. 100% of the GM, GC, SM, and SC soils shall pass a 1 ½ " sieve. Up to 50% of the GM and GC coarse fractions (material retained on a No. 200 sieve) shall pass a No. 4 sieve. At least 50% of the SM and SC coarse fractions shall pass a No. 4 sieve. Between 12% and 50% of the GM, GC, SM, and SC soils shall pass a No. 200 sieve.

2.02 PRODUCT DESCRIPTIONS

A. Soils classified as silt (ML), elastic silt (MH), organic clay and organic silt (OL, OH), and organic matter (PT) are not acceptable as backfill materials. These soils may be used for site grading and restoration in unimproved areas as approved by the Resident Project Representative. Soils in Class IVB, fat clay (CH) may be used as backfill materials where allowed by the applicable backfill installation specification. Refer to Section 02316 - Excavation and Backfill for Structures and Section 02317 - Excavation and Backfill for Utilities.

B. Provide backfill material that is free of stones greater than 6 inches, free of roots, waste, debris, trash, organic material, unstable material, non-soil matter, hydrocarbon or other contamination, conforming to the following limits for deleterious materials:

1. Clay lumps: Less than 0.5 percent for Class I, and less than 2.0 percent for Class II, when tested in accordance with ASTM C 142.

2. Lightweight pieces: Less than 5 percent when tested in accordance with ASTM C 123.

3. Organic impurities: No color darker than standard color when tested in accordance with ASTM C 40.

C. Manufactured materials, such as crushed concrete, may be substituted for natural soil or rock products where indicated in the product specification, and approved by Engineer, provided that the physical property criteria are determined to be satisfactory by testing.

D. Bank Run Sand: Durable bank run sand classified as SP, SW, or SM by the Unified Soil Classification System (ASTM D 2487) meeting the following requirements:

1. Less than 15 percent passing the number 200 sieve when tested in accordance with ASTM D 1140. The amount of clay lumps or balls not exceeding 2 percent.

2. Material passing the number 40 sieve shall meet the following requirements when tested in accordance with ASTM D 4318:

   a. Liquid limit: not exceeding 25 percent.

   b. Plasticity index: not exceeding 7.

E. Concrete Sand: Natural sand, manufactured sand, or a combination of natural and manufactured sand conforming to the requirements of ASTM C 33 and graded within the following limits when tested in accordance with ASTM C 136:

| Sieve | Percent Passing |
|---|---|
| 3/8" | 100 |
| No. 4 | 95 to 100 |
| No. 8 | 80 to 100 |
| No. 16 | 50 to 85 |
| No. 30 | 25 to 60 |
| No. 50 | 10 to 30 |
| No. 100 | 2 to 10 |

F. Gem Sand: Sand conforming to the requirements of ASTM C 33 for course aggregates specified for number 8 size and graded within the following limits when tested in accordance with ASTM C 136:

| Sieve | Percent Passing |
|---|---|
| 3/8" | 95 to 100 |
| No. 4 | 60 to 80 |
| No. 8 | 15 to 40 |

G. Pea Gravel: Durable particles composed of small, smooth, rounded stones or pebbles and graded within the following limits when tested in accordance with ASTM C 136:

| Sieve | Percent Passing |
|---|---|
| 1/2” | 100 |
| 3/8” | 85 to100 |
| No. 4 | 10 to 30 |
| No. 8 | 0 to 10 |
| No.16 | 0 to 5 |

H. Crushed Aggregates: Crushed aggregates consist of durable particles obtained from an approved source and meeting the following requirements:

1. Materials of one product delivered for the same construction activity from a single source.

2. Non-plastic fines.

3. Los Angeles abrasion test wear not exceeding 45 percent when tested in accordance with ASTM C 131.

4. Crushed aggregate shall have a minimum of 90 percent of the particles retained on the No. 4 sieve with 2 or more crushed faces as determined by Test Method Tex-460-A, Part I.

5. Crushed stone: Produced from oversize plant processed stone or gravel, sized by crushing to predominantly angular particles from a naturally occurring single source. Uncrushed gravel are not acceptable materials for embedment where crushed stone is shown on the applicable utility embedment drawing details.

6. Crushed Concrete: Crushed concrete is an acceptable substitute for crushed stone as utility backfill. Gradation and quality control test requirements are the same as crushed stone. Provide crushed concrete produced from normal weight concrete of uniform quality; containing particles of aggregate and cement material, free from other substances such as asphalt, reinforcing steel fragments, soil, waste gypsum (calcium sulfate), or debris.

7. Gradations, as determined in accordance with Tex-110-E.

| Sieve | Percent Passing by Weight for Pipe Embedment by Ranges of Nominal Pipes Sizes | | |
|---|---|---|---|
| | >15" | 15" - 8" | <8" |
| 1" | 95 - 100 | 100 | - |
| 3/4" | 60 - 90 | 90 - 100 | 100 |
| 1/2" | 25 - 60 | - | 90 - 100 |
| 3/8" | - | 20 - 55 | 40 - 70 |
| No. 4 | 0 - 5 | 0 - 10 | 0 - 15 |
| No. 8 | - | 0 - 5 | 0 - 5 |

I. Select Backfill: Class III clayey gravel or sand or Class IV lean clay with a plasticity index between 7 and 20.

J. Random Backfill: Any suitable soil or mixture of soils within Classes I, II, III and IV; or fat clay (CH) where allowed by the applicable backfill installation specification. Refer to Section 02316 - Excavation and Backfill for Structures and Section 02317 - Excavation and Backfill for Utilities.

K. Cement Stabilized Sand: Conform to requirements of Section 02321 - Cement Stabilized Sand.

L. Concrete Backfill: Conform to Class B concrete as specified in Section 03315 - Concrete for Utility Construction.

2.03 MATERIALS TESTING

A. Ensure that material selected, produced and delivered to the project meets applicable specifications and is of sufficient uniform properties to allow practical construction and quality control.

B. Source or Supplier Qualification. Perform testing, or obtain representative tests by suppliers, for selection of material sources and products. Provide test results for a minimum of three samples for each source and material type. Tests samples of processed materials from current production representing material to be delivered. Tests shall verify that the materials meet specification requirements. Repeat qualification test procedures each time the source characteristic changes or there is a planned change in source location or supplier. Qualification tests shall include, as applicable:

1. Gradation. Complete sieve analyses shall be reported regardless of the specified control sieves. The range of sieves shall be from the largest particle through the No. 200 sieve.

2. Plasticity of material passing the No. 40 sieve.

3. Los Angeles abrasion wear of material retained on the No. 4 sieve.

4. Clay lumps.

5. Lightweight pieces

6. Organic impurities

C. Production Testing. Provide reports to the Engineer from an independent testing laboratory that backfill materials to be placed in the Work meet applicable specification requirements.

D. Deliver material samples for verification testing to the site of the Work.

PART 3 E X E C U T I O N

3.01 SOURCES

A. Use of material encountered in the trench excavations is acceptable, provided applicable specification requirements are satisfied. If excavation material is not acceptable, provide from other approved source.

B. Identify off-site sources for backfill materials at least 14 days ahead of intended use and deliver samples for verification testing to the site of the Work.

C. Obtain approval for each material source by the Engineer before delivery is started. If sources previously approved do not produce uniform and satisfactory products, furnish materials from other approved sources. Materials may be subjected to inspection or additional verification testing after delivery. Materials which do not meet the requirements of the specifications will be rejected. Do not use material which, after approval, has become unsuitable for use due to segregation, mixing with other materials, or by contamination. Once a material is approved by the Engineer, expense for sampling and testing required to change to a different material will be credited to the Owner through a change order.

D. Bank run sand, select backfill, and random backfill, if available in the project excavation, may be obtained by selective excavation and acceptance testing. Obtain additional quantities of these materials and other materials required to complete the work from off-site sources.

E. The Owner does not represent or guarantee that any soil found in the excavation work will be suitable or acceptable as backfill material.

3.02 MATERIAL HANDLING

A. When backfill material is obtained from either a commercial or non-commercial borrow pit, open the pit to expose the vertical faces of the various strata for identification and selection of approved material to be used. Excavate the selected material by vertical cuts extending through the exposed strata to achieve uniformity in the product.

B. Establish temporary stockpile locations for practical material handling and control, and verification testing in advance of final placement. Obtain approval from landowner for storage of backfill material on adjacent private property.

C. When stockpiling backfill material near the project site, use appropriate covers to eliminate blowing of materials into adjacent areas and prevent runoff containing sediments from entering the drainage system.

D. Place stockpiles in layers to avoid segregation of processed materials. Load material by making successive vertical cuts through entire depth of stockpile.

3.03 FIELD QUALITY CONTROL

A. Quality Control

1. The Resident Project Representative may sample and test backfill at:

a. Sources including borrow pits, production plants and Contractor's designated off-site stockpiles.

b. On-site stockpiles.

c. Materials placed in the Work.

2. The Resident Project Representative may resample material at any stage of work or location if changes in characteristics are apparent.

B. Production Verification Testing: The project testing laboratory will provide verification testing on backfill materials, as directed by the Resident Project Representative. Samples may be taken at the source or at the production plant, as applicable.

END OF SECTION

Section 02330

EMBANKMENT

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Construction of embankments with excess excavated material and borrow.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for material embankment under this section. Include payment in unit price for excavation or borrow.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM D 698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft$^3$ (600 kN-m/m$^3$)).

B. ASTM D 2922 – Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

C. ASTM D 3017 – Standard Test Method for Water content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

PART 2 P R O D U C T S

2.01 MATERIALS

A. Refer to Section 02315 – Roadway Excavation for acceptable excess materials from roadway excavation.

B. Refer to Section 02317 – Excavation and Backfill For Utilities for acceptable excess materials from utility excavation and trenching.

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify borrow and excess excavated materials to be reused are approved.

B. Verify removals and clearing and grubbing operations have been completed.

3.02 PREPARATION

A. Backfill tests pits, stump holes, small swales and other surface irregularities. Backfill and compact in designated lift depths to requirements for embankment compaction.

B. Record location and plug and fill inactive water and oil wells. Conform to Texas State Health Department, Texas Commission on Environmental Quality and Texas Railroad Commission requirements. Notify Project Manager prior to plugging wells.

C. Excavate and dispose of unsuitable soil and other unsuitable materials which will not consolidate. Backfill and compact to requirements for embankment. Unsuitable soil is defined in Section 02316 – Excavation and Backfill for Structures and Section 02320 – Utility Backfill Materials.

D. Backfill new utilities below future grade. Conform to requirements of each respective section.

3.03 PROTECTION

A. Protect trees, shrubs, lawns, existing structures, and other features outside of embankment limits.

B. Protect utilities above and below grade, which are to remain.

C. Conform to protection requirements of Section 02315 – Roadway Excavation.

3.04 PLACING EMBANKMENT

A. Do not conduct placement operations during inclement weather or when existing ground or fill materials exceed 3 percent of optimum moisture content. Contractor may manipulate wet material to facilitate drying, by disking or windrowing.

B. Do not place embankment fill until density and moisture content of previously placed material comply with the specified requirements.

C. Scarify areas to be filled to minimum depth of 4 inches to bond existing and new materials. Mix with first fill layer.

D. Spread fill material evenly, from dumped piles or windrows, into horizontal layers approximately parallel to finished grade. Place to meet specified compacted thickness. Break clods and lumps and mix materials by blading, harrowing, disking or other approved method. Extend each layer across full width of fill.

E. Each layer shall be homogenous and contain uniform moisture content before compaction. Mix dissimilar abutting materials to prevent abrupt changes in composition of fill.

F. Layers shall not exceed the following compacted thickness:

1. Areas indicated to be under future paving or shoulders, to be constructed within 6 months: 6 inches when compacted with pneumatic rollers, or 8 inches when compacted with other rollers.

2. Other areas: 12 inches

G. For steep slopes, cut benches into slope and scarify before placing fill. Place increasingly wider horizontal layers of specified depth to level of each bench.

H. Build embankment layers on back slopes, adjacent to existing roadbeds, to level of old roadbed. Scarify top of old roadbed to minimum depth of 4 inches and recompact with next fill layer.

I. Construct to lines and grades shown on Drawings.

J. Remove unsuitable material and excess soil not being used for embankment from site in accordance with requirements of Section 01576 – Waste Material Disposal.

K. Maintain moisture content of embankment materials to attain required density.

L. Compact to following minimum densities at moisture content of optimum to 3 percent above optimum as determined by ASTM D 698, unless otherwise indicated on Drawings:

1. Areas under future paving and shoulders: Minimum density of 95 percent of maximum dry density.

2. Other areas: Minimum density of 90 percent of maximum dry density.

3.05 TOLERANCES

A. Top of Compacted Surface: Plus or minus 1/2 inch in cross section or 16 foot length.

3.06 FIELD QUALITY CONTROL

A. Compaction testing will be performed in accordance with ASTM D 698 or ASTM D 2922 and ASTM D 3017 under provisions of Section 01454 - Testing Laboratory Services.

B. A minimum of three tests will be taken for each 1000 linear feet per lane of roadway or 500 square yards of embankment per lift.

C. If tests indicate work does not meet specified compaction requirements, recondition, recompact, and retest at no additional cost to the Owner.

END OF SECTION

# SECTION 02362

# TERMITE CONTROL

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
   1. Soil treatment for termite control.

B. Related Sections:
   1. Section 02055 - Soils for Earthwork: Backfill materials.
   2. Section 02315 - Excavation and Fill: Subgrade preparation.
   3. Section 03300 - Cast-In-Place Concrete: Slabs on grade and foundations placed over treated soil.

### 1.2 REFERENCES

A. Environmental Protection Agency:
   1. EPA FIFRA - Federal Insecticide, Fungicide and Rodenticide Act.

B. National Pest Management Association:
   1. NPMA WDO - Wood Destroying Organism Library.

### 1.3 SUBMITTALS

A. Product Data: Submit toxicants to be used, composition by percentage, dilution schedule, intended application rate. Include product label information.

B. Test Reports: Indicate regulatory agency approval reports.

C. Manufacturer's Application Instructions: Indicate caution requirements and in accordance with current product label of chosen pesticide.

D. Certify applications followed NPMA WDO for termite control or other regional location guidance.

### 1.4 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record moisture content of soil before application, date and rate of application, areas of application, diary of toxicity meter readings and corresponding soil coverage.

B. Operation and Maintenance Data: Indicate re-treatment schedule.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Applicator: Company specializing in performing the Work of this sectionand licensed in State of Texas.

1.6 SEQUENCING

A. Section 01100 - Summary: Work sequence.

B. Apply toxicant immediately prior to installation of vapor barrier under slabs-on-grade in accordance with product label supplemented by the NPCA’s ARP for termiticiding or local requirements.

1.7 WARRANTY

A. Warranty: Include coverage for damage and repairs to building and building contents caused by termites. Repair damage. Re-treat where required.

PART 2 PRODUCTS

2.1 MATERIALS

A. Toxicant Chemical: EPA FIFRA approved; synthetically color dyed to permit visual identification of treated soil.

B. Diluent: Recommended by toxicant manufacturer.

2.2 MIXES

A. Mix toxicant to manufacturer's instructions.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements:Verification of existing conditions before starting work.

B. Verify soil surfaces are unfrozen, sufficiently dry to absorb toxicant, and ready to receive treatment.

C. Verify final grading and excavation are complete.

3.2 APPLICATION

A. Apply toxicant at locations indicated in Schedule at end of section.

B. Apply extra treatment to structure penetration surfaces including pipe or ducts, and soil penetrations including grounding rods or posts.

C. Re-treat disturbed treated soil with same toxicant as original treatment.

D. When inspection or testing identifies presence of termites, re-treat soil and re-test.

3.3 PROTECTION OF FINISHED WORK

A. Section 01700 - Execution Requirements: Protecting finished Work.

B. Do not permit soil grading over treated work.

END OF SECTION

Section 02506

POLYVINYL CHLORIDE PIPE

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Polyvinyl chloride (PVC) pressure pipe for water distribution and sanitary sewer force mains in nominal diameters 4 inches through 16 inches.

B. Polyvinyl chloride sewer pipe for gravity sanitary sewers in nominal diameters 4 inches through 48 inches.

C. Polyvinyl chloride pressure pipe for gravity sanitary sewers and force mains in nominal diameters 4 inches through 36 inches.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

~~1. No separate payment will be made for PVC pipe under this section. Include cost in unit price for work included as specified in the following sections:~~

~~a. Section 02511 - Water Main~~

~~b. Section 02531 - Gravity Sanitary Sewers~~

~~c. Section 02532 – Sanitary Sewer Force Mains~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ANSI A21.5 (AWWA C 105) - Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids.

B. ANSI A21.10 (AWWA C 110) - Ductile-Iron and Gray-Iron Fittings, 3 inches through 48 inches for Water and Other Liquids.

C. ANSI A21.11 (AWWA C 111) - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

D. ASTM D 1248 - Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.

E. ASTM D 1784 - Standard Specification for Rigid Polyvinyl Chloride Compound and Chlorinated Polyvinyl Chloride Compounds.

F. ASTM D 2241 - Standard Specification for Polyvinyl Chloride Plastic Pipe (SDR-PR).

G. ASTM D 2321 - Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.

H. ASTM D 2444 - Test Method for Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight).

I. ASTM D 3034 - Specification for Type PSM Polyvinyl Chloride Sewer Pipe and Fittings.

J. ASTM D 3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.

K. ASTM D 3212 - Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

L. ASTM F 477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

M. ASTM F 679 - Specification for Polyvinyl Chloride Large-Diameter Plastic Gravity Sewer Pipe and Fittings.

N. ASTM F 794 - Specification for Polyvinyl Chloride Large-Diameter Ribbed Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.

O. AWWA C 909 - Polyvinyl Chloride Pressure Pipe, 4 Inches Through 12 Inches for Water Distribution.

P. AWWA C 905 - Polyvinyl Chloride Water Transmission Pipe, Nominal Diameters 14 Inches Through 36 Inches.

Q. UNI-B-11 - Recommended Standard Specification for Polyvinyl Chloride Water Transmission Pipe (Nominal Diameters 14 Inches through 36 Inches).

R. UNI-B-13 - Recommended Standard Performance Specification for Joint Restraint Devices for Use with Polyvinyl Chloride Pipe.

1.04 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit shop drawings showing design of new pipe and fittings indicating alignment and grade, laying dimensions, fabrication, fittings, flanges, and special details.

1.05 QUALITY CONTROL

A. Submit manufacturer's certifications that PVC pipe and fittings meet requirements of this Section and AWWA C 900 or AWWA C 905 for pressure pipe applications, or the appropriate ASTM standard specified for gravity sewer pipe.

B. Submit manufacturer's certification that PVC pressure pipe has been hydrostatically tested at the factory in accordance with AWWA C 900 or AWWA C 909 and this Section.

C. When foreign manufactured material is proposed for use, have material tested for conformance to applicable ASTM requirements by certified independent testing laboratory located in United States. Certification from any other source is not acceptable. Furnish copies of test reports to Engineer for review. Cost of testing shall be borne by Contractor.

PART 2 P R O D U C T S

2.01 MATERIAL

A. Use PVC compounds in the manufacture of pipe that contain no ingredient in an amount that has been demonstrated to migrate into water in quantities considered to be toxic.

B. Furnish PVC pressure pipe manufactured from Class 12454-B virgin PVC compounds as defined in ASTM D 1784. Provide pipe which is homogeneous throughout, free of voids, cracks, inclusions, and other defects, uniform as commercially practical in color, density, and other physical properties. Deliver pipe with surfaces free from nicks and scratches with joining surfaces of spigots and joints free from gouges and imperfections which could cause leakage.

C. For PVC pressure pipe used for water mains, provide self-extinguishing PVC pipe that bears Underwriters' Laboratories mark of approval and is acceptable without penalty to Texas State Fire Insurance Committee for use in fire protection lines.

D. Gaskets:

1. Gaskets shall meet the requirements of ASTM F 477. Use elastomeric factory-installed gaskets to make joints flexible and watertight.

E. Lubricant for rubber-gasketed joints: Water soluble, non-toxic, non-objectionable in taste and odor imparted to fluid, non-supporting of bacteria growth, having no deteriorating effect on PVC or rubber gaskets.

F. PVC pipe for water service shall bear National Sanitation Foundation Seal of Approval (NSF-PW).

2.02 WATER SERVICE PIPE

A. Pipe 4-inch through 12-inch: AWWA C 909, Class 150, DR 18; nominal 20-foot lengths; cast-iron equivalent outside diameters.

B. Pipe 16-inch: AWWA C 905; Class 235; DR 18; nominal 20-foot lengths; cast-iron equivalent outside diameter.

C. Joints: ASTM D 3139; push-on type joints in integral bell or separate sleeve couplings. Do not use socket type or solvent weld type joints.

D. Make curves and bends by deflecting the joints. Do not exceed maximum deflection recommended by the pipe manufacturer. Submit details of other methods of providing curves and bends for review by Engineer.

E. Hydrostatic Test: AWWA C 909, AWWA C 905, ANSI A 21.10 (AWWA C 110); at point of manufacture; submit manufacturer's written certification.

F. Detectable underground warning tape shall be 3” wide Magna Tec or approved equal.

2.03 BENDS AND FITTINGS FOR PVC PRESSURE PIPE

A. Bends and Fittings: Conform to the requirements of Item 02501 – Ductile Iron Pipe and Fittings.

2.04 GRAVITY SANITARY SEWER PIPE

A. PVC gravity sanitary sewer pipe shall be in accordance with the provisions in the following table:

| WALL CONSTRUCTION | ASTM DESIGNATION | SDR (MAX.)/ STIFFNESS (MIN.) | DIAMETER SIZE RANGE |
|---|---|---|---|
| Solid | D3034 | SDR 26 / PS 115 | 6" to 15" |
| | D3034 | SDR 35 / PS 46 | 6" to 15" |
| | F679 | SDR 35 / PS 46 | 18" to 27" |
| | AWWA C909 | DR 18 / N/A | 4" to 12" |
| | AWWA C905 | DR 18 / N/A | 14" to 36" |
| Profile | F794<br>F794 | N/A / 46 psi<br>N/A / 46 psi | 12” TO 48”<br>21” TO 48” |

B. When solid wall PVC pipe 18 inches to 27 inches in diameter is required in SDR 26, provide pipe conforming to ASTM F 679, except provide wall thickness as required for SDR 26 and pipe strength of 115 psi.

C. For sewers up to 12-inch-diameter crossing over waterlines, or crossing under waterlines with less than 2 feet separation, provide minimum 150 psi pressure-rated pipe conforming to ASTM D 2241 with suitable PVC adapter couplings for a minimum of 10 feet each direction from the waterline.

D. Joints: Spigot and integral wall section bell with solid cross section elastomeric or rubber ring gasket conforming to requirements of ASTM D 3212 and ASTM F 477, or ASTM D 3139 and ASTM F 477. Gaskets shall be factory-assembled and securely bonded in place to prevent displacement. The manufacturer shall test a sample from each batch conforming to requirements ASTM D 2444.

E. Fittings: Provide PVC gravity sewer sanitary bends, tee, or wye fittings for new sanitary sewer construction. PVC pipe fittings shall be full-bodied, either injection molded or factory fabricated. Saddle-type tee or wye fittings are not acceptable.

~~2.05 SANITARY SEWER FORCE MAIN PIPE~~

~~A. Provide PVC pressure pipe conforming to the requirements for water service pipe, and conforming to the minimum working pressure rating specified in Section 02532 - Sanitary Sewage Force Mains.~~

~~B. Acceptable pipe joints are integral bell-and-spigot, containing a bonded-in elastomeric sealing ring meeting the requirements of ASTM F 477. In designated areas requiring restrained joint pipe and fittings, use EBAA Iron Series 2000PV, Uniflange Series 1350 restrainer, or equal joint restraint device conforming to UNI-B-13, for PVC pipe 12-inch diameter and less.~~

~~C. Fittings: Provide ductile iron fittings as per Paragraph 2.03, except furnish fittings with one of the following internal linings:~~

~~1. Nominal 40 mils (35 mils minimum) virgin polyethylene complying with ASTM D 1248, heat fused to the interior surface of the fitting, as manufactured by American Cast Iron Pipe "Polybond", or U.S. Pipe "Polyline".~~

~~2. Nominal 40 mils (35 mils minimum) polyurethane, Corro-pipe II by Madison Chemicals, Inc.~~

~~3. Nominal 40 mils (35 mils minimum) ceramic epoxy, Protecto 401 by Enduron Protective Coatings.~~

~~D. Exterior Protection: Provide polyethylene wrapping of ductile iron fittings as required by Section 02528 - Polyethylene Wrap.~~

~~E. Hydrostatic Tests: Hydrostatically test pressure rated pipe in accordance with Paragraph 2.02E.~~

PART 3 E X E C U T I O N

3.01 PROTECTION

A. Store pipe under cover out of direct sunlight and protect from excessive heat or harmful chemicals in accordance with the manufacturer's recommendations.

3.02 INSTALLATION

A. Conform to requirements of Section 02511 - Water Mains, Section 02531 - Gravity Sanitary Sewers, and Section 02532 - Sanitary Sewage Force Mains, as applicable.

B. Install PVC pipe in accordance with Section 02317 - Excavation and Backfill for Utilities, ASTM D 2321, and manufacturer's recommendations.

C. Water service pipe 12 inches in diameter and smaller: Installed to clear utility lines and have minimum 4 feet of cover below lowest property line grade of street, unless otherwise required by Drawings.

D. Avoid imposing strains that will overstress or buckle the pipe when lowering pipe into trench.

E. Install 3” wide detectable warning tape approximately 24” below the finished surface above all pipe runs.

END OF SECTION

Section 02512

WATER SERVICE CONNECTIONS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Tapping mains and furnishing and installing new service lines for water.

B. Relocation of existing small water meters.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for water connections is on a per each basis for each installation.~~

~~2. Payment for each meter includes labor, materials, and equipment to relocate the existing meter.~~

~~3. No additional payment will be made for bedding, backfill, compaction, etc.~~

~~4. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. AWWA C 800 - Underground Service Line Valves and Fittings.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Provide water service as shown on the Drawings.

PART 3 E X E C U T I O N

3.01 APPLICATION

A. Set service connections at right angles to proposed meter location.

B. Use tapping machine manufactured for pressure tapping purposes for 2-inch and smaller service taps on pressurized water mains.

C. Install service lines in open-cut trench in accordance with Section 02317 - Excavation and Backfill for Utilities except that service lines specifically indicated on Drawings shall be augered in accordance with Drawings.

D. Lay service lines with minimum of 30 inches of cover as measured from top of curb or, in absence of curbs, from centerline elevation of crowned streets or roads. Provide minimum of 18 inches of cover below flow line of ditches to service lines.

E. Maintain service lines free of dirt and foreign matter.

F. Install service lines so that top of meter will be 4 to 6 inches below finished grade.

G. Locate water meters one foot inside street right-of-way, one foot on curbside of sidewalk, or as directed by Resident Project Representative.

H. Crossing of paved surfaces shall be in accordance with Section 02221 – Remove Existing Pavements and structures, and the Drawings.

I. Turf areas crossed or disturbed under this section shall be repaired in accordance with Section 02920 – Top Soiling & Finished Grading, Sodding, and the Drawings

END OF SECTION

Section 02513

WET CONNECTIONS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Wet connections for new water mains and service lines to existing water mains.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for Wet Connections.~~

~~2. No compensation will be given for extra work or for damages occurring as a result of an incomplete shutoff.~~

~~3. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 DEFINITIONS

A. Wet connections consist of using existing valves to isolate sections of pipe to be connected, draining the isolated sections, and completing the connections.

B. Connection of 2-inch or smaller lines, which may be referred to on Drawings as "2-inch standard connections" or "gooseneck connections" will be measured as 2-inch wet connections. This item is not to be used as part of a 2-inch service line.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Pipe shall conform to requirements of applicable portions of Sections 02501 through 02528 related to piping materials and to water distribution.

B. Valves shall conform to requirements of Section 02521 - Gate Valves.

PART 3 E X E C U T I O N

3.01 CONNECTION OPERATIONS

A. Plan wet connections in such manner and at such hours as to least inconvenience public. Notify Resident Project Representative at least 48 hours in advance of making connections.

B. Do not operate valves on mains in use by Owner. Owner will handle, at no cost to Contractor, operations involving opening and closing valves for wet connections.

C. Conduct connection operations when Resident Project Representative is at job site. Connection work shall progress without interruption until complete once existing mains have been cut or plugs has been removed for making connections.

END OF SECTION

Section 02514

DISINFECTION OF WATER LINES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Disinfection of potable water lines.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for disinfection of water lines under this Section. Include cost in unit price of water lines.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. AWWA C 651 - Disinfecting Water Mains.

B. AWWA B 300 – Hypochlorites

C. NSF Standard 60 – Drinking Water Additives

PART 2 P R O D U C T S

2.01 HYPOCHLORITE

A. Dry hypochlorite: Dry hypochlorite shall be granular type and meet the requirements of AWWA B300 and NSF 60.

B. Hypochlorite solution: Solution prepared on – site from dry hypochlorite and potable water.

PART 3 E X E C U T I O N

3.01 CONDUCTING DISINFECTION

A. Water lines constructed shall be promptly disinfected after pressure tests are conducted. An acceptable bacteriologic test shall be obtained before water lines are connected to Owner's water distribution system.

B. Water for disinfection and flushing shall be purchased from the Owner.

C. Coordinate chlorination operations through Resident Project Representative.

3.02 PREPARATION

A. Use required temporary blind flanges, sleeves, plugs, and other items needed to facilitate disinfection of new mains. Normally, each valved section of water line requires two each 3/4-inch taps. A 2-inch

minimum blow-off is required for water lines up to and including 6-inch diameter.

B. Fire hydrants may be used as blow-offs to flush newly constructed water lines above. Where fire hydrants are not available, locations and designs for blow-offs shall be as indicated on Drawings. Install temporary blow-off valves and remove promptly upon successful completion of disinfection and testing.

C. Very slowly fill each section of pipe with water in a manner approved by Resident Project Representative. Before beginning disinfection operations, expel air from pipeline.

D. Install blow-off valves at end of main to facilitate flushing of dead-end water mains. Install permanent blow-off valves according to Drawings.

E. Excavations shall be backfilled immediately after installation of risers or blow-offs.

F. Correct problems that may prevent disinfection operations.

G. Notify and coordinate with Resident Project Representative a minimum of 48 hours before disinfection work is to be performed.

H. The following procedure may be used:

1. Introduce chlorinating material into water line in accordance with AWWA C 651.

2. If dry hypochlorite is used, it shall be placed in newly laid pipe as construction progresses.

3. Use sufficient quantities of chemicals to produce a concentration of 100 ppm of chlorine. Concentration shall be checked at point of pipeline filling. Concentration check shall be witnessed by Resident Project Representative.

4. Open and close valves in section being disinfected during contact period.

5. After contact period of not less than 24 hours, flush system with clean water until residual chlorine is no greater than 1.0 ppm. Concentration check shall be witnessed by Resident Project Representative.

3.03 BACTERIOLOGICAL TESTING

A. Microbiological sampling shall be done after disinfecting flush, but prior to connecting the new main into the existing distribution system in accordance with AWWA C651. Two consecutive sets of acceptable samples, taken at least 24 hours apart, shall be collected from the new main. At least one set of samples shall be collected from every 1,000 linear feet of the new water main, plus one set from the end of the line. Samples for bacteriologic analysis shall be collected in sterile bottles. No hose or fire hydrant shall be used in the collection of samples.

B. If test results indicate need for additional disinfection of water lines based on Texas Department of Health requirements, flush section and begin disinfection procedure again.

3.04 COMPLETION

A. Upon completion of disinfection and testing, remove risers except those approved for use in subsequent hydrostatic testing, and backfill excavation promptly.

END OF SECTION

Section 02515

HYDROSTATIC TESTING OF PRESSURE PIPELINES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Field hydrostatic testing of newly installed pipelines.

B. Specifications identify requirements for both small-diameter (less than or equal to 20 inches) pipeline and large-diameter (greater than 20 inches) pipelines. When specifications for large-diameter pipelines differ from those for small- diameter pipelines, paragraphs for large-diameter pipelines will govern for large-diameter pipe.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No payment will be made for hydrostatic testing of pipelines under this Section. Include cost in unit price of pressure pipelines being constructed.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. AWWA C 600 – Installation of Ductile – Iron Water Mains and Their Appurtenances.

PART 2 P R O D U C T S - Not Used

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Hydrostatically test newly installed pressure sewage pipelines before connecting to collection / treatment system.

B. Hydrostatically test newly installed water pipelines before disinfection, and before connecting to water distribution system.

C. For large-diameter pipelines, test in lengths between valves, or plugs, of not more than 2500 feet.

D. Small-diameter pipelines shall be tested in lengths between valves, or plugs, of not more than 1500 feet.

E. Conduct hydrostatic tests in presence of Resident Project Representative.

3.02 TEST PROCEDURES

A. Furnish, install, and operate connections, pump, meter and gages necessary for hydrostatic testing.

B. Allow filled pipeline to sit a minimum of 24 hours before testing begins.

C. For small-diameter pipelines, expel air and apply a minimum test pressure of 150% of design pressure rating of the pipe measured at the lowest point of the test section.

D. Begin test by 9:00 a.m. unless otherwise approved by Resident Project Representative. Maintain test pressure within 5 psi for 8 hours. Record initial pressure, initial water meter reading, and starting time. Record pressure at midpoint of test period. Record final pressure, final water meter reading, and ending time. Readings shall be taken in the presence of the Resident Project Representative.

1. If a large quantity of water is required to maintain pressure during test, testing shall be discontinued until cause of water loss is identified and corrected.

2. Failure to maintain test pressure within limit specified shall be cause for test rejection.

E. Keep valves inside pressure reducing stations closed during hydrostatic pressure test.

3.03 ALLOWABLE LEAKAGE FOR PIPELINES

A. During hydrostatic tests, no leakage will be allowed for sections of pipelines consisting of welded joints.

B. Allowable leakage for pipelines with rubber gasket joints: Pipeline installation shall not be accepted if leakage exceeds the amount determined by the following formula:

$$L = \frac{SD\,P^{0.5}}{133{,}200}$$

Where: L = The allowable leakage, gallons/hour
S = Length of pipeline tested, feet
D = Nominal diameter of pipe, inches
P = Average test pressure, pounds per square inch, gauge

3.04 CORRECTION FOR FAILED TESTS

A. Repair joints showing visible leaks on surface regardless of total leakage shown on test. Check valves and fittings to ensure that no leakage occurs that could affect or invalidate test. Remove any cracked or defective pipes, fittings, and valves discovered during pressure test and replace with new items.

B. Failed water lines shall be disinfected after repair and retesting.

C. Repeat test until satisfactory results are obtained.

3.05 COMPLETION

A. Upon satisfactory completion of testing, dispose of test water in a legal and proper manner.

B. Upon satisfactory completion of testing, remove risers remaining from disinfection and hydrostatic testing, and backfill excavation promptly.

END OF SECTION

SECTION 02516
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish all labor, materials, services and equipment as required in conjunction with or properly incidental to placing of concrete as described herein and/or as shown on the drawings.

B. Includes all cast-in-place concrete for paving, curbs, sidewalks, inlets, culverts and headwalls.

1.2 RELATED DOCUMENTS

A. Drawing and general provisions of Contract and Division 2 Specification sections, apply to work of this Section.

1.3 CODES AND STANDARDS

A. The work described in this Section, unless otherwise noted on the Drawings, or herein specified, shall be governed by the latest editions of the following codes or specifications.

1. ACI 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete".
2. ACI 305, "Hot Weather Concreting".
3. ACI 306, "Cold Weather Concreting".
4. ACI 309, "Standard Practice for Consolidation of Concrete:.
5. ACI 311, "ACI Manual of Concrete Inspection".
6. ASTM C33, Standard Specification for Concrete Aggregate.
7. ASTM C94, Standard Specification for Ready-Mix Concrete.
8. ASTM C136, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
9. ASTM C150, Standard Specification for Portland Cement.
10. ASTM C260, Standard Specification for Air-Entraining Admixtures.
11. ASTM C494, Standard Specification for Chemical Admixtures for Concrete.
12. ASTM C595, Standard Specification for Blended Hydraulic Cements.

1.4 QUALITY ASSURANCE

A. Concrete production facilities shall meet the requirements for certification by the National Ready Mixed Concrete Association.

B. Concrete batchers shall be completely interlocked semi-automatic or automatic batchers, as defined by the Concrete Plant Manufacturers Bureau.

C. Concrete batchers shall have graphic, digital, or photographic recorders, which shall register both empty balance and total weight (or volume of water or admixture) of each batched material, time to the nearest minute, date, identification of batch, and numerical count of each batch. Copies of the record shall be furnished to the Testing Laboratory.

1.5 CONCRETE MIX DESIGN

A. Design concrete mixes in accordance with ACI 318.

B. Submit proposed mix designs, including confirmation cylinder test results, in accordance with ACI 318 to the Engineer for evaluation a minimum of 14 days prior to placing concrete. Show:

1. Proportions of cement, fine and coarse aggregates, and water.
2. Combined aggregate gradation.
3. Aggregate specific gravities and gradations.
4. Water-cement ratio, design strength, slump and air content.
5. Type of cement and aggregates.
6. Type and dosage of admixtures.
7. Type, color and dosage of integral coloring compounds, where applicable.
8. Special requirements for pumping.
9. Range of ambient temperature and humidity for which design is valid.
10. Any special characteristics of mix which require precautions in mixing, placing, or finishing techniques to achieve finished product.

The use of fly ash is not permitted.

C. Mix designs based on record of past performance in accordance with ACI 301 Method 2, may be submitted in lieu of mix designs required above, provided all necessary information is included.

D. Check mix designs and revise if necessary wherever changes are made in aggregates or in surface water content of aggregate or workability of concrete. Slump shall be minimum to produce workable mix. Laboratory shall prescribe maximum quantity of water.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Mix and deliver concrete to project ready-mixed in accordance with ASTM C94. Mix concrete a minimum of 70 revolutions of transit mix drum at mixing speed. A minimum of 40 revolutions shall be at the production plant.

B. Schedule delivery so that continuity of any pour will not be interrupted for over 15 minutes.

C. Place concrete on site within 90 minutes after proportioning materials at batch plant.

1.7 JOB CONDITIONS

A. Hot Weather Requirements:
1. Follow ACI 301 and ACI 305.

2. Provide retarding type admixture conforming to ASTM C494, Type A or D in accordance with manufacturer's recommendations.

3. Maximum concrete temperature shall not exceed 95°F.
a. Maximum concrete temperature for concrete with a specified strength greater than 6000 psi shall not exceed 90°F.

B. Cold Weather Concreting:

1. Follow ACI 301 and ACI 306.

2. When ambient temperature at site is below 40°F, or is expected to fall to that temperature within ensuing 24 hours, heat water and/or aggregate prior to adding to mix so that temperature of concrete will be between 60°F and 90°F at time of placement.

3. Maintain temperature of deposited concrete above 32°F and for a minimum of seven days after placing.

C. Temperature Changes: Maintain changes in concrete temperature as uniformly as possible, but in no case exceed change of 5°F per hour or 25°F in any 24 hour period.

D. Combustion heaters shall not be used during the first 48 hours without precautions to prevent exposure of concrete and workmen to exhaust gases containing carbon dioxide and/or carbon monoxide.

E. Admixtures intended to accelerate hardening of concrete or produce higher than normal strength at early periods will not be permitted unless specified. The use of calcium chloride is specifically prohibited.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement:

1. Portland Cement, Type I or III, conforming to the requirements of ASTM C150.
2. Blended Hydraulic Cements, Type 1P, conforming to the requirements of ASTM C595.

B. Aggregate:

1. Fine: ASTM C33; clean, hard, durable, uncoated, natural sand, free from silt, loam or clay.

2. Coarse: ASTM C33; hard, durable, uncoated, crushed stone, gradation in accordance with Size No. 467 for piers and footings and Size No. 67 for all other concrete. Maximum aggregate size shall be in accordance with ACI 318.

3. Grading shall be in accordance with "Standard Method for Sieve Analysis of Fine and Coarse Aggregates" (ASTM C136).

C. Water: ASTM C94, Paragraph 4.1.3; potable, clean and free from oil, acid and injurious amounts of vegatable matter, alkalies, and other impurities.

D. Admixtures:

1. Cement-dispersing, water-reducing types that follow water-cement ratio law. Admixtures shall conform to ASTM C494, Type A or D, and shall be used strictly in accordance with manufacturer's recommendations and as determined by the Testing Laboratory. Admixture shall not discolor concrete or in any way affect the appearance of the concrete.

a. High-range water reducing admixture conforming to ASTM C494, Type F, may be used as required and shall be one of the following types or equal:
   1. Gifford-Hill PSI Super
   2. Master Builders Admixture LA-35
   3. SIKA Sikament
   4. W.R. Grace WRDA-19

2. An air-entraining admixture conforming to ASTM C260 shall be used and shall be one of the following types or equal:

   a. Gifford-Hill Air-Tite
   b. Master Builders MB-VR
   c. SIKA AER
   d. W.R. Grace Darex AEA

3. Use of calcium chloride is specifically prohibited.

E. Non-Shrink Cement Grout:

1. Qualities: Premixed non-shrink grout requiring only addition of water. Non-metallic type grout where grout will be sight exposed.

   a. Minimum compressive strength of 5000 psi at 7 days and 7500 psi at 28 days when placed at a plastic consistency of 115% flow factor.
   b. Free of chlorides, sulphates or gas producing agents.

2. Standards:

   a. Overall product: CRD - C-621.
   b. Compressive Strength: ASTM C109, 2 inch cubes.
   c. Bleed Performance: CRD - C-611.
   d. Flow Factor: ASTM C230.

## 2.2 CONCRETE MIXES

A. Strength: Concrete is classified and specified by ultimate compressive strength (f'c) at the age of 28 days.

B. Design concrete to yield strengths indicated on the Drawings.

C. Concrete permanently exposed to weather shall contain an air-entraining admixture to produce a range of 4.5% to 7.5% air by volume of concrete.

D. Proportions: Proportions of cement, aggregate, and water to attain required plasticity and compressive strength shall be in accordance with ACI 318.

PART 3 - EXECUTION

3.1 GENERAL

A. Inserts: Give the various trades and subcontractors ample notification and opportunity to furnish any and all anchors, nailers, pipes, conduits, boxes, inserts, thimbles, sleeves, frame vents, wires, supports, or other items required to be built into the concrete by the provisions of the drawings or of the specification governing the work of such trades and subcontractors, or as it may be necessary for the proper execution of their work. Obtain suitable templates or instructions for the installations of such items which are required to be placed in the forms.

B. Slump: Concrete shall not be placed when its plasticity, as measured by slump tests, is outside the following limits: 5 inches maximum, 2 inches minimum.

C. Classes of Concrete and Usage: Concrete of the several classes of concrete required shall have the characteristics shown on the Drawings.

D. Mixing: Transit-mixed concrete conforming to the requirements of ASTM C94 shall be used in lieu of concrete mixed at the job site. Concrete shall not be transported or used in any case after a period in excess of ninety (90) minutes has elapsed after the introduction of water into the mixer. The agency supplying transit-mixed concrete shall have a plant of sufficient capacity and adequate transportation facilities, to assure continuous delivery at the rate required. The frequency of deliveries to the site of the work must be such as to provide for placing the concrete continuously throughout any one (1) pour.

E. Conveying Concrete: Convey concrete from the mixer to the place of final deposit by methods which will prevent the separation or loss of the ingredients. Concrete to be conveyed by pumping shall be submitted to the Testing Laboratory for evaluation for each class of concrete specified before being used. Test cylinders for pumped concrete shall be taken at the discharge end of the pumping equipment.

F. Equipment for chuting, pumping, and pneumatically conveying concrete shall be of such size and design as to assure a practically continuous flow of concrete at the delivery end without separation of the materials. The use of gravity-flow or aluminum chutes or conveyors for transporting concrete horizontally will not be permitted.

3.2 FIELD CONCRETE CONTROL AND TESTING

A. Secure composite samples in accordance with ASTM C172. Each sample shall be obtained from a different batch of concrete on a random basis, avoiding any selection of the test batch other than by a number selected at random before commencement of concrete placement.

B. All concrete with required strength of 6000 psi or less shall be tested as follows:

1. Mold and cure five (5) specimens from each sample in accordance with ASTM C31.

2. Two (2) specimens shall be tested at seven days for information, two shall be tested at 28 days for acceptance, and the remaining cylinder shall be tested as directed.

C. Any deviations from the requirements of ASTM Specifications shall be recorded in the test report. Test concrete specimens in accordance with ASTM C39.

D. Make at least one strength test (five specimens) for each 100 cu. yd. or fraction thereof, of

each mix design of concrete placed in any one day. Determine slump of the concrete sample for each strength test and whenever consistency of concrete appears to vary, in accordance with ASTM C143.

E. Determine air content of air-entrained, normal weight and/or lightweight, concrete sample for each strength test, in accordance with either ASTM C231, ASTM C173, or ASTM C138. Determine temperature of concrete sample for each strength test.

F. Inspect each batch of concrete, adjust amounts of mixing water to assure uniform consistency from truck to truck. Check mixing from mixers before mix begins to set and within time limits set forth in ASTM C94.

1. Control addition of water to concrete at job site and length of time concrete is allowed to remain in truck during placement.
2. Certify each delivery ticket indicating class of concrete delivered, amount of water added and time at which cement and aggregate was discharged into truck, and time at which concrete was discharged from truck.

G. Should the strength of concrete fall below the minimum, then additional tests, including load tests, may be required. These tests, if required, shall be made at the contractor's expense and shall be in accordance with ASTM C42 and ACI 318. If tests do not meet the applicable requirements, then the structure, or any part of the structure, shall be removed and replaced at the contractor's expense. The specified strength must be met at 28 days. If not, the concrete is considered not acceptable and must be removed and replaced. The .85 factor in ACI 318 will not be allowed.

H. Test reports shall show concrete mix identification number or give proportions of ingredients, time test was made, truck ticket, number, slump and time of batching, and location of each placement.

I. Report promptly to Engineer all details of reasons for rejection of any and all quantities of concrete. Give all information concerning locations of the concrete pours, quantities, date of pours, and other pertinent facts concerning concrete represented by the specimens.

J. Grout: For every one third (1/3) cubic yards of grout placed, grout strength shall be tested with a set of cubes as follows:

1. A set of cubes shall consist of three cubes to be tested at 7 days, and three cubes to be tested at 28 days.
2. Test cubes shall be made and tested in accordance with ASTM C109, with the exception that the grout should be restrained from expansion by a top plate.

3.3 PLACING CONCRETE

A. Place concrete in reasonably uniform layers, approximately horizontal, and not more than eighteen inches (18") deep, exercising care to avoid vertical joints or inclined planes. The piling up of concrete in the forms in such a manner as to cause the separation or loss of any of its ingredients will not be permitted. Concrete which has partially set or hardened shall not, under any circumstances, be deposited in the work.

B. Place concrete in the forms as nearly in its final position as is practical to avoid rehandling. Exercise special care to prevent splashing the forms or reinforcement with concrete.

Remove any hardened or partially hardened concrete which has accumulated on the forms or reinforcement before the work proceeds. Do not place concrete on previously deposited concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the respective member or section, except as hereinafter specified.

C. Do not permit concrete to drop freely any distance greater than five feet (5'). Where longer drops are necessary, use a chute, tremie, or other acceptable conveyance to assist the concrete into place without separation. Do not pour directly into any excavations where water is standing.

D. Vibration: As soon as concrete is deposited, thoroughly agitate same by means of mechanical vibrators and suitable hand tools, so manipulated as to work the mixture well into all parts and corners of the forms, and entirely around the reinforcement and inserts. Mechanical vibrators shall maintain frequencies in accordance with the recommendations of ACI 309, Table 5.1.4 and shall be operated by competent workmen. Over vibrating and use of vibrators to transport concrete within forms shall not be allowed. A spare vibrator shall be kept on the job site during all concrete placing operations.

E. Bonding: Before depositing any new concrete on or against previously deposited concrete which has partially or entirely set, the surface of the latter shall be thoroughly roughened and cleaned of all foreign matter, scum and laitance.

F. Construction Joints: Except as otherwise specifically indicated on the drawings, each concrete member shall be considered as a single unit of operations, and all concrete for the same shall be placed continuously in order that such unit will be monolithic in construction. Should construction joints prove to be absolutely unavoidable, same shall be located at or near the midpoints of spans. Additional construction joints shall not be made under any circumstances without prior review by the engineer.

G. Protect all freshly placed concrete from washing by rain, flowing water, etc. Do not allow the concrete to dry out from the time it is deposited in the forms until the expiration of the curing period.

H. Grout shall be mixed only in such quantities as are needed for immediate use. No retempering shall be permitted and materials which have been mixed for a period exceeding thirty (30) minutes shall in no case be used upon any portion of the work.

I. Imperfect or damaged work, or any material damaged or determined to be defective before final completion and acceptance of the entire job, shall be satisfactorily replaced at the contractor's expense and shall be in conformity with all of the requirements of the contract documents. Removal and replacement of concrete work shall be done in such a manner as not to impair the appearance or strength of the structure in any way.

J. Cleaning: Upon completion of the work, all forms, equipment, protective coverings and any rubbish resulting therefrom shall be removed from the premises. Finished concrete surfaces shall be left in a clean and perfect condition, satisfactory to the owner. Sweep with an ordinary broom and remove all mortar, concrete droppings, loose dirt, mud, etc.

END OF SECTION

Section 02521

GATE VALVES

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Gate valves.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment is on a per each basis for each size valve installed under this Section, except those used in the installation of fire hydrants.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM A 307 - Carbon Steel Externally Threaded Standard Fasteners.

B. ASTM B 62 - Composition Bronze or Ounce Metal Casting.

C. ASTM D 429 - Test Methods for Rubber Property-Adhesion to Rigid Substrates.

D. ASTM B 763 - Copper Alloy Sand Casting for Valve Application.

E. AWWA C 500 – Metal Seated Gate Valves for Water Supply Service.

F. AWWA C 509 - Resilient-seated Gate Valves for Water Supply Service.

G. AWWA C 550 - Protective Epoxy Interior Coatings for Valves and Hydrants.

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit manufacturer's product data for proposed valves for approval.

1.05 QUALITY CONTROL

A. Submit manufacturer's affidavit that gate valves are manufactured in the United States and conform to stated requirements of AWWA C 500, AWWA C 509, and this Section, and that they have been satisfactorily tested in accordance with AWWA C 500 and AWWA C 509 as appropriate.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Gate Valves: AWWA C 500, AWWA C 509, additional requirements of this Section and as shown on the Drawings. Direct bury valves and those in subsurface vaults open counter clockwise.

B. If type of valve is not indicated on Drawings, use gate valves as line valves for sizes less than 16-inches. If type of valve is indicated, no substitute is allowed.

C. Coatings for Valves: Interior and exterior surfaces shall be protected with a fusion bonded epoxy coating complying with AWWA C550. Coating shall be 10 mil dry film thickness.

D. Gate Valves 1-1/2 Inches in Diameter and Smaller: 125 psig; bronze; rising-stem; single-wedge; disc type; screwed ends.

E. Gate Valves 2 Inches to 12 Inches in Diameter: Bi-directional, resilient seated (AWWA C 509) 200 psig, bronze mounting, mechanical joint ends with rubber joint rings, and nut-operated unless otherwise specified or shown on the Drawings. Comply with details in the Drawings and the following requirements:

1. Design: Fully encapsulated rubber wedge or rubber seat ring mechanically attached with minimum 304 stainless-steel fasteners or screws; threaded connection isolated from water by compressed rubber around opening.

2. Body: Ductile iron, flange bonnet and stuffing box together with ASTM A 307 Grade B bolts. Manufacturer's initials, pressure rating, and year manufactured shall be cast in body.

3. Bronze: Valve components in waterway to contain not more than 15 percent zinc and not more than 2 percent aluminum.

4. Stems: ASTM B 763 bronze, alloy number 995 minimum yield strength of 40,000 psi; minimum elongation in 2-inches of 12 percent, non-rising.

5. O-rings: AWWA C 509, sections 2.2.6 and 4.8.2.

6. Stem Seals: Consist of three O-rings, two above and one below thrust collar with anti-friction washer located above thrust collar.

7. Stem Nut: Independent or integrally cast of ASTM B 62 bronze.

8. Resilient Wedge: Molded, synthetic rubber, vulcanized and bonded to iron wedge or attached with 304 stainless steel screws tested to meet or exceed ASTM D 429 Method B; seat against epoxy-coated surface in valve body.

9. Bolts: AWWA C 509 Section 4.4; stainless steel.

F. Gate Valves 14 Inches to 24 Inches in Diameter: AWWA C 500; mechanical joint ends with rubber rings and nut-operated unless otherwise specified or shown on the Drawings, double disc, 150 psi, and comply with the details in the Drawings and the following:

1. Body: Ductile iron; flange together bonnet and stuffing box with ASTM A 307 Grade B bolts. Manufacturer's initials, pressure rating, and year manufactured shall be cast in body. Equip with rollers, tracks, and scrapers.

2. Stems: Machined from ASTM B 62 bronze rod with integral forged thrust collar machined to size; non-rising.

3. Stem Seals: Consist of one O-ring above and one O-ring below thrust collar with anti-friction washer located above thrust collar for operating torque.

4. Stem Nut: Independent or integrally cast of ASTM B 62 bronze.

5. Discs: Cast iron with bronze disc rings securely peened into machined dovetailed grooves.

6. Wedging Device: Solid bronze or cast-iron, bronze-mounted wedges. Thin plates or shapes integrally cast into cast-iron surfaces are acceptable. Other moving surfaces integral to wedging action shall be bronze monel or nickel alloy-to-iron.

7. Bronze Mounting: Built as integral unit mounted over, or supported on, cast-iron base and of sufficient dimensions to be structurally sound and adequate for imposed forces.

8. Gear Cases: Cast iron; furnished on 18-inch and larger valves and of extended type with steel side plates, lubricated, gear case enclosed with oil seal or O-rings at shaft openings.

9. Stuffing Boxes: Located on top of bonnet and outside gear case.

G. Gate Valves 14 Inches and Larger: Furnish and equip with bypass valves.

1. Sizes: Provide 3-inch bypass valves for 14-inch through 20-inch gate valves. Provide 4-inch bypass valves for 24-inch gate valves.

H. Gate Valves Installed at Greater than 4-foot Depth: Provide non-rising, extension stem having coupling sufficient to attach securely to operating nut of valve. Upper end of extension stem shall terminate in square wrench nut no deeper than 4 feet from finished grade.

## PART 3 E X E C U T I O N

### 3.01 INSTALLATION

A. Earthwork. Conform to applicable provisions of Section 02317 - Excavation and Backfilling for Utilities.

### 3.02 SETTING VALVES AND VALVE BOXES

A. Remove foreign matter from within valves prior to installation. Inspect valves in open and closed positions to verify that parts are in satisfactory working condition.

B. Poly-wrap valves with Polyethylene Wrap.

C. Install valves and valve boxes where shown on Drawings. Set valves plumb and as detailed. Center valve boxes on valves. Carefully tamp earth around each valve box for minimum radius of 4 feet, or to undisturbed trench face if less than 4 feet. Install valves completely closed when placed in water line.

D. For pipe section of each valve box, use only cast iron, ductile iron, or DR18 PVC pipe cut to proper length. Size to allow future operation of valve. Assemble and brace box in vertical position as indicated on Drawings.

### 3.03 DISINFECTION AND TESTING

A. Disinfect valves and appurtenances as required by Section 02514 - Disinfection of Waterlines and test as required by Section 02515 - Hydrostatic Testing of Pipelines.

END OF SECTION

Section 02528

POLYETHYLENE WRAP

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Polyethylene wrap to be used in open-cut construction for ductile iron pipe when cathodic protection system is not required by Drawings.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for polyethylene wrap. Include cost of polyethylene wrap in unit price for pipes and fittings to be wrapped.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCE

A. ASTM D 1248 - Polyethylene Plastics Molding and Extrusion Materials.

B. AWWA C 105 - Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids.

1.03 SUBMITTALS

A. Submit product data in accordance with Section 01330 - Submittal Procedures.

B. Submit product data for proposed film and tape for approval.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Polyethylene Film: Tubular or sheet form without tears, breaks, holidays, or defects; conforming with requirements of AWWA C 105, 2.5 to 3 percent carbon black content, either low- or high-density:

1. Low-density polyethylene film. Low-density polyethylene film shall be manufactured of virgin polyethylene material conforming to the following requirements of ASTM D 1248.

a. Raw material.

(1) Type : I

(2) Class: C (black)

(3) Grade: E-5

(4) Flow rate (formerly melt index): 0.4 g/10 minute, maximum

(5) Dielectric strength: Volume resistivity, $10^{15}$ ohm-cm, minimum

b. Physical properties.

(1) Tensile strength: 1200 psi, minimum

(2) Elongation: 300 percent, minimum

(3) Dielectric strength: 800 V/mil thickness, minimum

c. Thickness: Low-density polyethylene film shall have a nominal thickness of 0.008 inch. The minus tolerance on thickness is 10 percent of the nominal thickness.

2. High-density, cross-laminated polyethylene film. High-density, cross laminated polyethylene film shall be manufactured of virgin polyethylene material conforming to the following requirements of ASTM D 1248

a. Raw material.

(1) Type: III

(2) Class: C (black)

(3) Grade: P33

(4) Flow rate (formerly melt index): 0.4 to 0.5g/10 minute, maximum

(5) Dielectric strength: Volume resistivity, $10^{15}$ ohm-cm, minimum

b. Physical properties.

(1) Tensile strength: 5000 psi, minimum

(2) Elongation: 100 percent, minimum

(3) Dielectric strength: 800 V/mil thickness, minimum

c. Thickness: Film shall have a nominal thickness of 0.004 inch. The minus tolerance of thickness is 10 percent of the nominal thickness.

B. Polyethylene Tape: Provide 3-inch-wide, plastic-backed, adhesive tape; Paleocene No. 900, Scotchwrap No. 50, or approved equal.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Remove lumps of clay, mud, and cinders from pipe surface prior to installation of polyethylene encasement. Prevent soil or embedment material from becoming trapped between pipe and polyethylene.

B. Fit polyethylene film to contour of pipe to effect a snug, but not tight fit; encase with minimum space between polyethylene and pipe. Allow sufficient slack in contouring to prevent stretching polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to

prevent damage to polyethylene due to backfilling operations. Secure overlaps and ends with adhesive tape to hold polyethylene encasement in place until backfilling operations are complete.

C. For installations below water table or in areas subject to tidal actions, seal both ends of polyethylene tube with adhesive tape at joint overlap.

3.02 INSTALLATION

A. Tubular Type (Method A):

1. Cut polyethylene tube to a length approximately 2 feet longer than pipe section. Slip tube around pipe, centering tube to provide 1-foot overlap on each adjacent pipe section, and bunching it accordion-fashion lengthwise until it clears pipe ends.

2. Lower pipe into trench and make up pipe joint with preceding section of pipe. Make shallow bell hole at joints to facilitate installation of polyethylene tube.

3. After assembling pipe joint, make overlap of polyethylene tube. Pull bunched polyethylene from preceding length of pipe, slip it over end of adjoining length of pipe, and secure in place. Then slip end of polyethylene from adjoining pipe section over end of first wrap until it overlaps joint at end of preceding length of pipe. Secure overlap in place. Take up slack width at top of pipe to make a snug, but not tight, fit along barrel of pipe, securing fold at quarter points.

4. Repair cuts, tears, punctures, or other damage to polyethylene. Proceed with installation of next section of pipe in same manner.

B. Tubular Type (Method B):

1. Cut polyethylene tube to a length approximately 1 foot shorter than pipe section. Slip tube around pipe, centering it to provide 6 inches of bare pipe at each end. Take up slack width at top of pipe to make a snug, but not tight, fit along barrel of pipe, securing fold at quarter points; secure ends.

2. Before making up joint, slip 3-foot length of polyethylene tube over end of preceding pipe section, bunching in accordion-fashion lengthwise. After completing joint, pull 3-foot length of polyethylene over joint, overlapping polyethylene previously placed on each adjacent section of pipe by at least 1 foot; make each end snug and secure.

3. Repair cuts, tears, punctures, or other damage to polyethylene. Proceed with installation of next section of pipe in same manner.

C. Sheet Type:

1. Cut polyethylene sheet to a length approximately 2 feet longer than pipe section. Center length to provide 1-foot overlap on each adjacent pipe section, bunching sheet until it clears pipe ends. Wrap polyethylene around pipe so that sheet circumferentially overlaps top quadrant of pipe. Secure cut edge of polyethylene sheet at intervals of approximately 3 feet.

2. Lower wrapped pipe into trench and make up pipe joint with preceding section of pipe. Make shallow bell hole at joints to facilitate installation of polyethylene. After completing joint, make overlap and secure ends.

3. Repair cuts, tears, punctures, or other damage to polyethylene. Proceed with installation of next section of pipe in same manner.

D. Pipe-shaped Appurtenances: Cover bends, reducers, offsets, and other pipe-shaped appurtenances with polyethylene in same manner as pipe.

E. Odd-shaped Appurtenances: When it is not practical to wrap valves, tees, crosses, and other odd-shaped pieces in tube, wrap with flat sheet or split length of polyethylene tube by passing sheet around appurtenance and encasing it. Make seams by bringing edges together, folding over twice, and taping down. Tape polyethylene securely in place at valve stem and other penetrations.

F. Openings in Encasement: Create openings for branches, service taps, blowoffs, air valves, and similar appurtenances by making an X-shaped cut in polyethylene and temporarily folding back film. After appurtenance is installed, tape slack securely to appurtenance and repair cut, as well as other damaged area in polyethylene, with tape. Service taps may also be made directly through polyethylene, with any resulting damaged areas being repaired as specified.

G. Junctions between Wrapped and Unwrapped Pipe: Where polyethylene-wrapped pipe joins an adjacent pipe that is not wrapped, extend polyethylene wrap to cover adjacent pipe for distance of at least 3 feet. Secure end with circumferential turns of tape. Wrap service lines of dissimilar metals with polyethylene or suitable dielectric tape for minimum clear distance of 3 feet away from ductile iron pipe.

3.03 REPAIRS

A. Repair any cuts, tears, punctures, or damage to polyethylene with adhesive tape or with short length of polyethylene sheet or cut open tube, wrapped around pipe to cover damaged area, and secured in place.

END OF SECTION

SECTION 02531

GRAVITY SANITARY SEWERS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Gravity sanitary sewers and appurtenances, including stacks and service connections.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for gravity sanitary sewers by open-cut is on linear foot basis, complete in place, including sewer pipe, connections to existing manholes, post inspection and testing. Measurement will be taken along centerline of pipe from centerline to centerline of manholes.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit proposed methods, equipment, materials and sequence of operations for sewer construction. Plan operations to minimize disruption of utilities to occupied facilities or adjacent property.

1.04 QUALITY ASSURANCE

A. Qualifications. Install sanitary sewer that is watertight both in pipe-to-pipe joints and in pipe to-manhole connections. Perform testing in accordance with Section 02533 - Testing for Sanitary Sewers.

B. Regulatory Requirements.

1. Install sewer lines to meet minimum separation distance from potable water line, as scheduled below. Separation distance is defined as distance between outside of water pipe and outside of sewer pipe. When possible, install new sanitary sewers no closer to water lines than 9 feet in all directions. Where this separation distance cannot be achieved, new sanitary sewers shall be installed as specified in this section.

2. Make notification to Engineer when water lines are uncovered during sanitary sewer installation where minimum separation distance cannot be maintained.

3. Lay gravity sewer lines in straight alignment and grade.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Inspect pipe and fittings upon arrival of materials at job site.

B. Handle and store pipe materials and fittings to protect them from damage due to impact, shock, shear or free fall. Do not drag pipe and fittings along ground. Do not roll pipe unrestrained from delivery trucks.

C. Use mechanical means to move or handle pipe. Employ acceptable clamps, rope or slings around outside barrel of pipe and fittings. Do not use hooks, bars, or other devices in contact with interior surface of pipe to lift or move lined pipe.

PART 2 P R O D U C T S

2.01 PIPE

A. Provide piping materials for gravity sanitary sewers of sizes and types indicated on Drawings or as specified.

B. Unlined reinforced concrete pipe is not acceptable.

2.02 PIPE MATERIAL SCHEDULE

A. Unless otherwise shown on Drawings, use pipe materials that conform to requirements specified in one or more of following Sections:

1. Section 02501 - Ductile Iron Pipe and Fittings.

2. Section 02506 - Polyvinyl Chloride Pipe.

B. Where shown on Drawings, provide pipe meeting minimum class, dimension ratio, or other criteria indicated.

C. Pipe materials other than those listed above shall not be used for gravity sanitary sewers.

2.03 APPURTENANCES

A. Stacks. Conform to requirements of Section 02534 - Sanitary Sewer Service.

B. Service Connections. Conform to requirements of Section 02534 - Sanitary Sewer Service.

C. Roof, street or other type of surface water drains shall not be connected or reconnected into sanitary sewer lines.

2.04 BEDDING, BACKFILL, AND TOPSOIL MATERIAL

A. Bedding and Backfill: Conform to requirements of Section 02317 - Excavation and Backfill for Utilities, Section 02320 - Utility Backfill Materials.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Prepare traffic control plans and set up street detours and barricades in preparation for excavation when construction will affect traffic.

B. Provide barricades, flashing warning lights, and warning signs for excavations. Maintain barricades and warning lights where work is in progress or where traffic is affected by work.

C. Perform work in accordance with OSHA standards. Employ trench safety system as specified by OSHA for excavations over 5 feet deep.

D. Immediately notify agency or company owning utility line which is damaged, broken or disturbed. Obtain approval from Engineer and agency or utility company for repairs or relocations, either

temporary or permanent.

E. Remove old pavements and structures including sidewalks and driveways.

F. Install and operate dewatering and surface water control measures if needed.

G. Do not allow sand, debris or runoff to enter sewer system.

3.02 DIVERSION PUMPING

A. Install and operate required bulkheads, plugs, piping, and diversion pumping equipment to maintain sewage flow and to prevent backup or overflow. Obtain approval for diversion pumping equipment and procedures from Engineer.

B. Design piping, joints and accessories to withstand twice maximum system pressure or 50 psi, whichever is greater.

C. No sewage shall be diverted into area outside of sanitary sewer.

D. In event of accidental spill or overflow, immediately stop overflow and take action to clean up and disinfect spillage. Promptly notify Engineer so that required reporting can be made to TCEQ Agency by Engineer.

3.03 EXCAVATION

A. Earthwork. Conform to requirements of Section 02317 - Excavation and Backfill for Utilities. Use bedding as indicated on Drawings.

B. Line and Grade. Establish required uniform line and grade in trench from benchmarks identified by Engineer. Maintain this control for minimum of 100 feet behind and ahead of pipe-laying operation. Use laser beam equipment to establish and maintain proper line and grade of work. Use of appropriately sized grade boards which are substantially supported is also acceptable. Protect boards and location stakes from damage or dislocation.

C. Trench Excavation. Excavate pipe trenches to depths shown on Drawings and as specified in Section 02317 - Excavation and Backfill for Utilities.

3.04 PIPE INSTALLATION BY OPEN CUT

A. Install pipe in accordance with pipe manufacturer's recommendations and as specified in following paragraphs.

B. Install pipe only after excavation is completed, bottom of trench fine graded, bedding material is installed, and trench has been approved by Engineer.

C. Install pipe to line and grade indicated. Place pipe so that it has continuous bearing of barrel on bedding material and is laid in trench so interior surfaces of pipe follow grades and alignment indicated. Provide bell holes where necessary.

D. Install pipe with spigot ends toward downstream end of flow such that water flows into bell and out the spigot.

E. Form concentric joint with each section of adjoining pipe so as to prevent offsets.

F. Keep interior of pipe clean as installation progresses. Remove foreign material and debris from

pipe

G. Provide lubricant, place and drive home newly laid sections with come-a-long winches so as to eliminate damage to sections. Install pipe to "home" mark where provided. Use of back hoes or similar powered equipment will not be allowed unless protective measures are provided and approved in advance by Engineer.

H. Keep excavations free of water during construction and until final inspection.

I. When work is not in progress, cover exposed ends of pipes with approved plug to prevent foreign material from entering pipe.

J. Water line/new sewer line separation. When new sanitary sewers are installed, they shall be installed no closer to waterlines than nine feet in all directions. Sewers that parallel waterlines must be installed in separate trenches. Where the nine foot separation distance cannot be achieved, the following guidelines will apply:

1. Where a sanitary sewer parallels a waterline, the sewer shall be constructed of cast iron, ductile iron or PVC meeting ASTM specifications with a pressure rating for both the pipe and joints of 150 psi. The vertical separation shall be a minimum of two feet between outside diameters and the horizontal separation shall be a minimum of four feet between outside diameters. The sewer shall be located below the waterline.

2. Where a sanitary sewer crosses a waterline and the sewer is constructed of cast iron, ductile iron or PVC with a minimum pressure rating of 150 psi, an absolute minimum distance of 6 inches between outside diameters shall be maintained. In addition the sewer shall be located below the waterline where possible and one length of the sewer pipe must be centered on the waterline.

3. Where a sewer crosses under a waterline and the sewer is constructed of ABS truss pipe, similar semi-rigid plastic composite pipe, clay pipe or concrete pipe with gasketed joints, a minimum two foot separation distance shall be maintained. The initial backfill shall be cement stabilized sand (two or more bags of cement per cubic yard of sand) for all sections of sewer within nine feet of the waterline. This initial backfill shall be from one quarter diameter below the centerline of the pipe to one pipe diameter (but not less than 12 inches) above the top of the pipe.

4. Where a sewer crosses over a waterline all portions of the sewer within nine feet of the waterline shall be constructed of cast iron, ductile iron, or PVC pipe with a pressure rating of at least 150 psi using appropriate adapters. In lieu of this procedure the new conveyance may be encased in a joint of 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at 5 feet intervals with spacers or be filled to the springline with washed sand. The encasement pipe should be centered on the crossing and both ends sealed with cement grout or manufactured seal.

K. Water line/manhole separation. Unless sanitary sewer manholes and the connecting sewer can be made watertight and tested for no leakage, they must be installed so as to provide a minimum of nine feet of horizontal clearance from an existing or proposed waterline. Where the nine foot

separation distance cannot be achieved, a carrier pipe as described in subsection (a)(4) of this section may be used where appropriate.

L. Where the length of the stub is not indicated, install the stub to the right-of-way line and seal the free end with an approved plug.

3.05 PIPE INSTALLATION OTHER THAN OPEN CUT

A. For installation of pipe by augering, jacking, or tunneling, conform to requirements of specification sections on tunneling augering, jacking and microtunneling work as appropriate.

3.06 INSTALLATION OF APPURTENANCES

A. Service Connections. Install service connections to conform to requirements of Section 2534 - Sanitary Sewer Service.

B. Stacks. Construct stacks to conform to requirements of 02534 - Sanitary Sewer Service.

C. Construct manholes to conform to requirements of Section 02083 – Fiberglass Manholes, as applicable. Install frames, rings, and covers to conform to requirements of Section 02084 - Frames, Grates, Rings, and Covers.

3.07 INSPECTION AND TESTING

A. Visual Inspection: Check pipe alignment in accordance with Section 02533 - Testing for Sanitary Sewers.

B. Mandrel Testing. Use Mandrel Test to test flexible pipe for deflection. Refer to Section 02533 - Testing for Sanitary Sewers.

C. Pipe Leakage Test. After backfilling line segment and prior to tie-in of service connections, visually inspect gravity sanitary sewers where feasible, and test for leakage in accordance with Section 02533 - Testing for Sanitary Sewers. Maintain piezometer installed to control ground water and surface water until acceptance testing is completed.

3.08 BACKFILL AND SITE CLEANUP

A. Backfill and compact soil in accordance with Section 02317 - Excavation and Backfill for Utilities.

B. Backfill trench in specified lifts only after pipe installation is approved by Engineer.

C. Repair and replace removed or damaged pavement, curbs, gutters, and sidewalks.

D. Provide hydromulch seeding in areas of commercial, industrial or undeveloped land use over surface of ground disturbed during construction and not paved or not designated to be paved. Grade surface at uniform slope to natural grade as indicated on Drawings. Provide minimum of 4 inches of topsoil.

E. Provide sodding in areas of residential land use over surface of ground disturbed during construction and not paved or not designated to be paved. Grade surface at uniform slope to natural grade as indicated on Drawings. Provide minimum of 4 inches of topsoil.

END OF SECTION

SECTION 02533

TESTING FOR SANITARY SEWERS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. TESTING of sanitary sewers including:

1. Visual inspection of sewer pipes

2. Mandrel testing for flexible sewer pipes.

3. Leakage testing of sewer pipes.

4. Leakage testing of manholes.

5. Smoke testing of point repairs.

B. All tests listed in this Section are not necessarily required on this Project. Required tests are named in other Sections which refer to this Section for testing criteria and procedures.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No payment will be made for TESTING under this Section. Include payment in unit price for work requiring TESTING.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM D 3034 - Standard Specification for Type PSM Polyethylene (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.

B. ASTM F 1417 - Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low Pressure Air.

1.04 PERFORMANCE REQUIREMENTS

A. Gravity flow sanitary sewers are required to have straight alignment and uniform grade between manholes.

B. Flexible pipe, including "semi-rigid" pipe, is required to show no more than 5 percent deflection. Test pipe no sooner than 30 days after backfilling of line segment but prior to final acceptance using standard mandrel to verify that installed pipe is within specified deflection tolerances.

C. Perform air testing in accordance with requirements of this Section and TCEQ requirements. Refer to Table 02533-2, Time Allowed for Pressure Loss from 3.5 psig to 2.5 psig, Table 02533-3, Minimum Testing Times for Low Pressure Air Test, and Table 02533-4, Vacuum Test Time Table,

at end of this Section.

1.05 SUBMITTALS

A. Conform to requirements of Submittal Procedures Section of this Project Manual.

B. Test Plan: Before testing begins and in adequate time to obtain approval through submittal process, prepare and submit test plan for approval by Engineer. Include testing procedures, methods, equipment, and tentative schedule. Obtain advance written approval for deviations from Drawings and Specifications.

C. Test Reports: Submit test reports for each test on each segment of sanitary sewer.

1.06 GRAVITY SANITARY SEWER QUALITY ASSURANCE

A. Repair, correct, and retest manholes or sections of pipe which fail to meet specified requirements when tested.

1.07 SEQUENCING AND SCHEDULING

A. Perform testing as work progresses. Schedule testing so that no more than 1000 linear feet of installed sewer remains untested at one time.

B. Coordinate testing schedules with Engineer. Perform testing under observation of Engineer or Engineer's Representative.

PART 2 P R O D U C T S

2.01 DEFLECTION MANDREL

A. Mandrel Sizing. Rigid mandrel shall have outside diameter (O.D.) equal to 95 percent of inside diameter (I.D.) of pipe. Inside diameter of pipe, for purpose of determining outside diameter of mandrel, shall be average outside diameter minus two minimum wall thicknesses for O.D. controlled pipe and average inside diameter for I.D. controlled pipe, dimensions shall be per appropriate standard. Statistical or other "tolerance packages" shall not be considered in mandrel sizing.

B. Mandrel Design. Rigid mandrel shall be constructed of metal or rigid plastic material that can withstand 200 psi without being deformed. Mandrel shall have nine or more "runners" or "legs" as long as total number of legs is odd number. Barrel section of mandrel shall have length of at least 75 percent of inside diameter of pipe. Rigid mandrel shall not have adjustable or collapsible legs which would allow reduction in mandrel diameter during testing. Provide and use proving ring for modifying each size mandrel.

C. Proving Ring. Furnish "proving ring" with each mandrel. Fabricate ring of 1/2-inch-thick, 3-inch-wide bar steel to diameter 0.02 inches larger than approved mandrel diameter.

D. Mandrel Dimensions (5 percent allowance). Average inside diameter and minimum mandrel diameter are specified in Table 02533-5, Pipe vs. Mandrel Diameter, at end of this Section. Mandrels for higher strength, thicker wall pipe or other pipe not listed in table may be used when approved by Engineer.

2.02 LOW PRESSURE AIR TEST

A. Minimum Requirement for Equipment:

1. Control panel

2. Low-pressure air supply connected to control panel.

3. Pneumatic plugs: Acceptable size for diameter of pipe to be tested; capable of with standing internal test pressure without leaking or requiring external bracing.

4. Air hoses from control panel to:

a. Air supply.

b. Pneumatic plugs.

c. Sealed line for pressuring.

d. Sealed line for monitoring internal pressure.

B. Testing Pneumatic Plugs: Place pneumatic plug in each end of length of pipe on ground. Pressurize plugs to 25 psig; then pressurize sealed pipe to 5 psig. Plugs are acceptable when they remain in place against test pressure without external aids.

2.03 GROUND WATER DETERMINATION

A. Equipment: Pipe probe or small diameter casing for ground water elevation determination.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Provide labor, equipment, tools, test plugs, risers, air compressor, air hose, pressure meters, pipe probe, or any other device necessary for proper testing and inspection.

B. Determine selection of test methods and pressures for gravity sanitary sewers based on ground water elevation.

3.02 VISUAL INSPECTION OF GRAVITY SANITARY SEWERS

A. Check pipe alignment visually by flashing light between structures. Verify if alignment is true and no pipes are misplaced. In case of misalignment or damaged pipe, remove and relay or replace pipe segment.

3.03 MANDREL TESTING FOR GRAVITY SANITARY SEWERS

A. Perform deflection testing on flexible and semi-rigid pipe to confirm pipe has no more than 5 percent deflection. Mandrel testing shall conform to ASTM D 3034. Perform testing no sooner than 30 days after backfilling of line segment, but prior to final TESTING of line segment.

B. Pull approved mandrel by hand through sewer sections. Replace any section of sewer not passing mandrel. Mandrel testing is not required for stubs.

C. Retest repaired or replaced sewer sections.

3.04 LEAKAGE TESTING FOR GRAVITY SANITARY SEWERS

A. Test Options:

1. Test gravity sanitary sewer pipes for leakage with low pressure air testing.

2. Test new or rehabilitated sanitary sewer manholes with water or low pressure air. Manholes tested with low pressure air shall undergo physical inspection prior to testing.

3. Perform leakage testing after backfilling of line segment, and prior to tie-in of service connections.

4. If no installed piezometer is within 500 feet of sewer segment, provide temporary piezometer for this purpose.

B. Compensating for Ground Water Pressure:

1. Where ground water exists, install pipe nipple at same time sewer line is placed. Use 1/2-inch capped pipe nipple approximately 10 inches long. Make installation through manhole wall on top of sewer line where line enters manhole.

2. Immediately before performing line acceptance test, remove cap, clear pipe nipple with air pressure, and connect clear plastic tube to nipple. Support tube vertically and allow water to rise in tube. After water stops rising, measure height in feet of water over invert of pipe. Divide this height by 2.3 feet/psi to determine ground water pressure to be used in line testing.

C. Low Air Pressure Test: When using this test conform to ASTM C 828, ASTM C 924, or ASTM F 1417, as applicable, with holding time not less than that listed in Table 02533-2.

1. Air testing for sections of pipe shall be limited to lines less than 36-inch average inside diameter.

2. Lines 36-inch average inside diameter and larger shall be tested at each joint. Minimum time allowable for pressure to drop from 3.5 pounds per square inch gauge to 2.5 pounds per square inch during joint test shall be 10 seconds, regardless of pipe size.

3. For pipe sections less than 36-inch average inside diameter:

a. Determine ground water level.

b. Plug both ends of pipe.

c. After manhole-to-manhole section of sanitary sewer main has been sliplined and prior to any service lines being connected to new liner, plug liner at each manhole with pneumatic plugs.

d. Pressurize pipe to 4.0 psig. Increase pressure 1.0 psi for each 2.3 feet of ground water over highest point in system. Allow pressure to stabilize for 2 to 4 minutes. Adjust pressure to start at 3.5 psig (plus adjustment for ground water table). See Table 02533-2 at end of this Section.

e. To determine air loss, measure time interval for pressure to drop to 2.5 psig. Time must exceed that listed in Table 02533-2 at end of this Section for pipe diameter and length. For sliplining, use diameter of carrier pipe.

F. Retest: Repair and retest any section of pipe which fails to meet requirements.

3.05 TEST CRITERIA TABLES

A. Low Pressure Air Test:

1. Times in Table 02533-2, Time Allowed For Pressure Loss From 3.5 psig to 2.5 psig, at end of this Section, are based on equation from TCEQ Design Criteria 317.2(a)(4)(B).

T = 0.0850(D)(K)/(Q) where:

| | | |
|---|---|---|
| T | = | time for pressure to drop 1.0 pounds per square inch gauge in seconds |
| K | = | 0.000419 DL, but not less than 1.0 |
| D | = | average inside diameter in inches |
| L | = | length of line of same pipe size in feet |
| Q | = | rate of loss, 0.0015 ft3/min./sq. ft. internal surface |

2. Since K value of less than 1.0 shall not be used, there are minimum testing times for each pipe diameter as given in Table 02533-3, Minimum Testing Times for Low Pressure Air Test.

Notes:

1. When two sizes of pipe are involved, compute time by ratio of lengths involved.

3. Lines with 27-inch average inside diameter and larger may be air tested at each joint.

4. Lines with average inside diameter greater than 36 inches must be air tested for leakage at each joint.

5. If joint test is used, perform visual inspection of joint immediately after testing.

6. For joint test, pipe is to be pressurized to 3.5 psi greater than pressure exerted by groundwater above pipe. Once pressure has stabilized, minimum times allowable for pressure to drop from 3.5 pounds per square inch gauge to 2.5 pounds per square inch gauge shall be 10 seconds.

3.06 LEAKAGE TESTING FOR MANHOLES

A. After completion of manhole construction, wall sealing, or rehabilitation, but prior to backfilling, test manholes for water tightness using hydrostatic or vacuum testing procedures.

B. Plug influent and effluent lines, including service lines, with suitably-sized pneumatic or mechanical plugs. Ensure plugs are properly rated for pressures required for test; follow manufacturer's safety and installation recommendations. Place plugs minimum of 6 inches outside of manhole walls. Brace inverts to prevent lines from being dislodged when lines entering manhole have not been backfilled.

C. Vacuum testing:

1. Install vacuum tester head assembly at top access point of manhole and adjust for proper seal on straight top section of manhole structure. Following manufacturer's instructions

and safety precautions, inflate sealing element to recommended maximum inflation pressure; do not over-inflate.

2. Evacuate manhole with vacuum pump to 10 inches mercury (Hg), disconnect pump, and monitor vacuum for time period specified in Table 02533-4, Vacuum Test Time Table.

3. If drop in vacuum exceeds 1 inch Hg over specified time period tabulated above, locate leaks, complete repairs necessary to seal manhole and repeat test procedure until satisfactory results are obtained.

D. Perform hydrostatic exfiltration testing as follows:

1. Seal wastewater lines coming into manhole with internal pipe plug. Then fill manhole with water and maintain it full for at least one hour.

2. The maximum leakage for hydrostatic testing shall be 0.025 gallons per foot diameter per foot of manhole depth per hour.

3. If water loss exceeds amount tabulated above, locate leaks, complete repairs necessary to seal manhole and repeat test procedure until satisfactory results are obtained.

Table 02533-2
TESTING FOR SANITARY SEWERS

| TIME ALLOWED FOR PRESSURE LOSS FROM 3.5 PSIG TO 2.5 PSIG | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pipe Dia. In. | Min Time min:sec | Length for minute Time ft | Time for Longer Length sec | Specification Time for Length (L) Shown (min:sec) | | | | | | | | | | |
| | | | | 100 ft | 150 ft | 200 ft | 250 ft | 300 ft | 350 ft | 400 ft | 450 ft | 500 ft | 550 ft | 600 ft |
| 6 | 5:40 | 398 | 0.8548 | 5:40 | 5:40 | 5:40 | 5:40 | 5:40 | 5:40 | 5:42 | 6:25 | 7:07 | 7:50 | 8:33 |
| 8 | 7:33 | 298 | 1.5196 | 7:33 | 7:33 | 7:33 | 7:33 | 7:36 | 8:52 | 10:08 | 11:24 | 12:40 | 13:56 | 15:12 |
| 10 | 9:27 | 239 | 2.3743 | 9:27 | 9:27 | 9:27 | 9:54 | 11:52 | 13:51 | 15:50 | 17:48 | 19:47 | 21:46 | 23:45 |
| 12 | 11:20 | 199 | 3.4190 | 11:20 | 11:20 | 11:20 | 14:15 | 17:06 | 19:57 | 22:48 | 25:39 | 28:30 | 31:20 | 34:11 |
| 15 | 14:10 | 159 | 5.3423 | 14:10 | 14:10 | 17:48 | 22:16 | 26:43 | 31:10 | 35:37 | 40:04 | 44:31 | 48:58 | 53:25 |
| 18 | 17:00 | 133 | 7.6928 | 17:00 | 19:14 | 25:39 | 32:03 | 38:28 | 44:52 | 51:17 | 57:42 | 64:06 | 70:31 | 76:56 |
| 21 | 19:50 | 114 | 10.4708 | 19:50 | 26:11 | 34:54 | 43:38 | 52:21 | 61:05 | 69:48 | 78:32 | 87:15 | 95:59 | 104:42 |
| 24 | 22:40 | 99 | 13.6762 | 22:48 | 34:11 | 45:35 | 56:59 | 68:23 | 79:47 | 91;10 | 102:34 | 113:58 | 125:22 | 136:46 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | 25:30 | 88 | 17.3089 | 28:51 | 43:16 | 57:42 | 72:07 | 86:33 | 100:58 | 115:24 | 129:49 | 144:14 | 158:40 | 173:05 |
| 30 | 28:20 | 80 | 21.3690 | 35:37 | 53:25 | 71:14 | 89:02 | 106:51 | 124:39 | 142:28 | 160:16 | 178:05 | 195:53 | 213:41 |
| 33 | 31:10 | 72 | 25.8565 | 43:06 | 64:38 | 86:11 | 107:44 | 129:17 | 150:50 | 172:23 | 193:55 | 215:28 | 237:01 | 258:34 |

Table 02533-3
MINIMUM TESTING TIMES FOR LOW PRESSURE AIR TEST

| Pipe Diameter (in) | Minimum Time (sec) | Length for Minimum Time (ft) | Time for Longer Length (sec) |
|---|---|---|---|
| 6 | 340 | 398 | 1.520 (L) |
| 8 | 454 | 298 | 2.374 (L) |
| 10 | 567 | 239 | 3.419 (L) |
| 12 | 680 | 199 | 5.342 (L) |
| 15 | 850 | 159 | 7.693 (L) |
| 18 | 1020 | 133 | 10.471 (L) |
| 21 | 1190 | 114 | 13.676 (L) |
| 24 | 1360 | 100 | 17.309 (L) |
| 27 | 1530 | 88 | 21.369 (L) |
| 30 | 1700 | 80 | 25.856 (L) |
| 33 | 1870 | 72 | |

Table 02533-4
VACUUM TEST TIME TABLE

| Depth in Feet | Time in seconds by Pipe Diameter | | |
|---|---|---|---|
| | 48" | 60" | 72" |
| 4 | 10 | 13 | 16 |
| 8 | 20 | 26 | 32 |
| 12 | 30 | 39 | 48 |
| 16 | 40 | 52 | 64 |
| 20 | 50 | 65 | 80 |
| 24 | 60 | 78 | 96 |
| * | 5.0 | 6.5 | 8.0 |
| The values listed above have been extrapolated from ASTM C 924-85 | | | |

Table 02533-5
PIPE VS. MANDREL DIAMETER

| Nominal Material and Wall Construction | Average Size | I.D. (Inches) | Minimum Mandrel Diameter (Inches) | |
|---|---|---|---|---|
| PVC-Solid (SDR 26) | 6 | 6 | 5.764 | 5.476 |
| | 8 | 7.715 | 7.329 | |
| | 10 | 9.646 | 9.162 | |
| PVC-Solid (SDR 35) | 12 | 12 | 11.737 | 11.150 |
| | 15 | 14.374 | 13.655 | |
| | 18 | 17.629 | 16.748 | |
| | 21 | 20.783 | 19.744 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 24 | 23.381 | 22.120 | | | | |
| 27 | 26.351 | 25.033 | | | | |
| PVC-Truss | | 8 | 7.750 | 7.363 | | |
| 10 | 9.750 | 9.263 | | | | |
| 12 | 11.790 | 11.201 | | | | |
| 15 | 14.770 | 14.032 | | | | |
| PVC-Profile (ASTM | | | F 794) | 12 | 11.740 | 11.153 |
| 15 | 14.370 | 13.652 | | | | |
| 18 | 17.650 | 16.768 | | | | |
| 21 | 20.750 | 19.713 | | | | |
| 24 | 23.500 | 22.325 | | | | |
| 27 | 26.500 | 25.175 | | | | |
| 30 | 29.500 | 28.025 | | | | |
| 36 | 35.500 | 33.725 | | | | |
| 42 | 41.500 | 39.425 | | | | |
| 48 | 47.500 | 45.125 | | | | |
| HDPE-Profile | | 18 | 18.000 | 17.100 | | |
| 21 | 21.000 | 19.950 | | | | |
| 24 | 24.000 | 22.800 | | | | |
| 27 | 27.000 | 25.650 | | | | |
| 30 | 30.000 | 28.500 | | | | |
| 36 | 36.000 | 34.200 | | | | |
| 42 | 42.000 | 39.900 | | | | |
| 48 | 48.000 | 45.600 | | | | |
| 54 | 54.000 | 51.300 | | | | |
| 60 | 60.000 | 57.000 | | | | |
| Fiberglass | | 12 | 12.85 | 11.822 | | |
| (Class SN 46) | | 18 | 18.66 | 17.727 | | |
| 20 | 20.68 | 19.646 | | | | |
| 24 | 24.72 | 23.484 | | | | |
| 30 | 30.68 | 29.146 | | | | |
| 36 | 36.74 | 34.903 | | | | |
| 42 | 42.70 | 40.565 | | | | |
| 48 | 48.76 | 46.322 | | | | |
| 54 | 54.82 | 52.079 | | | | |
| 60 | 60.38 | 57.361 | | | | |

**END OF SECTION**

Section 02535

NON-METALLIC UTILITY LINE MARKING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Furnishing and installation of utility marking tape capable of being detected electronically and marker posts, all in conjunction with backfill of non-metallic utility lines.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for non-metallic utility line marking. Include the cost of such marking in related work.~~

~~2. Refer to Section 01270 - Measurement and Payment for Unit Price Procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for Work in this Section is included in the total Stipulated Price.

1.03 DEFINITIONS

A. Non-metallic utility line. Pressure or gravity flow pipelines constructed predominantly of PVC, HDPE, Clay, or other non-ferrous materials.

1.04 REFERENCE STANDARDS

A. ASTM D 2103 - Specification for Polyethylene Film and Sheeting

1.05 SUBMITTALS

A. Submittals shall conform to requirements of Section 01300 - Submittals.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Metalized tape shall be manufactured specifically for warning and identification of buried utility lines. Tapes shall be inert plastic specially formulated for prolonged use underground and shall be resistant to alkalies, acids and other destructive agents found in the soil. Tape shall be provided in rolls, 3-inch minimum width, color coded for intended service with warning and identification imprinted in bold black letters continuously and repeatedly over entire tape length. Warning and identification shall be "CAUTION BURIED [SEWER] [WATER] PIPELINE" or similar wording. Color code and letter coding shall be permanent, unaffected by moisture and other substances contained in trench backfill material.

B. Color Codes shall be as follows:

1. Water Pipeline: Blue
2. Sewer Pipeline (both gravity and pressure): Green

C. Buried warning, identification, and locator tape for use in trenches containing non-metallic water and sewer lines shall be 5.5-mil composition film containing one layer of metalized foil laminated between two layers of inert plastic film. Tape shall be detectable by cable locating equipment used to locate underground utility pipelines.

D. Drivable, Flexible, Composite Utility Marker: Shall be durable, reinforced composite posts manufactured specifically for warning and identification of buried utility lines. Posts shall be 3-1/2 inches minimum width and a minimum of 78 inches in length, color coded for intended service with a 3-inch wide warning and identification decal attached. Warning and identification shall be "CAUTION BURIED [SEWER] [WATER] PIPELINE" or similar wording. Code and letter coloring shall be permanent.

PART 3 E X E C U T I O N

3.01 INSTALLATION OF BURIED WARNING, IDENTIFICATION, AND LOCATOR TAPE.

A. Install tape continuously in backfill directly over buried utility pipeline, 6 to 24 inches below finished grade. Terminate marked segment no farther than 3 feet from an accessory of the pipeline (manholes, cleanouts, valve boxes, etc.).

3.01 INSTALLATION OF DRIVABLE, FLEXIBLE, COMPOSITE UTILITY MARKERS.

A. Location: Install flexible, composite utility markers in unpaved / undeveloped areas, highway, railroad, fence crossings, changes in pipeline direction, and as directed by the Resident Project Representative.

B. Installation: Install in a true, vertical plane directly over or immediately adjacent (within 2 feet) to the utilities to which they relate. Posts shall be driven to provide an anchoring depth of 30 inches.

END OF SECTION

SECTION 02580
PAVEMENT MARKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pavement striping and handicap symbols.
2. Primer adhesive.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product literature and installations instructions including guidelines and templates as required.

B. Samples: Submit test samples when requested.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements: Handicap parking space marking shall comply with state of Texas and city requirements.

1.4 PROJECT CONDITIONS

A. Apply marking when surfaces are thoroughly dry and when air temperature is above 40 degrees F.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:

1. Sherwin-Williams.
2. Pratt & Lambert.

2.2 MATERIALS

A. Latex Paint:

1. Colors: White, yellow, red, and blue as required.

2. Acceptable products - Sherwin-Williams:
   a. White or Yellow: Set Fast Latex Traffic Marking Paint or Acrylic Water Borne Traffic Marking Paint.
   b. Red or Blue: Metalatex Semi-Gloss Coatings.

3. Acceptable Products - Devoe:
   a. White or Yellow: #416XX Traffic-Line Water Based Traffic Marking Paint.
   b. Red or Blue: #83XX Mirrolac W.B.

B. Paint Primer: As recommended by paint manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Ensure new concrete and asphaltic concrete paving has cured for 30 days minimum prior to application of pavement marking.

3.2 PREPARATION

A. Clean surface of scale, dirt, mud, sand gravel, oil, grease and other foreign material.

B. On portland cement concrete, apply primer for striping as recommended by paint manufacturer to act as barrier coat with curing compound.

C. Layout lines and symbols in advance of making application. Space control points at intervals to ensure accurate location of markings.

3.3 PAINT STRIPING APPLICATION

A. Lay out markings using guide line, templates and forms as required. Use white or yellow, match existing paint to distinguish parking spaces. Use red paint for fire lanes.

B. Apply 4" wide stripes at manufacturer's recommended rate.

C. Stencil "FIRE LANE - NO PARKING" in 4" high white block letters on red background 6" high and of appropriate length for lettering background at intervals not closer than 25 ft. and not farther apart than 50 ft. on curbs and pavement throughout length of fire lane.

E. Place suitable warning signs near work site to alert approaching traffic from all directions to prevent damage to newly painted surfaces.

3.4 PROTECTION

A. Protect pavement markings in accordance with manufacturer's instructions.

END OF SECTION

Section 02611

REINFORCED CONCRETE PIPE

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Reinforced concrete pipe for sanitary sewers and storm sewers.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for reinforced concrete pipe under this Section. Include cost in unit price work as specified in the following Sections:~~

~~a. Section 02426 - Sanitary Sewer Line in Tunnel.~~

~~b. Section 02531 - Gravity Sanitary Sewers.~~

~~c. Section 02631 - Storm Sewers.~~

~~2. Refer to Section 01270- Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM C 76 - Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

B. ASTM C 443 - Joints for Circular Concrete Sewer and Culvert Pipe.

C. ASTM C 497 - Method of Testing Concrete Pipe, Sections, or Tile.

D. ASTM C 506 - Reinforced Concrete Arch Culvert, Storm Drain and Sewer Pipe

E. ASTM C 507 - Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe.

F. ASTM C 655 - Reinforced Concrete D-load Culvert, Storm Drain and Sewer Pipe.

G. ASTM C 822 - Standard Definitions and Terms Relating to Concrete Pipe and Related Products.

H. ASTM C 877 - Standard Specification for External Sealing Bands for Non circular Concrete Sewer, Storm Drain, and Culvert Pipe.

1.04 SUBMITTALS

~~A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit complete product data for pipe, fittings and gaskets for approval. Indicate conformance to appropriate reference standards.

C. Submit certificates by a testing laboratory, hired and paid by the manufacturer, that concrete pipes meet applicable standards when tested in accordance with ASTM C 497.

D. For jacking pipe, submit drawings and data describing grouting port design and closure procedures when required by Section 02431 - Tunnel Grout, including liner repair, as applicable.

PART 2 P R O D U C T S

2.01 REINFORCED CONCRETE PIPE

A. Circular reinforced concrete pipe shall conform to requirements of ASTM C 76, for Class III wall thickness. Joints shall be rubber gasketed conforming to ASTM C 443.

B. Reinforced concrete arch pipe shall conform to the requirements of ASTM C 506 for Class A-III. Joints shall conform to ASTM C 877.

C. Reinforced concrete elliptical pipe, either vertical or horizontal, shall conform to the requirements of ASTM C 507 for Class VE-III for vertical or Class HE-III for horizontal. Joints shall be rubber gaskets conforming to ASTM C 877.

D. Reinforced concrete D-load pipe shall conform to the requirements of ASTM C 655.

2.02 GASKETS

A. When no contaminant is identified, furnish rubber gasket conforming to ASTM C 443 for circular reinforced concrete pipe and rubber gasket conforming to ASTM C 877 for reinforced concrete elliptical pipe.

B. Pipes to be installed in potentially contaminated areas, especially where free product is found near the elevation of the proposed sewer, shall have the following gasket materials for the noted contaminants:

| **CONTAMINANT** | **GASKET MATERIAL REQUIRED** |
|---|---|
| Petroleum (diesel, gasoline) | Nitrile Rubber |
| Other Contaminants | As recommended by the pipe manufacturer |

2.03 LINERS FOR SANITARY SEWER PIPE

A. Reinforced concrete pipe for sanitary sewers shall be PVC lined.

B. Reinforced concrete pipes to be installed in potentially contaminated areas shall have liners that are recommended by the manufacturer as resistant to contaminants identified in the Phase II Environmental Site Assessment Report.

2.04 SOURCE QUALITY CONTROL

A. Representatives of Resident Project Representatives will inspect manufacturer's plant and casting operations as deemed necessary.

PART 3 E X E C U T I O N

3.01 INSTALLATION

A. Conform to requirements of the following Sections, as applicable:

~~1. Section 02446 - Pipe and Casing Augering~~

2. Section 02531 - Gravity Sanitary Sewers

3. Section 02720 - Storm Drainage System.

~~4. Section 02441 - Microtunneling and Pipe Jacked Tunnels~~

B. Install reinforced concrete pipe in accordance with manufacturer's recommendations.

END OF SECTION

SECTION 02720
STORM DRAINAGE SYSTEM

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes storm drainage systems consisting of storm sewers, inlets, culverts and other drainage structures as shown on the Drawings and specified herein from a point 5 feet outside the buildings to the point of disposal.

B. Related Sections: The following Sections contain requirements that relate to this section.

1. Division 2 Section 02200: Earthwork and Site Grading
2. Division 2 Section 02516: Cast-in-Place Concrete

### 1.3 SUBMITTALS

A. General: Submit the following:

1. Product data and certification of pipe quality from the manufacturer prior to installation.
2. A trench safety plan for all excavation in excess of 5 feet which meets all requirements of Texas state law and O.S.H.A.
3. Testing laboratory certification of specified materials.
4. Compaction tests for embedment and backfill.
5. Shop drawings and manufacturer's certifications for precast concrete inlets.
6. Shop drawings, product data, mix designs and materials certifications for reinforced concrete structures.
7. Shop drawings for grates and castings.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Concrete Pipe: (15” and larger - public). Reinforced concrete culvert pipe conforming to ASTM C76, Class III, with tongue and groove joints. Lifting holes in pipe sections are not permissible.

B. Corrugated Polyethylene Pipe: (15” and smaller – private) Polethylene pipe with corrugated exterior and smooth interior conforming to ASTM F405. Use fittings manufactured specifically for use with this pipe.

C. PVC Pipe: (12” and smaller – private) PVC pipe per ASTM D-3034, SDR-35.

D. Aluminized Steel: (8” – private) Type 2 to meet all requirements by Contech or approved

equal.

E. Cement Mortar: One part cement and two parts clean sharp sand with lime added in an amount not exceeding twenty-five percent of volume of cement. Mix dry and then wet to proper consisting for use. Use no mortars that have stood for more than one hour.

F. Reinforced Concrete: Reinforced concrete conforming to Section 02516 for inlets, culverts and headwalls.

G. Precast Inlets: Precast inlets shall be reinforced concrete with 4500 psi concrete at 28 days and grade 60 reinforcing steel.

H. Jointing Materials:

1. Reinforced Concrete Pipe: Cold applied preformed plastic gaskets suitable for sealing joints of tongue and groove concrete pipe. Use "Ram-nek" brand or approved equal.

## PART 3 - EXECUTION

### 3.1 PREPARATION

A. Pipe Trenches:

1. Excavate the pipe trenches to the widths necessary for the proper laying of the pipe but in no case wider than 24 inches plus the outside diameter of the pipe and keeping the banks as nearly vertical as practicable to at least 12 inches above top of pipe. In paved areas, maintain the trench walls vertical and sheeted, if required, with the clearance between the pipe and trench wall or back of sheeting not exceeding 12 inches. Excavate the bottom of the trenches to a depth as indicated on the plans and replace any over excavation with suitable compacted material.
2. Remove for the full width of the excavation soft, spongy, or otherwise unstable material encountered below the established grade of the excavation which will not provide a firm foundation for subsequent work and replace with approved fill material.
3. Where sheeting and bracing are necessary to prevent caving of the trench sidewalls of excavation for other structures, and to safeguard the workmen, excavate the trench or excavation for other structures to such width that the proper allowance is made for the space occupied by the sheeting and bracing to provide clearance as specified above.
4. Place embedment as foundation for pipe in accordance with City standard details.

### 3.2 PIPE INSTALLATION

A. General

1. Pipe Handling: All pipe, fittings and specials shall be handled in such a manner as not to damage the material. All pipe and fittings handled with clamps or slings must meet with the approval of the Owner; no hooks shall be permitted. When it becomes necessary to deflect the pipe to avoid obstructions, the deflection of each joint must

be within the limits provided by the manufacturer and be approved by the Owner.

2. Laying Underground Conduit Pipe: Previous to being lowered into the trench, each pipe shall be carefully inspected; and those not meeting specifications shall be rejected and either destroyed or removed from the job. All lumps or excrescences on the ends of conduit shall be removed before it is lowered into the trench. No pipe shall be laid except in the presence of the Owner, unless otherwise specified; and the Owner may order the removal of and re-laying of any pipe not so laid. The pipe and specials shall be so laid in the trench that after the project is completed the interior surface shall conform accurately to the grade and alignment indicated on the plans. Bell holes shall be excavated and all pipe shall be carefully adjusted to fit snugly in the bedding so that the entire length bears on bedding material with no wedging or blocking to hold up the bell. All pipe shall be laid in the dry, regardless of the type of joint used. Pipes shall be laid with the bell or groove end upgrade unless otherwise approved by the Owner; and, in any event, shall be laid with the bell or collar away from the last section placed. Before laying the pipe, the interior of the joints shall be carefully bored smooth and clean and the annular space shall be kept free from dirt, stones or water. Pipe shall be installed and joints made up in complete conformance with the instructions and recommendations regarding proper installation and assembly furnished by the manufacturer. Proper facilities shall be provided for hoisting and lowering the section of the pipe into the trench without disturbing the prepared foundation and the sides of the trench. All pipe shall be so laid that the contact in the joint between two lengths of pipe shall be uniform throughout the circumference of the joint. Where curves in the alignment are indicated on the drawings, standard pipe (short sections of pipe or bevels) shall be used with the outside edge of the joint pulled away from the seat to make a smooth curve.

B. Drainage Structures

1. Construct concrete structures in conformity with City and TxDOT standard details. Design and construct forms so that they may be removed without injury to the concrete. Thoroughly compact the concrete and leave forms in place for at least 24 hours after concrete is poured. Cure the concrete for at least 5 days after removal of forms. Thoroughly clean honeycomb places, saturate with water and point up with mortar.

C. Inlets: Inlets shown on the plans may be precast or poured-in-place reinforced concrete at the Contractor's option.

## 3.3 BACKFILLING FOR PIPE AND STRUCTURES

A. After the pipe has been installed on specified embedment, place specified backfill at a moisture content which will facilitate compaction alongside the pipe in layers not exceeding 6 inches loose measure in depth. Thoroughly compact the fill under the haunches of the pipe and compact each layer by rolling or tamping with mechanical rammers. Continue this method of filling and compacting until the fill is 12-inches above the pipe, then place the remainder of the backfill, in lifts not exceeding 9-inches. Operate heavy equipment in a manner so that no damage to the pipe will result. Compact backfill to a point 12 inches above the pipe to not less than 95 percent of maximum dry unit weight as determined by ASTM D698. Compact backfill material 12 inches and more above the pipe to not less than 95 percent of the maximum dry unit weight as determined by ASTM D698 under pavement and 90 percent elsewhere.

B. Place and compact backfill for drainage structures in the same manner as specified above for pipe, except allow the concrete to cure for not less than five days before placing the backfill.

**END OF SECTION**

Section 02741

ASPHALTIC CONCRETE PAVEMENT

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Surface courses of compacted mixture of coarse and fine aggregates and asphaltic material.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for asphaltic concrete pavement is on square yard basis. Separate pay items reused for each different required thickness of pavement.~~

~~2. Payment for asphaltic concrete pavement includes payment for associated work performed in accordance with Section 02743 - Tack Coat.~~

~~3. Payment for asphaltic concrete in miscellaneous areas is on a square yard basis. Miscellaneous areas include tie-in to existing driveways.~~

~~4. No separate payment will be made under this section for asphaltic concrete provided for Section 02951-Pavement Replacement for Utility Construction~~

~~5. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

~~6. Refer to Paragraph 3.08 for unit price adjustments.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM C 33 - Standard Specification for Concrete Aggregates.

B. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

C. ASTM C 136 - Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

D. TxDOT Tex-126-E - Molding, Testing, and Evaluation of Bituminous Black Base Material.

E. TxDOT Tex-106-E - Method of Calculating the Plasticity Index of Soils.

F. TxDOT Tex-203-F - Sand Equivalent Test.

G. TxDOT Tex-204-F - Design of Bituminous Mixtures.

H. TxDOT Tex-207-F - Determination of Density of Compacted Bituminous Mixtures.

I. TxDOT Tex-208-F - Test for Stabilometer Value of Bituminous Mixtures.

J. TxDOT Tex-217-F - Determination of Deleterious Material and Decantation Test for Coarse Aggregates.

K. TxDOT Tex-227-F - Theoretical Maximum Specific Gravity of Bituminous Mixtures

1.04 SUBMITTALS

~~A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit certificates that asphaltic materials and aggregates meet requirements of Article 2.01, Materials, of this Section.

C. Submit proposed design mix and test data for each type and strength of surface course in Work.

D. Submit manufacturer's description and characteristics of mixing plant for approval.

D. Submit manufacturer's description and characteristics of spreading and finishing machine for approval.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Coarse Aggregate: Gravel or crushed stone, or combination thereof, that is retained on No. 10 sieve, uniform in quality throughout and free from dirt, organic or other injurious matter occurring either free or as coating on aggregate. Aggregate shall conform to ASTM C 33 except for gradation. Furnish rock or gravel with Los Angeles abrasion loss not to exceed 40 percent by weight when tested in accordance with ASTM C 131.

B. Fine Aggregate: Sand or stone screenings or combination of both passing No. 10 sieve. Aggregate shall conform to ASTM C 33 except for gradation. Use sand composed of sound, durable stone particles free from loams or other injurious foreign matter. Furnish screenings of same or similar material as specified for coarse aggregate. Plasticity index of that part of fine aggregate passing No. 40 sieve shall be not more than 6 when tested by Tex-106-E. Sand equivalent shall have a minimum value of 45 when tested by Tex-203-F.

C. Composite Aggregate: Conform to following limits when graded in accordance with ASTM C 136.

| **GRADUATION OF COMPOSITE AGGREGATE** | |
|---|---|
| **Sieve Size** | **Percent Passing** |
| 1/2" | 100 |
| 3/8” | 85 to 100 |
| #4 | 50 to 70 |
| #10 | 32 to 42 |
| #40 | 11 to 26 |
| #80 | 4 to 14 |
| #200 | 1 to 6* |
| *2 to 8 when Test Method Tex – 200 - F, Part II (Washed Sieve Analysis) is used | |

D. Asphaltic Material: Moisture-free homogeneous material which will not foam when heated to 347 degrees F, meeting following requirements:

| VISCOSITY GRADE | | | | |
|---|---|---|---|---|
| | AC-10 | | AC-20 | |
| TEST | Min. | Max. | Min. | Max. |
| Viscosity, 140º F stokes | 1000 | ± 200 | 2000 | ± 400 |
| Viscosity, 275º F stokes | 1.9 | - | 2.5 | - |
| Penetration, 77º F, 100g, 5 sec. | 85 | - | 55 | - |
| Flash Point, C.O.C., F. | 450 | - | 450 | - |
| Solubility in trichloroethylene, percent | 99.0 | - | 99.0 | - |
| Tests on residues from thin film oven tests: | | | | |
| Viscosity, 140º F stokes | | 3000 | - | 6000 |
| Ductility, 77º F, 5 cms per min., cms | 100 | - | 70 | - |
| Spot tests | Negative for all grades | | | |

1. Material shall not be cracked.

2.02 EQUIPMENT

A. Mixing Plant: Weight-batching or drum mix plant with capacity for producing Continuously mixtures meeting specifications. Plant shall have satisfactory conveyors, power units, aggregate handling equipment, hot aggregate screens and bins, and dust collectors. Provide equipment to supply materials adequately in accordance with rated capacity of plant and produce finished material within specified tolerances. Following equipment is essential:

1. Cold aggregate bins and proportioning device.
2. Dryer.
3. Screens.
4. Aggregate weight box and batching scales.
5. Mixer.
6. Asphalt storage and heating devices.
7. Asphalt measuring devices.
8. Truck scales.

B. Bins: Separate aggregate into minimum of four bins to produce consistently uniform grading and asphalt content in completed mix.

2.03 MIXES

A. Employ a certified testing laboratory to prepare design mixes. Test in accordance with Tex-126-E or Tex-204-F and Tex-208-F.

B. Density and Stability Requirements:

| Percent Density | | Percent | HVEEM Stability Percent |
|---|---|---|---|
| Min. | Max. | Optimum | Not Less Than |
| 94.5 | 97.5 | 96 | 35 |

C. Proportions for Asphaltic Material: Provide 4 to 8 percent of mixture by weight. Aggregate by weight shall not contain more than 1.0 percent by weight of fine dust, clay-like particles, or silt when tested in accordance with Tex-217-F, Part II.

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify compacted base course is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Prime Coat: If indicated on the Drawings, apply a prime coat conforming to requirements of Section 02742 - Prime Coat. Do not apply a tack coat until primed base has cured to satisfaction of Resident Project Representative.

B. Tack Coat: Conform to requirements of Section 02743 - Tack Coat.

C. Prepare subgrade in advance of asphaltic concrete paving operation.

D. Do not use cutback asphalt during the period of April 16 to September 15.

3.03 PLACEMENT

A. Do not place asphaltic mixture when air temperature is below 50 degrees F and falling. Mixture may be placed when air temperature taken in shade and away from artificial heat is above 40 degrees F and rising.

B. Haul prepared and heated asphaltic concrete mixture to the project in tight vehicles previously cleaned of foreign material. Mixture shall be at temperature between 250 degrees F and 325 degrees F when laid.

C. Spread material into place with approved mechanical spreading and finishing machine of screening or tamping type.

D. Surface Course Material: Surface course 2 inches or less in thickness may be spread in one lift. Spread lifts in such manner that, when compacted, finished course will be smooth, of uniform density, and will be to section, line and grade as shown. Place construction joints on surface courses to coincide with lane lines or as directed by Resident Project Representative.

E. Place courses as nearly continuously as possible. Pass roller over unprotected ends of Freshly laid mixture only when mixture has cooled. When work is resumed, cut back laid material to produce slightly beveled edge for full thickness of course. Remove old material which has been cut away and lay new mix against fresh cut.

F. When new asphalt is laid against existing or old asphalt, existing or old asphalt shall be saw cut full depth to provide straight smooth joint.

G. In restricted areas where use of paver is impractical, spread and finish asphalt by

Mechanical compactor. Use wood or steel forms, rigidly supported to assure correct grade and cross section. Carefully place materials to avoid segregation of mix. Do not broadcast material. Remove any lumps that do not break down readily. Place asphalt courses in same sequence as if placed by machine.

3.04 COMPACTION

A. Begin rolling while pavement is still hot and as soon as it will bear roller without undue displacement or hair cracking. Keep wheels properly moistened with water to prevent adhesion of surface mixture. Do not use excessive water.

B. Compress surface thoroughly and uniformly, first with power-driven, 3-wheel, or tandem rollers weighing from 8 to 10 tons. Obtain subsequent compression by starting at side and rolling longitudinally toward center of pavement, overlapping on successive trips by at least one-half width of rear wheels. Make alternate trips slightly different in length. Continue rolling until no further compression can be obtained and rolling marks are eliminated. Complete rolling before mixture temperature drops below 175 degrees F.

C. Use tandem roller for final rolling. Double coverage with approved pneumatic roller on asphaltic concrete surface is acceptable after flat wheel and tandem rolling has been completed.

D. Along walls, curbs, headers and similar structures, and in locations not accessible to rollers, compact mixture thoroughly with lightly oiled tamps.

E. Compact binder course and surface course to density not less than 94 percent nor more than 98 percent of the maximum possible density of voidless mixture composed of same materials in like proportions.

3.05 TOLERANCES

A. Furnish templates for checking surface in finished sections. Maximum deflection of templates, when supported at center, shall not exceed 1/8 inch.

B. Completed surface, when tested with 10-foot straightedge laid parallel to center line of pavement, shall show no deviation in excess of 1/8 inch in 10 feet. Correct any surface not meeting this requirement.

3.06 FIELD QUALITY CONTROL

~~A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.~~

B. Minimum of one core will be taken at random locations per 1000 feet per lane of roadway or 500 square yards of base to determine in-place depth and density.

C. In-place density will be determined in accordance with Tex-207-F and Tex-227-F from cores or sections. Other methods of determining in-place density, which correlate satisfactorily with results obtained from roadway specimens, may be used when approved by Engineer.

D. Contractor may, at his own expense, request three additional cores in vicinity of cores indicating nonconforming in-place depths. In-place depth at these locations shall be average depth of four cores.

E. Fill cores and density test sections with new compacted asphaltic concrete.

3.07 NONCONFORMING PAVEMENT

A. Remove and replace any non – conforming pavement.

B. Remove and replace areas of asphalt found deficient in thickness by more than 10 percent. Use new asphaltic base of thickness shown on Drawings.

C. Replace nonconforming pavement sections.

3.08 UNIT PRICE ADJUSTMENT

A. Unit price adjustments shall be made for in-place depth determined by cores as follows:

1. Adjusted Unit Price shall be ratio of average thickness as determined by cores to thickness bid upon, times unit price bid.

2. Adjustment shall apply to lower limit of 90 percent and upper limit of 105 percent of unit price.

3. Average depth below 90 percent may be rejected by Engineer.

3.09 PROTECTION

A. Do not open pavement to traffic until 12 hours after completion of rolling, or as shown on Drawings.

B. Maintain asphaltic concrete pavement in good condition until completion of Work.

C. Repair defects immediately by replacing asphaltic concrete pavement to full depth.

END OF SECTION

Section 02742

PRIME COAT

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Prime coat for asphaltic concrete paving

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for prime coat under this Section. Include payment in unit price for material being primed.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 SUBMITTALS

~~A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit product data for proposed prime coat.

C. Submit report of recent calibration of distributor.

PART 2 P R O D U C T S

A. Cutback Asphalt

B. Provide moisture-free homogeneous material which will not foam when heated to 347 degrees F and which meets following requirements:

C. Asphalt material for prime coat shall be MC-30 or MC-70 and shall meet following requirements:

| **PROPERTIES** | **TYPE - GRADE** | | | |
|---|---|---|---|---|
| | **MC-30** | | **MC-70** | |
| | **MIN.** | **MAX.** | **MIN.** | **MAX.** |
| Water, Percent | --- | 0.2 | --- | 0.2 |
| Flash Point, T.O.C., °F | 100 | --- | 100 | --- |
| Kinematic Viscosity at 140°F, cst | 30 | 60 | 70 | 140 |

2. Distillate shall be as follows, expressed as percent by volume of total distillate to 680 degrees F:

| TEMPERATURE | TYPE-GRADE | | | |
|---|---|---|---|---|
| | MC-30 | | MC-70 | |
| | MIN. | MAX. | MIN. | MAX. |
| to 437°F | --- | 25 | --- | 20 |
| to 500°F | 40 | 70 | 20 | 60 |
| to 600°F | 75 | 93 | 65 | 90 |
| Residue from 680ºF Distillation, Volume, Percent | 50 | --- | 55 | --- |

3. Tests on Distillation Residue:

| TEST | TYPE-GRADE | | | |
|---|---|---|---|---|
| | MC-30 | | MC-70 | |
| | MIN. | MAX. | MIN. | MAX. |
| Penetration at 77°F, 100g, 5 sec., cm | 120 | 250 | 120 | 250 |
| Ductility at 77°F, 5 cm/min., cm | 100* | --- | 100* | --- |
| Solubility in Trichloroethylene, % | 99 | --- | 99 | --- |
| Spot Test | All Negative | | | |

*If penetration of residue is more than 200 and ductility at 77 degrees F is less than 100 cm, material will be acceptable if its ductility at 60 degrees F is more than 100 cm.

2.02 EMULSIFIED PETROLEUM RESIN

A. EPR-1 Prime: Slow curing emulsion of petroleum resin and asphalt cement conforming to the following requirements:

| PROPERTIES | MIN. | MAX. |
|---|---|---|
| Fural Viscosity at 77°F, Sec | 14 | 40 |
| Residue by Evaporation, % by Weight | 60 | - |
| Sieve Test, % | - | 0.1 |
| Particle Charge Test | Positive | |
| Tests on the Distillation Residue: | | |
| Flash Point, COC (F) | 400 | - |
| Kinematic Viscosity @ 140 F (cst) | 190 | 350 |

B. For use, EPR-1 may be diluted with water up to a maximum three parts water to one part EPR-1 in order to achieve desired concentration of residual resin/asphalt to facilitate application.

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify base is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Thoroughly clean base course surface of loose material by brooming prior to application of prime coat.

B. Prepare sufficient base in advance of paving for efficient operations.

3.03 APPLICATION, BASIC

A. Apply prime coat with approved type of self-propelled pressure distributor. Distribute prime coat evenly and smoothly under pressure necessary for proper distribution.

B. Keep storage tanks, piping, retorts, booster tanks, and distributors used in handling asphaltic materials clean and in good operating condition. Conduct operations so that asphaltic material does not become contaminated.

C. If yield of asphaltic material appears to be in error, recalibrate distributor prior to continuing work.

D. Maintain the surface until Work is accepted by Owner.

3.04 APPLICATION, CUTBACK ASPHALT

A. Do not place prime coat when air temperature is below 60 degrees F and falling. Materials may be placed when air temperature taken in shade and away from artificial heat is above 50 degrees F and rising.

B. Distribute at rate of 0.25 to 0.35 gallons per square yard.

C. Equipment shall be capable of reporting temperature of asphaltic material in heating equipment and in distributor, for determining rate of application, and for obtaining uniformity at junction of two distributor loads. Maintain in accurate working order, including recording thermometer at storage heating unit at all times.

D. Temperature of application shall be based on temperature-viscosity relationship that will permit application of asphalt with viscosity of 100 to 125 centistokes. Maintain asphalt within 15 degrees F of temperature required to meet viscosity. Selected temperature shall be within following range.

| Prime Coat Type | Minimum (°F) | Maximum (°F) |
|---|---|---|
| MC-30 | 70 | 150 |
| MC-70 | 125 | 175 |

E. Do not allow temperature of MC-30 to exceed 175 degrees F at any time.

F. Do not allow temperature of MC-70 to exceed 200 degrees F at any time.

3.05 APPLICATION, EMULSIFIED PETROLEUM RESIN

A. Do not place prime coat when air temperature is below 36 degrees F and falling.

B. Distribute at rate of 0.15 to 0.25 gallons per square yard.

3.06 PROTECTION

A. Prevent traffic or placement of subsequent courses over freshly applied prime coat until authorized by Resident Project Representative.

END OF SECTION

Section 02743

TACK COAT

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Tack coat for asphaltic concrete paving.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for tack coat under this Section. Include payment in unit price for asphaltic pavements.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM D 244 - Standard Test Methods for Emulsified Asphalts.

1.04 SUBMITTALS

~~A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit product data for proposed tack coat.

C. Submit report of recent calibration of distributor.

PART 2 P R O D U C T S

2.01 CUTBACK ASPHALT

A. Provide moisture-free homogeneous material which will not foam when heated to 347 degrees F and which meets following requirements:

1. Asphalt material for tack coat: RC-250 and meet following:

| **PROPERTIES** | **RC – 250** | |
|---|---|---|
| | **MIN.** | **MAX.** |
| Water, Percent | --- | 0.2 |
| Flash Point, T.O.C.,°F | 80 | --- |
| Kinematic Viscosity at 140°F, cst | 250 | 400 |

2. Distillate: Expressed as percent by volume of total distillate to 680 F:

| **TEMPERATURE** | **RC – 250** |
|---|---|

| | MIN. | MAX. |
|---|---|---|
| to 437°F | 40 | 75 |
| to 500°F | 65 | 90 |
| to 600°F | 85 | --- |
| Residue from 680°F Distillation, Volume, Percent | 70 | --- |

3. Tests on Distillation Residue:

| PROPERTIES | RC – 250 | |
|---|---|---|
| | MIN. | MAX. |
| Penetration at 77°F, 100g, 5 sec. | 100 | 150 |
| Ductility at 77°F, 5 cm/min. cms | 100 | --- |
| Solubility in Trichloroethylene, % | 99 | --- |
| Spot Test | All Negative | |

2.02 EMULSION

A. Provide homogeneous material which shall show no separation of asphalt after mixing and shall meet the viscosity requirements at any time within 30 days after delivery.

1. Emulsion material for tack coat: SS-1 and meet following:

| PROPERTIES | SS – 1 | |
|---|---|---|
| | MIN. | MAX. |
| Furol Viscosity at 77°F, sec. | 30 | 100 |
| Residue by Distillation, % | 60 | --- |
| Oil Portion of Distillate, % | --- | 2 |
| Sieve Test, % | --- | 0.1 |
| Miscibility (Standard Test) | Passing | Passing |
| Cement Mixing, % | --- | 2.0 |
| Storage Stability, 1 Day, % | --- | 1 |
| Test on Residue:<br>Penetration at 77°F, 100g, 5 sec.<br>Solubility in Trichloroethylene, %<br>Ductility at 77°F, 5 cm/min., cms | <br>120<br>97.5<br>100 | <br>160<br>---<br>--- |

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify compacted base is ready to support imposed loads.

B. Verify lines and grades are correct.

3.02 PREPARATION

A. Thoroughly clean base course or concrete surface of loose material by brooming prior to application of tack coat.

3.03 APPLICATION

A. Apply tack coat uniformly by use of approved distributor at rate not to exceed 0.05 gallons per square yard of surface.

B. Paint contact surfaces of curbs and structures, and joints with thin uniform coat of tack coat.

C. Cutback Asphalt:

1. Do not place tack coat when air temperature is below 50 degrees F and falling. Materials may be placed when air temperature taken in shade and away from artificial heat is above 40 degrees F and rising.

2. Temperature of tack coat shall be between 125 degrees F and 180 degrees F when applied.

3. Do not heat tack coat above 200 degrees F at any time.

3.04 PROTECTION

A. Prevent traffic or placement of subsequent courses over freshly applied tack coat until authorized by Resident Project Representative.

END OF SECTION

Section 02751

CONCRETE PAVING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Portland cement concrete paving.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for concrete paving is on square yard basis. Separate pay items are used for each different required thickness of pavement.~~

~~2. Payment for concrete paving, high early strength, is on square yard basis.~~

~~3. Measurement for utility projects: Match actual pavement replaced but no greater than maximum pavement replacement limits shown on Drawings.~~

~~a. When removed pavement is greater than one-half of pavement lane width or within 18 inches of longitudinal joint, replace pavement for full lane width or to nearest longitudinal joint.~~

~~b. No payment will be made for work outside pavement limits or in areas removed or replaced for Contractor's convenience. Maximum payment limits are shown on Drawings. When extent of pavement replacement is increased to full lane width or to nearest longitudinal joint, maximum payment limits are increased to same extent.~~

~~4. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

~~5. Refer to Paragraph 3.15, Unit Price Adjustment.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

A. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

B. ASTM A 185 - Standard Specifications for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

C. ASTM A 615 - Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.

D. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

E. ASTM C 33 - Standard Specifications for Concrete Aggregates.

F. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

G. ASTM C 40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

H. ASTM C 42 - Standard Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

I. ASTM C 78 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third Point Loading).

J. ASTM C 94 - Standard Specification for Ready-Mixed Concrete.

K. ASTM C 131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

L. ASTM C 136 - Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

M. ASTM C 138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

N. ASTM C 143 - Standard Test Method for Slump of Hydraulic Cement Concrete.

O. ASTM C 150 - Standard Specification for Portland Cement.

P. ASTM C 174 - Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores.

Q. ASTM C 231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

R. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.

S. ASTM C 494 - Standard Specification for Chemical Admixtures for Concrete.

T. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Portland Cement Concrete.

U. TxDOT Tex-203-F - Sand Equivalent Test.

V. TxDOT Tex-406-A - Material Finer than 75 Fm (No. 200) Sieve In Mineral Aggregates (Decantation Test for Cement Aggregates).

1.04 SUBMITTALS

~~A. Conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit proposed mix design and test data for each type and strength of concrete in Work. Include proportions and actual flexural strength obtained from design mixes at required test ages.

C. Submit for approval manufacturer's description and characteristics for mixing equipment, and for traveling form paver, when proposed for use.

D. Submit manufacturer's certificates giving properties of reinforcing steel. Include certificate of compliance with ASTM A 82. Provide specimens for testing when required by Engineer.

1.05 HANDLING AND STORAGE

A. Do not mix different classes of aggregate without written permission of Engineer.

B. Class of aggregate being used may be changed before or during Work with written permission of Engineer. Comply new class with specifications.

C. Reject segregated aggregate. Before using aggregate whose particles are separated by size, mix them uniformly to grading requirements.

D. Reject aggregates mixed with dirt, weeds, or foreign matter.

E. Do not dump or store aggregate in road bed.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Portland Cement:

1. Sample and test cement to verify compliance with Standards of ASTM C 150, Type I or Type III.

2. Bulk cement which meets referenced standards may be used when method of handling is approved by Engineer. When using bulk cement, provide satisfactory weighing devices.
3. Fly ash, which meets standards of ASTM C 618, may be used as mineral fill when method of handling is approved by Engineer.

B. Water: Conform to requirements for water in ASTM C 94.

C. Coarse Aggregate: Crushed stone, gravel, or combination thereof, which is clean, hard, durable, conforms to requirements of ASTM C 33, and has abrasion loss not more than 45 percent by weight when subjected to Los Angeles Abrasion Test (ASTM C 131).

1. Maximum percentage by weight of deleterious substances shall not exceed following values:

| Item | Percent by Weight of Total Sample Maximum |
|---|---|
| Clay lumps and friable particles | 3.0 |
| Material finer than 75-µm (No. 200) sieve: | |
| Concrete subject to abrasion | 3.0* |
| All Other concrete | 5.0* |
| Coal and lignite: | |
| Where surface appearance of concrete | 0.5 |
| All other concrete | 1.0 |

* In case of manufactured sand, when material finer than 75-µm (No. 200) sieve consists of dust of fracture, essentially free from clay or shale, these limits may be increased to 5 and 7 percent, respectively.

2. Conform coarse aggregate (size 12 inch to No. 4 sieve) to requirements of ASTM C 33. Use gradation within following limits when graded in accordance with ASTM C 136:

| Sieve Designation (Square Openings) | Percentage by Weight |
|---|---|
| Retained on 1:" sieve | 0 |
| Retained on 12"sieve | 0 to 5 |
| Retained on :" sieve | 30 to 65 |
| Retained on d" sieve | 70 to 90 |
| Retained on No. 4 sieve | 95 to 100 |
| Loss by Decantation Test *Method Tex-406-A | 1.0 maximum |

* In case of aggregates made primarily from crushing of stone, when material finer than 200 sieve is dust of fracture essentially free from clay or shale as established by Part III of TxDOT Tex-406-A, percent may be increased to 1.5.

D. Fine Aggregate: Sand, manufactured sand, or combination thereof, composed of clean, hard, durable, uncoated grains, free from loams or other injurious foreign matter. Conform fine aggregate for concrete to requirements of ASTM C 33. Use gradation within following limits when graded in accordance with ASTM C 136:

| Sieve Designation (Square Openings) | Percentage by Weight |
|---|---|
| Retained on 3/8" sieve | 0 |
| Retained on No. 4 sieve | 0 to 5 |
| Retained on No. 8 sieve | 0 to 20 |
| Retained on No. 16 sieve | 15 to 50 |
| Retained on No. 30 sieve | 35 to 75 |
| Retained on No. 50 sieve | 65 to 90 |
| Retained on No. 100 sieve | 90 to 100 |
| Retained on No. 200 sieve | 97 to 100 |

1. When subjected to color test for organic impurities (ASTM C 40), fine aggregate shall not show color darker than standard color. Fine aggregate shall be subjected to Sand Equivalent Test (Tex-203-F). Sand equivalent value shall not be less than 80, unless higher value is shown on Drawings.

E. Mineral Filler: Class C fly ash of acceptable quality and meeting requirements of ASTM C 618 may be used as mineral admixture in concrete mixture. When fly ash mineral filler is used, store and inspect in accordance with ASTM C 618. Do not use fly ash in amounts to exceed 30 percent by absolute volume of cementitious material in mix design. Cement content may be reduced when strength requirements can be met. Note: When fly ash is used, term "cement" is defined as cement plus fly ash.

F. Air Entraining Agent: Furnish air-entraining agent conforming to requirements of ASTM C 260.

G. Water Reducer: Water reducing admixture conforming to requirements of ASTM C 494 may be used when required to improve workability of concrete. Amount and type of admixture subject to approval by Engineer.

H. Reinforcing Steel:

1. Provide new billet steel manufactured by open hearth process and conforming to ASTM A 615, Grade 60. Store steel to protect it from mechanical injury and rust. At time of placement, steel shall be free from dirt, scale, rust, paint, oil, or other injurious materials.

2. Cold bend reinforcing steel to shapes shown. Once steel has been bent, it may not be rebent.

3. Provide wire fabric conforming to ASTM A 82. Use fabric in which longitudinal and transverse wires have been electrically welded at points of intersection. Welds shall have sufficient strength not to be broken during handling or placing. Conform welding and fabrication of fabric sheets to ASTM A 185.

~~I. Fibrous Reinforcing: Conform to requirements of Section 03240 - Fibrous Reinforcing~~.

2.02 EQUIPMENT

A. Conform Equipment to requirements of ASTM C 94.

2.03 MIXING

A. Flexural strength shall be as specified using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C78 (using simple beam with third-point loading).

Compressive strength shall be as specified using test specimens prepared in accordance with ASTM C 31 and tested in accordance with ASTM C 39. Determine and measure batch quantity of each ingredient, including water for batch designs and all concrete produced for Work. Mix shall conform to these specifications and other requirements indicated on Drawings.

B. Mix design to produce concrete, which will have flexural strength of 500 psi at 7 days and 600 psi at 28 days. Slump of concrete shall be at least 2 inches but no more than 4 inches, when tested in accordance with ASTM C 143.

1. Concrete pavement, including curb, curb and gutter, and saw-tooth curb, shall contain at least 52 sacks (94 pounds per sack) of cement per cubic yard, with not more than 6.5 gallons of water, net, per sack of cement (water-cement ratio maximum 0.57). Determine cement content in accordance with ASTM C 138. Addition of mineral filler may be used to improve workability or plasticity of concrete to limits specified.

2. Coarse dry aggregate shall not exceed 85 percent of loose volume of concrete.

3. Add air-entraining admixture to ensure uniform distribution of agent throughout batch. Base air content of freshly mixed air-entrained concrete upon trial mixes with materials to be used in Work, adjusted to produce concrete of required plasticity and workability. Percentage of air entrainment in mix shall be 42 percent plus or minus 12 percent. Determine air content by testing in accordance with ASTM C 231.

4. Use retardant when temperature exceeds 90 degrees F. Proportion as recommended by manufacturer. Use same brand as used for air-entraining agent. Add and batch material using same methods as used for air-entraining agent.

C. Use high early strength concrete pavement to limits shown on Drawings. Design to meet following:

1. Concrete Mix: Flexural strength greater than or equal to 500 psi at 72 hours.

2. Cement: Minimum of 7 sacks of cement per cubic yard of concrete.

3. Water-Cement Ratio: Less than or equal to 5 gallons per sack. Changes in water-cement ratio and mix design including increase in cement factor when necessary, will be made when 72-hour flexural strength does not meet minimum value of 500 psi.

4. Other requirements for proportioning, mixing, execution, testing, etc., shall be in accordance with this Section 02751 - Concrete Paving.

## PART 3 E X E C U T I O N

### 3.01 EXAMINATION

A. Verify compacted base is ready to support imposed loads and meets compaction requirements.

B. Verify lines and grades are correct.

### 3.02 PREPARATION

A. Properly prepare, shape and compact each section of sub grade before placing forms, reinforcing steel or concrete. After forms have been set to proper grade and alignment, use sub grade planer to shape sub grade to its final cross section. Check contour of sub grade with template.

B. Remove sub grade that will not support loaded form. Replace and compact sub grade to required density.

### 3.03 EQUIPMENT

A. Alternate equipment and methods, other than those required by this Section, may be used provided equal or better results will be obtained. Maintain equipment for preparing sub grade and for finishing and compacting concrete in good working order.

B. Sub grade Planer and Template:

1. Use sub grade planer with adjustable cutting blades to trim sub grade to exact section shown on Drawings. Select planer mounted on visible rollers, which ride on forms. Planer frame must have sufficient weight so that it will remain on form, and have strength and rigidity that, under tests made by changing support from wheels to center, planer will not develop deflection of more than c inch. Tractors used to pull planer shall not produce ruts or indentations in sub grade. When slip form method of paving is used, operate sub grade planer on prepared track grade or have it controlled by electronic sensor system operated from string line to establish horizontal alignment and elevation of subbase.

2. Provide template for checking contour of sub grade. Template shall be long enough to rest upon side forms and have strength and rigidity that, when supported at center, maximum deflection shall not exceed c inch. Fit template with accurately adjustable rods projecting downward at 1-foot intervals. Adjust these rods to gauge cross sections of slab bottom when template is resting on side forms.

C. Machine Finisher: Provide power-driven, transverse finishing machine designed and operated to strike off and consolidate concrete. Machine shall have two screeds accurately adjusted to crown of pavement and with frame equipped to ride on forms. Use finishing machine with rubber tires when it operates on concrete pavement.

D. Hand Finishing:

1. Provide mechanical strike and tamping template 2 feet longer than width of pavement to be finished. Shape template to pavement section.

2. Provide two bridges to ride on forms and span pavement for finishing expansion and dummy joints. Provide floats and necessary edging and finishing tools.

E. Burlap Drag for Finishing Slab: Furnish four plies of 10-ounce burlap material fastened to bridge to form continuous strip of burlap full width of pavement. Maintain contact 3-foot width of burlap material with pavement surface. Keep burlap drags clean and free of encrusted mortar.

F. Vibrators: Furnish mechanically operated, synchronized vibrators mounted on tamping bar which rides on forms and hand-manipulated mechanical vibrators. Furnish vibrators with frequency of vibration to provide maximum consolidation of concrete without segregation.

G. Traveling Form Paver: Approved traveling form paver may be used in lieu of construction methods employing forms, consolidating, finishing and floating equipment. Meet requirements of this specification for sub grade, pavement tolerances, pavement depth, alignments, consolidation, finishing and workmanship. When traveling form paver does not provide concrete paving that meets compaction, finish, and tolerance requirements of this Specification, immediately discontinue its use and use conventional methods.

1. Equip traveling paver with longitudinal transangular finishing float adjustable to crown and grade. Use float long enough to extend across pavement to side forms or edge of slab.

2. Ensure that continuous deposit of concrete can be made at paver to minimize starting and stopping. Use conventional means of paving locations inaccessible to traveling paver, or having horizontal or vertical curvature that traveling paver cannot negotiate.

3. Where Drawings require tie bars for adjacent paving, securely tie and support bars to

prevent displacement. Tie bars may be installed with approved mechanical bar inserter mounted on traveling-form paver. Replace pavement in which tie bars assume final position other than that shown on Drawings.

3.04 FORMS

A. Side Forms: Use metal forms of approved shape and section. Preferred depth of form equal to required edge thickness of pavement. Forms with depths greater or less than required edge thickness of pavement will be permitted, provided difference between form depth and edge thickness when not greater than 1 inch, and further provided that forms of depth less than pavement edge are brought to required edge thickness by securely attaching wood or metal strips to bottom of form, or by grouting under form. Bottom flange of form shall be same size as thickness of pavement. Aluminum forms are not allowed. Forms shall be approved by Engineer. Length of form sections shall be not less than 10 feet and each section shall provide for staking in position with not less than 3 pins. Flexible or curved forms of wood or metal of proper radius shall be used for curves of 200-foot radius or less. Forms shall have ample strength and shall be provided with adequate devices for secure setting so that when in-place they will withstand, without visible springing or settlement, impact and vibration of finishing machine. In no case shall base width be less than 8 inches for form 8 inches or more in height. Forms shall be free from warp, bends or kinks and shall be sufficiently true to provide straight edge on concrete. Top of each form section, when tested with straight edge, shall conform to requirements specified for surface of completed pavement. Provide sufficient forms for satisfactory placement of concrete. For short radius curves, forms less than 10 feet in length or curved forms may be used. For curb returns at street intersections and driveways, wood forms of good grade and quality may be used.

B. Form Setting:

1. Rest forms directly on sub grade. Do not shim with pebbles or dirt. Accurately set forms to required grade and alignment and, during entire operation of placing, compacting and finishing of concrete, do not deviate from this grade and alignment more than c inch in 10 feet of length. Do not remove forms for at least 8 hours after completion of finishing operations. Provide supply of forms that will be adequate for orderly and continuous placing of concrete. Set forms and check grade for at least 300 feet ahead of mixer or as approved by Engineer.

2. Adjacent slabs may be used instead of forms, provided that concrete is well protected from possible damage by finishing equipment. Do not use adjacent slabs for forms until concrete has aged at least 7 days.

3.05 REINFORCING STEEL AND JOINT ASSEMBLIES

A. Place reinforcing steel and joint assemblies and position securely as indicated on Drawings. Wire reinforcing bars securely together at intersections and splices. Bars and coatings shall be free of rust, dirt or other foreign matter when concrete is placed. Secure reinforcing steel to chairs.

B. Position pavement joint assemblies at required locations and elevations, and rigidly secure in position. Install dowel bars in joint assemblies, each parallel to pavement surface and to centerline of pavement, as shown.

C. Cut header boards, joint filler, and other material used for forming joints to receive each dowel bar.

D. Secure in required position to prevent displacement during placing and finishing of concrete.

E. Drill dowels into existing pavement, secure with epoxy, and provide paving headers as required to provide rigid pavement sections.

F. Use sufficient number of chairs for steel reinforcement bars to maintain position of bars within allowable tolerances. Place reinforcement as shown on Drawings. In plane of steel parallel to nearest surface of concrete, bars shall not vary from plan placement by more than 1/12 of spacing between bars. In plane of steel perpendicular to nearest surface of concrete, bars shall not vary from plan placement by more than 3 inch.

3.06 FIBROUS REINFORCING

A. Do not use fibrous reinforcing to replace structural, load-bearing, or moment-reinforcing steel.

~~B. Mix and place in accordance with requirements of Section 03240.~~

3.07 PLACEMENT

A. Place concrete when air temperature taken in shade and away from artificial heat is above 35 degrees F and rising. Do not place concrete when temperature is below 40 degrees F and falling.

B. Place concrete within 90 minutes after initial water had been added. Remove and dispose of concrete not placed within this period.

C. Concrete slump during placement shall be 1 to 4 inches, except when using traveling-form paver, slump shall be maximum of 2 inches.

D. Deposit concrete continuously in successive batches. Distribute concrete in manner that will require as little rehandling as possible. Where hand spreading is necessary, distribute concrete with shovels or by other approved methods. Use only concrete rakes in handling concrete. At placement interruption of more than 30 minutes, place transverse construction joint at stopping point. Remove and replace sections less than 10 feet long.

E. Take special care in placing and spading concrete against forms and at longitudinal and transverse joints to prevent honeycombing. Voids in edge of finished pavement will be cause for rejection.

3.08 COMPACTION

A. Consolidate concrete using mechanical vibrators as specified herein. Extend vibratory unit across pavement, not quite touching side forms. Space individual vibrators at close enough intervals to vibrate and consolidate entire width of pavement uniformly. Mount mechanical vibrators to avoid contact with forms, reinforcement, transverse or longitudinal joints.

B. Furnish enough hand-manipulated mechanical vibrators for proper consolidation of concrete along forms, at joints and in areas not covered by mechanically controlled vibrators.

3.09 FINISHING

A. Finish concrete pavement with power-driven transverse finishing machines or by hand finishing methods.

1. Use transverse finishing machine to make at least two trips over each area. Make last trip continuous run of not less than 40 feet. After transverse screeding, use hand-operated longitudinal float to test and level surface to required grade.

2. Hand finish with mechanical strike and tamping template in same width as pavement to be finished. Shape template to pavement section shown on Drawings. Move strike template forward in direction of placement, maintaining slight excess of material in front of cutting edge. Make minimum of two trips over each area. Screed pavement surface to required section. Work screed with combined transverse and longitudinal motion in

direction work is progressing. Maintain screed in contact with forms. Use longitudinal float to level surface.

B. On narrow strips and transitions, finish concrete pavement by hand. Thoroughly work concrete around reinforcement and embedded fixtures. Strike off concrete with strike-off screed. Move strike-off screed forward with combined transverse and longitudinal motion in direction work is progressing, maintaining screed in contact with forms, and maintaining slight excess of materials in front of cutting edge. Tamp concrete with tamping template. Use longitudinal float to level surface.

C. After completion of straightedge operation, make first pass of burlap drag as soon as construction operations permit and before water sheen has disappeared from surface. Follow with as many passes as required to produce desired texture depth. Permit no unnecessary delays between passes. Keep drag wet, clean and free from encrusted mortar during use.

3.10 JOINTS AND JOINT SEALING

A. Conform to requirements of Section 02752 - Concrete Pavement Joints.

3.11 CONCRETE CURING

A. Conform to requirements of Section 02753 - Concrete Pavement Curing.

3.12 TOLERANCES

A. Test entire surface before initial set and correct irregularities or undulations. Bring surface within requirements of following test and then finish. Place 10-foot straightedge parallel to center of roadway to bridge depressions and touch high spots. Do not permit ordinates measured from face of straight edge to surface of pavement to exceed 1/16 inch per foot from nearest point of contact. Maximum ordinate with 10-foot straightedge shall not exceed c inch. Grind spots in excess of required tolerances to meet surface test requirements. Restore texture by grooving concrete to meet surface finishing specifications.

3.13 FIELD QUALITY CONTROL

~~A. Perform testing under provisions of Section 01454 - Testing Laboratory Services.~~

B. Compressive Strength Test Specimens: Make four test specimens for compressive strength test in accordance with ASTM C 31 for each 150 cubic yards or less of pavement that is placed in one day. Test two specimens at 7 days. Test remaining two specimens at 28 days. Test specimens in accordance with ASTM C 39. Minimum compressive strength shall be 3000 pounds per square inch at 7 days and 3500 pounds per square inch at 28 days.

C. When compressive test indicates failure, make yield test in accordance with ASTM C 138 for cement content per cubic yard of concrete. When cement content is found to be less than that specified per cubic yard, increase batch weights until amount of cement per cubic yard of concrete conforms to requirements.

D. Minimum of one 4-inch core will be taken at random locations per 375 feet per 12 feet lane or 500 square yards of pavement to measure in-place depth. Measure depth in accordance with ASTM C 174. Each core may be tested for 28-day compressive strength according to methods of ASTM C 42. 28- day compressive strength of each core tested shall be minimum of 3000 pounds per square inch.

E. Request, at option, three additional cores in vicinity of cores indicating nonconforming in-place depths at no cost to City. In-place depth at these locations shall be average depth of four cores.

F. Fill cores and density test sections with new concrete paving or non-shrink grout.

3.14 NONCONFORMING PAVEMENT

A. Remove and replace areas of pavement found deficient in thickness by more than 10 percent, or that fail compressive strength tests, with concrete of thickness shown on Drawings.

B. When measurement of any core is less than specified thickness by more than 10 percent, actual thickness of pavement in this area will be determined by taking additional cores at 10-foot intervals parallel to centerline in each direction from deficient core until, in each direction, core is taken which is not deficient by more than 10 percent. Exploratory cores for deficient thickness will not be used in averages for adjusted unit price. Exploratory cores are to be used only to determine length of pavement in unit that is to be removed and replaced. Replace nonconforming pavement sections at no additional cost to City.

3.15 UNIT PRICE ADJUSTMENT

A. Unit price adjustments shall be made for in-place depth determined by cores as follows:

1. Adjusted Unit Price shall be ratio of average thickness as determined by cores to thickness bid upon, times unit price.

2. Apply adjustment to lower limit of 95 percent and upper limit of 100 percent of unit price.

3. Average depth below 95 percent but greater than 90 percent may be accepted by Engineer at adjusted Unit Price of :

Unit Price Bid - [2 x (1-ratio) x Unit Price Bid]

4. Average depth below 90 percent will be rejected by Engineer.

3.16 PAVEMENT MARKINGS

A. Restore pavement markings to match those existing in accordance with standard specifications and details and Engineer's requirements.

3.17 PROTECTION

A. Barricade pavement section to prevent use until concrete has attained minimum design strength. Cure barricade pavement section for minimum 72 hours before use. Do not open pavement to traffic until concrete is at least 10 days old. Pavement may be open to traffic earlier provided Contractor pays for testing and additional beam once 7 day specified flexural strength is obtained. Pavement may be opened when high early strength concrete is used meeting specified 72-hour strength.

B. High early strength concrete may be used to provide access at driveways, street intersections, esplanades and other locations approved by Engineer.

C. On those sections of pavement to be opened to traffic, seal joints, clean pavement, and place earth against pavement edges before permitting use by traffic. Opening of pavement to traffic shall not relieve responsibility for Work.

D. Maintain concrete paving in good condition until completion of Work.

E. Repair defects by replacing concrete to full depth.

END OF SECTION

Section 02752

CONCRETE PAVEMENT JOINTS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Joints for concrete paving; concrete sidewalks; concrete driveways, curbs, and curb and gutters.

B. Saw-cutting existing concrete or asphalt pavements for new joints.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for saw-cutting existing concrete or asphalt pavement for new joints is on linear foot basis. Saw-cutting existing standard concrete curb will be measured as 1-1/2 linear feet and existing standard concrete curb and gutter will be measured as 3 linear feet.~~

~~2. No separate payment will be made for expansion joints, formed or sawed street pavement contraction joints and longitudinal weakened plane joints. Include payment in unit price for Concrete Paving.~~

~~3. No separate payment will be made for joints for Curb, Curb and Gutter, Saw-tooth Curb, Concrete Sidewalks, and Concrete Driveways. Include payment in unit price for Curb and Gutter, Concrete Sidewalks, and Concrete Driveways.~~

~~4. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

B. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).

C. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

D. ASTM D 3405 - Standard Specification for Joint Sealants, Hot-Poured, for Concrete and Asphalt Pavements.

1.04 SUBMITTALS

~~A. Submit product data and samples in accordance with requirements of Section 01330 - Submittal Procedures.~~

B. Submit product data for joint sealing compound and proposed sealing equipment for approval.

C. Submit samples of dowel cup, metal supports, and deformed metal strip for approval.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Board Expansion Joint Material: Filler board of selected stock. Use wood of density and type as follows:

1. Clear, all-heart cypress weighing no more than 40 pounds per cubic foot, after being oven dried to constant weight.

2. Clear, all-heart redwood weighing no more than 30 pounds per cubic foot, after being oven dried to constant weight.

B. Preformed Expansion Joint Material: Bituminous fiber and bituminous mastic composition material conforming to ASTM D 994 and ASTM D 1751.

C. Joint Sealing Compound: Hot-poured rubber-asphalt compound conforming to ASTM D 3405.

D. Load Transmission Devices:

1. Smooth, steel dowel bars conforming to ASTM A 615, Grade 60. When indicated on Drawings, encase one end of dowel bar in approved cap having inside diameter 1/16 inch greater than diameter of dowel bar.

2. Deformed steel tie bars conforming to ASTM A 615, Grade 60.

E. Metal Supports for Reinforcing Steel and Joint Assembly: Employ metal supports of approved shape and size that will secure reinforcing steel and joint assembly in correct position during placing and finishing of concrete.

PART 3 E X E C U T I O N

3.01 PLACEMENT

A. When new work is adjacent to existing concrete, place joints at same location as existing joints in adjacent pavement.

B. If the limit of removal of existing concrete or asphaltic pavement does not fall on existing joint, saw cut existing pavement minimum of 2 inches deep to provide straight, smooth joint surface without chipping, spalling or cracks.

3.02 CONSTRUCTION JOINTS

A. Place transverse construction joint wherever concrete placement must be stopped for more than 30 minutes. Place longitudinal construction joints at interior edges of pavement lanes using No. 6 deformed tie bars, 30 inches long and spaced 18 inches on centers.

3.03 EXPANSION JOINTS

A. Place 3/4-inch expansion joints at radius points of curb returns for cross street intersections, or as located in adjacent pavement but no further than 80 feet apart. Use no boards shorter than 6 feet. When pavement is 24 feet or narrower, use not more than 2 lengths of board. Secure pieces to form straight joint. Shape board filler accurately to cross section of concrete slab. Use load transmission

devices of type and size shown on Drawings unless otherwise specified or shown as “No Load Transfer Device”. Seal with joint sealing compound.

3.04 CONTRACTION JOINTS

A. Place contraction joints at same locations as in adjacent pavement or at spaces indicated on Drawings. Place smoothed, painted and oiled dowels accurately and normal to joint. Seal groove with joint sealing compound.

3.05 LONGITUDINAL WEAKENED PLANE JOINTS

A. Place longitudinal weakened plane joints at spaces indicated on Drawings. Seal groove with joint sealing compound.

3.06 SAWED JOINTS

A. Use sawed joints as an alternate to contraction and weakened plane joints. Circular cutter shall be capable of cutting straight line groove minimum of 1/2 inch wide. Depth shall be one quarter of pavement thickness plus 1/2 inch. Commence sawing as soon as concrete has hardened sufficiently to permit cutting without chipping, spalling or tearing and prior to initiation of cracks. Once sawing has commenced, it shall be continued until completed. Make saw cut with one pass. Complete sawing within 24 hours of concrete placement. Saw joints at required spacing consecutively in sequence of concrete placement.

B. Concrete Saw: Provide sawing equipment adequate in power to complete sawing to required dimensions and within required time. Provide at least one standby saw in good working order. Maintain an ample supply of saw blades at work site at all times during sawing operations. Sawing equipment shall be on job at all times during concrete placement.

3.07 JOINTS FOR CURB, CURB AND GUTTER

A. Place 3/4-inch preformed expansion joints through curb and gutters at locations of expansion and contraction joints in pavement; at end of radius returns at street intersections and driveways; and at curb inlets. Maximum spacing shall be 120-foot centers.

3.08 JOINTS FOR CONCRETE SIDEWALKS

A. Provide 3/4-inch expansion joints conforming to ASTM A 1751 along and across sidewalk at back of curbs, at intersections with driveways, steps, and walls; and across walk at intervals not to exceed 36 feet. Provide expansion joint material conforming to ASTM D 994 for small radius curves and around fire hydrants and utility poles. Extend the expansion joint material full depth of the slab.

3.09 JOINTS FOR CONCRETE DRIVEWAYS

A. Provide 3/4-inch expansion joints conforming to ASTM D 1751 across driveway in line with street face of sidewalks, at existing concrete driveways, and along intersections with sidewalks and other structures. Extend expansion joint material full depth of slab.

3.10 JOINT SEALING

A. Seal joints only when surface and joints are dry, ambient temperature is above 50 degrees F and less than 85 degrees F, and weather is not foggy or rainy.

B. Joint sealing equipment shall be in like new working condition throughout the joint sealing operation, and be approved by Resident Project Representative. Use concrete grooving machine or power-

operated wire brush and other equipment such as plow, brooms, brushes, blowers or hydro or abrasive cleaning as required to produce satisfactory joints.

C. Clean joints of loose scale, dirt, dust and curing compound. The term joint includes wide joint spaces, expansion joints, dummy groove joints or cracks, either preformed or natural. Remove loose material from concrete surfaces adjacent to joints.

D. Fill joints neatly with joint sealer to depth shown. Pour sufficient joint sealer into joints so that, upon completion, surface of sealer within joint will be 1/4 inch above level of adjacent surface or at elevation as directed.

3.11 PROTECTION

A. Maintain joints in good condition until completion of Work.

B. Replace damaged joints material with new material as required by this Section.

END OF SECTION

Section 02753

CONCRETE PAVEMENT CURING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Curing of Portland cement concrete paving.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. No separate payment will be made for concrete curing under this Section. Include payment in unit price for Concrete Paving, Concrete Sidewalks, Curbs, and Curb and Gutters.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM C 171 - Standard Specifications for Sheet Materials for Curing Concrete.

B. ASTM C 309 - Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete.

1.04 SUBMITTALS

~~A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit manufacturer's product data for cover materials and liquid membrane-forming compounds.

PART 2 P R O D U C T S

2.01 COVER MATERIALS FOR CURING

A. Curing materials shall conform to one of the following:

1. Polyethylene Film: Opaque pigmented white film conforming to requirements of ASTM C 171.

2. Waterproofed Paper: Paper conforming to requirements of ASTM C 171.

3. Cotton Mats: Single layer of cotton filler completely enclosed in cover of cotton cloth. Mats shall contain not less than 3/4 of a pound of uniformly distributed cotton filler per square yard of mat. Cotton cloth used for covering materials shall weigh not less than 6 ounces per square yard. Mats shall be stitched so that mat will contact surface of pavement at all points when saturated with water.

2.02 LIQUID MEMBRANE-FORMING COMPOUNDS

A. Liquid membrane-forming compounds shall conform to ASTM C 309. Membrane shall restrict loss of water to not more than 0.55 kg/$m^2$ of surface in 72 hours.

PART 3 E X E C U T I O N

3.01 CURING REQUIREMENT

A. Concrete pavement shall be cured by protecting it against loss of moisture for period of not less than 72 hours immediately upon completion of finishing operations. Do not use membrane curing for concrete pavement to be overlaid by asphaltic concrete.

B. Failure to provide sufficient cover material shall be cause for immediate suspension of concreting operations.

3.02 POLYETHYLENE FILM CURING

A. Immediately after finishing surface, and after concrete has taken its initial set, apply water in the form of a fine spray. Cover surface with polyethylene film so film will remain in direct contact with surface during specified curing period.

B. Cover entire surface and both edges of pavement slab. Joints in film sheets shall overlap minimum of 12 inches. Immediately repair tears or holes occurring during curing period by placing acceptable moisture-proof patches or by replacing.

3.03 WATERPROOFED PAPER CURING

A. Immediately after finishing surface, and after concrete has taken its initial set, apply water in form of fine spray. Cover surface with waterproofed paper so paper will remain in direct contact with surface during specified curing period.

B. Prepare waterproofed paper to form blankets of sufficient width to cover entire surface and both edges of pavement slab, and not be more than 60 feet in length. Joints in blankets caused by joining paper sheets shall lap not less than 5 inches and shall be securely sealed with asphalt cement having melting point of approximately 180 degrees F. Place blankets to secure an overlap of at least 12 inches. Tears or holes appearing in paper during curing period shall be immediately repaired by cementing patches over defects.

3.04 COTTON MAT CURING

A. Immediately after finishing surface, and after concrete has taken its initial set, completely cover surface with cotton mats, thoroughly saturated before application, in such manner that they will contact surface of pavement equally at all points.

B. Mats shall remain on pavement for specified curing period. Keep mats saturated so that, when lightly compressed, water will drip freely from them. Keep banked earth or cotton mat covering edges saturated.

3.05 LIQUID MEMBRANE-FORMING COMPOUNDS

A. Immediately after finishing surface, and after concrete has taken its initial set, apply liquid membrane-forming compound in accordance with manufacturer's instructions.

END OF SECTION

Section 02771

CURB, CURB AND GUTTER, AND HEADERS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Reinforced concrete curb, reinforced monolithic concrete curb and gutter, and mountable curb.

B. Paving headers and railroad headers poured monolithically with concrete base or pavement.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for curbs and for curbs and gutter is on linear foot basis measured along face of curb.~~

~~2. Payment for headers is on linear foot basis measured between lips of gutters adjacent to concrete base and measured between backs of curbs adjacent to streets.~~

~~3. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 SUBMITTALS

~~A. Submittals shall conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit details of proposed formwork for approval.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete of Section 02751 - Concrete Pavement.

B. Reinforcing Steel: Conform to material requirements for welded wire fabric of Section 02751 - Concrete Pavement.

C. Grout: Nonmetallic, nonshrink grout containing no chloride producing agents conforming to the following requirements.

1. Compressive strength
   a. at 7 days: 3500 psi
   b. at 28 days: 8000 psi

2. Initial set time: 45 minutes

3. Final set time: 1.5 hours

D. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Expansion Joint Filler: Conform to material requirements for expansion joint filler of Section 02752 - Concrete Pavement Joints.

F. Mortar: Mortar finish composed of one part Portland cement and 1-1/2 parts of fine aggregate. Use only when approved by Resident Project Representative.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Prepare subgrade in accordance with applicable portions of sections on excavation and fill, embankment, and subgrade and roadbed.

3.02 PLACEMENT

A. Guideline: Set to follow top line of curb. Attach indicator to provide constant comparison between top of curb and guideline. Ensure flow lines for monolithic curb and gutters conform to slopes indicated on Drawings.

B. Forms: Brace to maintain position during pour. Use metal templates cut to section shown on Drawings.

C. Reinforcement: Secure in position so that steel will remain in place throughout placement. Reinforcing steel shall remain at approximate center of base or pavement as indicated on Drawings.

D. Joints: Place in accordance with Section 02752 - Concrete Pavement Joints. Place dummy groove joints at 6-foot centers at right angles to curb lines. Cut dummy grooves 1/4 inch deep using an approved edging tool.

E. Place concrete in forms to required depth. Consolidate thoroughly. Do not permit rock pockets in form. Entirely cover top surfaces with mortar.

3.03 MANUAL FINISHING

A. After concrete is in place, remove front curb forms. Form exposed portions of curb, and of curb and gutter, using mule which conforms to curb shape, as shown on Drawings.

B. Thin coat of mortar may be worked into exposed face of curb using mule and two-handled wooden darby at least 3 feet long.

C. Before applying final finish move 10-foot straightedge across gutter and up curb to back form of curb. Repeat until curb and gutter are true to grade and section. Lap straightedge every 5 feet.

D. Steel trowel finish surfaces to smooth, even finish. Make face of finished curb true and straight.

E. Edge outer edge of gutter with 1/4-inch edger. Finish edges with tool having 1/4-inch radius.

F. Finish visible surfaces and edges of finished curb and gutter free from blemishes, form marks and tool marks. Finished curb or curb and gutter shall have uniform color, shape and appearance.

3.04 MECHANICAL FINISHING

A. Mechanical curb forming and finishing machines may be used instead of, or in conjunction with, previously described methods. Use of mechanical methods shall provide specified curb design and finish.

3.05 CURING

A. Immediately after finishing operations, cure exposed surfaces of curbs and gutters in accordance with Section 02753 - Concrete Pavement Curing.

3.06 TOLERANCES

A. Top surfaces of curb and gutter shall have uniform width and shall be free from humps, sags or other irregularities. Surfaces of curb top, curb face and gutter shall not vary more than 1/8 inch from edge of straightedge laid along them.

3.07 PROTECTION

A. Maintain curbs and gutters in good condition until completion of the Work.

B. Replace damaged curbs and gutters to comply with this Section.

END OF SECTION

Section 02775

CONCRETE SIDEWALKS

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Reinforced concrete sidewalks.

B. Wheelchair Ramps.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for concrete sidewalks is on square foot basis.~~

~~2. Payment for wheelchair ramps of each type specified is on a per ramp basis. The removal of existing sidewalk and curb or curb and gutter is included in the cost of the ramp.~~

~~3. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If the Contract is a Stipulated Price Contract, payment for work in this Section is included in the total Stipulated Price.

1.03 REFERENCES

A. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.

B. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

C. ASTM C 42 - Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

D. ASTM C 138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.

E. ASTM C 143 - Test Method for Slump of Hydraulic Cement Concrete.

F. ASTM C 172 - Practice for Sampling Freshly Mixed Concrete.

G. ASTM D 698 - Standard Test Methods for Moisture - Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-Pound Rammer and 12-inch Drop.

1.04 SUBMITTALS

A. Submittals shall conform to requirements of Submittal Procedures Section of this Project Manual.

B. Submit certified testing results and certificates of compliance.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Concrete: Conform to material and proportion requirements for concrete paving.

B. Reinforcing Steel: Conform to material requirements for welded wire fabric of Section 02751 - Concrete Paving.

C. Preformed Expansion Joint Material: Conform to material requirements for preformed expansion joint material of Section 02752 - Concrete Pavement Joints.

D. Expansion Joint Filler: Conform to material requirements for expansion joint material of Section 02752 - Concrete Pavement Joints.

E. Forms: Use straight, unwarped wood or metal forms with nominal depth equal to or greater than the proposed sidewalk thickness. The use of 2" by 4" lumber as forms will not be allowed.

F. Sand Bed: Conform to material requirements for bank run sand of Section 02320 - Utility Backfill Materials.

G. Sodding: Conform to material requirements for sodding of Section 02922 - Sodding.

## PART 3 E X E C U T I O N

### 3.01 REPLACEMENT

A. Replace sidewalks which are removed or damaged during construction with sidewalk of thickness and width equivalent to those removed or damaged.

B. Provide replaced and new sidewalks with wheelchair ramps if sidewalk intersects curb at street or driveway.

### 3.02 PREPARATION

A. Identify and protect utilities which are to remain.

B. Protect living trees, other plant growth, and features designated to remain.

C. Conduct clearing and grubbing operations in accordance with Section 02233 - Clearing and Grubbing.

D. Excavate subgrade to the line, grade, and cross section shown on Drawings. Remove soft spots and pumping soils and replace with select fill material in accordance with the applicable portions of Item 02317 - Excavation and Backfill for Utilities.

E. Immediately after subgrade is prepared, cover with compacted sand bed to depth as shown on Drawings. Pour concrete when sand is moist but not saturated.

### 3.03 PLACEMENT

A. Setting Forms: Securely stake forms to line and grade. Maintain position during concrete placement.

B. Reinforcement: Install 6x6, W2.9 x W2.9 welded wire fabric or No. 3 reinforcing steel bars on 18-inch centers longitudinally and transversely. Lay longitudinal bars in walk continuously, except through expansion joints. Support reinforcement in manner to maintain reinforcement in center of slab vertically during placement.

C. Expansion Joints: Install expansion joints in accordance with Section 02752 - Concrete Pavement Joints.

~~D. Colored Concrete: Apply coloring agent in accordance with Section 02761 - Colored Concrete for Medians and Sidewalks if called for on the Drawings.~~

E. Place concrete in forms to specified depth and consolidate with immersion type vibrator or manual tamping device. Manual tamping devices shall only be used with approval of the Resident Project Representative. Bring mortar to surface.

F. Strike off to smooth finish with wood strike board. Finish smoothly with wood hand float. Brush across sidewalk lightly with fine-haired brush.

G. Unless otherwise indicated on Drawings, mark off joints 1/8 inch deep, at spacing equal to width of walk. Use joint tool equal in width to edging tool.

H. Finish edges with tool having 1/4-inch radius.

I. After concrete has set sufficiently, refill space along sides of sidewalk to top of walk with suitable material. Tamp until firm and solid. Dispose of excess material in accordance with Waste Material Disposal. Repair driveways and parking lots damaged by sidewalk excavation.

3.04 CURING

A. Conform to requirements of concrete pavement curing.

3.05 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of the testing laboratory services.

B. Compressive Strength Test Specimens: Four test specimens for compressive strength test will be made in accordance with ASTM C 31 for each 30 cubic yards or less of sidewalk that is placed in one day. Two specimens will be tested at 7 days. The remaining two specimens will be tested at 28 days. Specimens will be tested in accordance with ASTM C 39.

C. Yield test for cement content per cubic yard of concrete will be made in accordance with ASTM C 138. If such cement content is found to be less than that specified per cubic yard, reduce batch weights until amount of cement per cubic yard of concrete conforms to requirements.

D. If the Contractor places concrete without notifying the laboratory, the Owner will have the concrete tested by means of a core test as specified in ASTM C 42. If the concrete does not meet the specification, the cost of the test will be deducted from payment due the Contractor.

E. Sampling of fresh concrete shall be in accordance with ASTM C 172.

F. Take slump tests when cylinders are made and when concrete slump appears excessive.

G. If any 28-day laboratory test indicates that concrete of low strength has been placed, the concrete in question shall be tested by taking cores as directed by the Resident Project Representative. At least three representative cores shall be taken and tested as specified in ASTM C 42 and the cost deducted from payment due the Contractor.

3.06 NONCONFORMING PAVEMENT

A. Remove and replace areas of sidewalk that fail compressive strength tests, with concrete of thickness shown on Drawings.

B. Nonconforming sidewalk sections shall be replaced at no additional cost to the Owner.

3.07 PROTECTION

A. Maintain sidewalks in good condition until completion of the Work.

B. Replace damaged sidewalks in accordance with Paragraph 3.01, Replacement.

END OF SECTION

SECTION 02920

TOPSOILING AND FINISHED GRADING

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

A. Furnish all labor, materials, tools, equipment, and services for all topsoiling and finished grading, as indicated, in accord with provisions of contract documents.

B. Completely coordinate with work of all other trades.

C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.

### 1.2 LOCATION OF WORK

A. All areas within limits of construction, areas of surplus material disposal, and all areas which are disturbed in the course of the work.

### 1.3 RELATED SECTIONS

A. Section 02200 - Earthwork and Site Grading

B. Section 02233 - Clearing and Grubbing

### 1.4 QUALITY ASSURANCE

A. Finish Grading Tolerance:
   1. 0.1 ft. (30 mm) plus/minus from required elevations.

### 1.5 JOB CONDITIONS:

A. Verify amount of topsoil stockpiled and determine amount of additional topsoil, if necessary to complete work.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Topsoil:
   1. Original fertile, friable surface soil typical of the area, capable of supporting native plant growth, reasonably free of subsoil, clay, weeds, roots, and stones larger than 1 inch.
      a. Use existing topsoil stockpiled under Section 02100.
      b. If amount of topsoil stockpiled is less than amount necessary for the work, furnish all additional topsoil required at no additional cost to the Owner.
      c. Contractor may import topsoil to the site with prior review and approval by the Owner's Representative.

B. Surplus Material:
   1. Legally dispose of surplus material offsite.

## PART 3 - EXECUTION

### 3.1 ROUGH GRADE REVIEW

A. Rough grading shall be inspected and approved by owner's representative before site work proceeds.

### 3.2 PREPARATION

A. Correct, adjust and/or repair rough graded areas.
   1. Cut off mounds and ridges.
   2. Fill gullies and depressions.
   3. Perform other necessary repairs.
   4. Bring all sub-grades to specified contours, even and properly compacted.

B. Remove all stones and debris over 2 in. (50 mm) in any dimension.

### 3.3 PLACING TOPSOIL

A. Do not place topsoil when subgrade is either wet or frozen enough to cause clodding.

B. Spread topsoil to minimum compacted depth of 6 in. (100 mm) for all disturbed earth areas.

C. Make finished surface free of stones, sticks, dirt clods or other material 1 in. (25 mm) or more in any dimension.

D. Drag finish with harrow (or hand rake) to insure smooth finish to the lines and grades indicated.

E. Restore areas occupied by stockpiles to condition of rest of finished work.

### 3.4 ACCEPTANCE

A. Upon completion of topsoiling, obtain owner's representative acceptance of grade and surface.

**END OF SECTION**

Section 02921

HYDRO MULCH SEEDING

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Seeding, fertilizing, mulching, and maintenance of areas indicated on Drawings.

1.02 MEASUREMENT AND PAYMENT

~~A. Unit Prices.~~

~~1. Payment for hydro mulch seeding is on an acre basis.~~

~~2. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 SUBMITTALS

~~A. Conform to requirements of Section 01330 - Submittal Procedures.~~

B. Submit certification from supplier that each type of seed conforms to these specifications and requirements of Texas Seed Law. Certification shall accompany seed delivery.

C. Submit certificate stating that fertilizer complies with these specifications and requirements of Texas Fertilizer Law.

PART 2 P R O D U C T S

2.01 MATERIALS

A. Topsoil: Conform to material requirements of Section 02920 – Topsoil and Finished Grading.

B. Seed: Conform to U.S. Department of Agriculture rules and regulations of Federal Seed Act and Texas Seed Law. Seed shall be certified 90 percent pure and furnish 80 percent germination and meet following requirements:

1. Rye: Fresh, clean, Italian rye grass seed (lollium multi-florum), mixed in labeled proportions. As tested, minimum percentages of impurities and germination must be labeled. Deliver in original unopened containers.

2. Bermuda: Extra-fancy, treated, lawn type common bermuda (Cynodon dactylon). Deliver in original, unopened container showing weight, analysis, name of vendor, and germination test results.

3. Wet, moldy, or otherwise damaged seed will not be accepted.

4. Seed requirements, application rates, and planting dates are:

| TYPE | APPLICATION RATE POUNDS/A | PLANTING DATE |
|---|---|---|
| Hulled Common Bermuda Grass 98/88<br>Unhulled Common Bermuda Grass 98/88 | 40<br>40 | Jan 1 to Mar 31 |
| Hulled Common Bermuda Grass 98/88 | 40 | Apr 1 to Sep 30 |
| Hulled Common Bermuda Grass 98/88<br>Unhulled Common Bermuda Grass 98/88<br>Annual Rye Grass (Gulf) | 40<br>40<br>30 | Oct 1 to Dec 31 |

C. Fertilizer: Dry and free flowing, inorganic, water-soluble commercial fertilizer, which is uniform in composition. Deliver in unopened containers, which bear manufacturers guaranteed analysis. Caked, damaged, or otherwise unsuitable fertilizer will not be accepted. Fertilizer shall contain minimum percentages of following elements:

1. Nitrogen: 10 Percent

2. Phosphoric Acid: 20 Percent

3. Potash: 10 Percent

D. Mulch:

1. Virgin wood cellulose fibers from whole wood chips having minimum of 20 percent fibers 0.42 inches in length and 0.01 inches in diameter.

2. Cellulose fibers manufactured from recycled newspaper and meeting same fiber content and size as for cellulose fibers from wood chips.

3. Dye mulch green for coverage verification purposes.

E. Soil Stabilizer: "Terra Tack 1" or approved equal.

F. Weed control agent: Pre-emergent herbicide for grass areas, such as "Benefin," or approved equal.

## PART 3 E X E C U T I O N

### 3.01 PREPARATION

A. Place and compact topsoil in accordance with requirements of Section 02920 – Topsoil and Finished Grading.

B. Dispose of Objectionable and Waste Materials in accordance with Section 02233 – Clearing and Grubbing.

### 3.02 APPLICATION

A. Seed: Apply uniformly at rates given in Paragraph 2.01 B for type of seed and planting date.

B. Fertilizer: Apply uniformly at rate of 500 pounds per acre.

C. Mulch: Apply uniformly at rate of 50 pounds per 1000 square feet.

D. Soil Stabilizer: Apply uniformly at rate of 40 pounds per acre.

E. Weed Control Agent: Apply at manufacturer's recommended rate prior to hydro mulching.

F. Sod: Lay single row of sod along perimeter where topsoil and pavement intersect.

G. Suspend operations under conditions of drought, excessive moisture, high winds, or extreme or prolonged cold. Obtain Engineer approval before resuming operations.

3.03 MAINTENANCE

A. Maintain grassed areas minimum of 90 days, or as required to establish an acceptable lawn. For areas seeded in fall, continue maintenance following spring until acceptable lawn is established.

B. Maintain grassed areas by watering, fertilizing, weeding, and trimming.

C. Repair areas damaged by erosion by regrading, rolling and replanting.

D. Reseed small, sparse grass areas. When sparse areas exceed 20 percent of planted area, reseed by hydro mulch.

E. Mow grass when height reaches 32 inches or greater on average before final acceptance. Mow to height of 22 inches.

END OF SECTION

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END OF SECTION

SECTION 03100

CONCRETE FORMS AND ACCESSORIES

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
1. Formwork for cast-in place concrete.
2. Shoring, bracing, and anchorage.
3. Architectural form liners.
4. Form accessories.
5. Form stripping.

B. Related Sections:
1. Section 03200 - Concrete Reinforcement.
2. Section 03300 - Cast-in-Place Concrete.

### 1.2 REFERENCES

A. American Concrete Institute:
1. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
2. ACI 301 - Specifications for Structural Concrete.
3. ACI 318 - Building Code Requirements for Structural Concrete.
4. ACI 347 - Guide to Formwork for Concrete.

B. American Forest and Paper Association:
1. AF&PA - National Design Specifications for Wood Construction.

C. The Engineered Wood Association:
1. APA/EWA PS 1 - Voluntary Product Standard for Construction and Industrial Plywood.

D. ASTM International:
1. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
2. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

E. West Coast Lumber Inspection Bureau:
1. WCLIB - Standard Grading Rules for West Coast Lumber.

1.3 DESIGN REQUIREMENTS

A. Design, engineer and construct formwork, shoring and bracing in accordance with ACI 318 to conform to design and applicable code requirements to achieve concrete shape, line and dimension as indicated on Drawings.

1.4 PERFORMANCE REQUIREMENTS

A. Vapor Retarder Permeance: Maximum 1 perm perms when tested in accordance with ASTM E96, Procedure A.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 347 ACI 301 ACI 318.

B. For wood products furnished for work of this Section, comply with AF&PA.

C. Perform Work in accordance with State Municipality of Highways Public Work's standard.

1.6 COORDINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Coordinate this Section with other sections of work, requiring attachment of components to formwork.

PART 2 PRODUCTS

2.1 WOOD FORM MATERIALS

A. Form Materials: At discretion of Contractor.

2.2 FORMWORK ACCESSORIES

A. Vapor Retarder: Where indicated on Drawings, 10 mil thick polyethylene sheet manufacture by:
1. Stego Wrap Class A: by Stego Industries LLC (887) 464-7834
2. Griffolyn by Reef Industries (800) 231-6074
3. VaporBlock 10 by Raven Industries (800) 635-3456
4. Perminator Vapor – May by W.R. Meadows (800) 342-5976
5. Or Equivalent

B. Bituminous Joint Filler: ASTM D1751.

C. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength and character to maintain formwork in place while placing concrete.

D. Water Stops: Rubber Polyvinyl chloride, minimum 1,750 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, inch wide, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

****** OR ******

E. Waterstop: Flexible strip of bentonite waterproofing compound in coil form for joints in concrete construction.
1. Colloid Environmental Technologies Company Model.
2. TC MiraDRi Model.
3. Paramount Technical Products Model.
4. Substitutions: Section 01600 - Product Requirements Not Permitted.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify lines, levels, and centers before proceeding with formwork. Verify dimensions agree with Drawings.

C. When formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Architect/Engineer.

### 3.2 INSTALLATION

A. Earth Forms:
1. Earth forms are not permitted.

B. Formwork - General:
1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
3. Camber forms where necessary to produce level finished soffits unless otherwise shown on Drawings.
4. Carefully verify horizontal and vertical positions of forms. Correct misaligned or misplaced forms before placing concrete.
5. Complete wedging and bracing before placing concrete.

C. Forms for Smooth Finish Concrete:
   1. Use steel, plywood or lined board forms.
   2. Use clean and smooth plywood and form liners, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish.
   3. Install form lining with close-fitting square joints between separate sheets without springing into place.
   4. Use full size sheets of form lines and plywood wherever possible.
   5. Tape joints to prevent protrusions in concrete.
   6. Use care in forming and stripping wood forms to protect corners and edges.
   7. Level and continue horizontal joints.
   8. Keep wood forms wet until stripped.

D. Erect formwork, shoring, and bracing to achieve design requirements, in accordance with requirements of ACI 301 ACI 318.

E. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

F. Obtain Architect/Engineer’s approval before framing openings in structural members not indicated on Drawings.

G. Install fillet and chamfer strips on external corners of beams joists columns and.

H. Install void forms in accordance with manufacturer's recommendations.
   1. SureVoid Products, Inc., Englewood, CO (800) 458-5444.

I. Do not reuse wood formwork more than times for concrete surfaces to be exposed to view. Do not patch formwork.

3.3 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

C. Do not apply form release agent where concrete surfaces are indicated to receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

D. Reuse and Coating of Forms: Thoroughly clean forms and reapply form coating before each reuse. For exposed work, do not reuse forms with damaged faces or edges. Apply form coating to forms in accordance with manufacturer’s specifications. Do not coat forms for concrete indicated to receive “scored finish”. Apply form coatings before placing reinforcing steel.

## 3.4 INSTALLATION - INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Install formed openings for items to be embedded in or passing through concrete work.

B. Locate and set in place items required to be cast directly into concrete.

C. Coordinate with Work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.

D. Install accessories straight, level, and plumb. Ensure items are not disturbed during concrete placement.

E. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

F. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

G. Form Ties:
1. Use sufficient strength and sufficient quantity to prevent spreading of forms.
2. Place ties at least 1 inch away from finished surface of concrete.
3. Leave inner rods in concrete when forms are stripped.
4. Space form ties equidistant, symmetrical and aligned vertically and horizontally unless otherwise shown on Drawings.

H. Arrangement: Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.

I. Construction Joints:
1. Install surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints.
2. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage.
3. Show no overlapping of construction joints. Construct joints to present same appearance as butted plywood joints.
4. Arrange joints in continuous line straight, true and sharp.

J. Openings for Items Passing Through Concrete:
1. Frame openings in concrete where indicated on Drawings. Establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections.
2. Coordinate work to avoid cutting and patching of concrete after placement.
3. Perform cutting and repairing of concrete required as result of failure to provide required openings.

K. Screeds:

1. Set screeds and establish levels for tops of concrete slabs and levels for finish on slabs.
2. Slope slabs to drain where required or as shown on Drawings.
3. Before depositing concrete, remove debris from space to be occupied by concrete and thoroughly wet forms. Remove freestanding water.

L. Screed Supports:
1. For concrete over waterproof membranes and vapor retarder membranes, use cradle, pad or base type screed supports which will not puncture membrane.
2. Staking through membrane is not be permitted.

M. Cleanouts and Access Panels:
1. Provide removable cleanout sections or access panels at bottoms of forms to permit inspection and effective cleaning of loose dirt, debris and waste material.
2. Clean forms and surfaces against which concrete is to be placed. Remove chips, saw dust and other debris. Thoroughly blow out forms with compressed air just before concrete is placed.

## 3.5 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.

C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

## 3.6 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads and removal has been approved by Architect/Engineer.

B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

D. Leave forms in place for minimum number of days as specified in ACI 347.

## 3.7 ERECTION TOLERANCES

A. Construct formwork to maintain tolerances required by ACI 301 ACI 318.

****** OR ******

B. Camber slabs and beams 1/4 inch per 10 feet in accordance with ACI 301 ACI 318.

## 3.8 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.

C. Notify Architect/Engineer after placement of reinforcing steel in forms, but prior to placing concrete.

D. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Reinforcing bars.
2. Welded wire fabric.
3. Reinforcement accessories.

B. Related Sections:
1. Section 03100 - Concrete Forms and Accessories.
2. Section 03300 - Cast-in-Place Concrete.
3. Section 03350 - Concrete Finishing: Reinforcement for concrete floor toppings.

1.2 REFERENCES

A. American Concrete Institute:
1. ACI 301 - Specifications for Structural Concrete.
2. ACI 318 - Building Code Requirements for Structural Concrete.
3. ACI 530.1 - Specifications for Masonry Structures.
4. ACI SP-66 - ACI Detailing Manual.

B. ASTM International:
1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
2. ASTM A184/A184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
3. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
4. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
5. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
6. ASTM A704/A704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
7. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
8. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
9. ASTM A775/A775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.

10. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.
11. ASTM A934/A934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
12. ASTM A996/A996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
13. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars.

C. American Welding Society:
1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.

D. Concrete Reinforcing Steel Institute:
1. CRSI - Manual of Standard Practice.
2. CRSI - Placing Reinforcing Bars.

## 1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices and.

C. Certificates: Submit AWS qualification certificate for welders employed on the Work.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
1. Submit certified copies of mill test report of reinforcement materials analysis.

## 1.4 QUALITY ASSURANCE

A. Perform Work in accordance with CRSI - Manual of Standard Practice ACI 301 ACI 318.

B. Prepare shop drawings in accordance with ACI SP-66.

C. Perform Work in accordance with State Municipality of Highways Public Work's standard.

## 1.5 QUALIFICATIONS

A. Welders: AWS qualified within previous 12 months.

## 1.6 COORDINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Coordinate with placement of formwork, formed openings and other Work.

## PART 2 PRODUCTS

### 2.1 REINFORCEMENT

A. Deformed and Plain Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars, unfinished galvanized finish epoxy coated finish.

### 2.2 ACCESSORY MATERIALS

A. Tie Wire: Minimum 16 gage annealed type, epoxy coated.

B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor retarder puncture.

C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic-coated steel Plastic tipped steel Stainless steel type; size and shape to meet Project conditions.

D. Reinforcing Splicing Devices: Exothermic welding type; full tension and compression; sized to fit joined reinforcing.

****** OR ******

E. Reinforcing Splicing Devices: Mechanical set screw swaged threaded type; full tension and compression; sized to fit joined reinforcing.

F. Epoxy Coating Patching Material: Type as recommended by coating manufacturer.

### 2.3 FABRICATION

A. Fabricate concrete reinforcement in accordance with CRSI Manual of Practice ACI 318 applicable code.

B. Form standard hooks for 180 degree bends, 90 degree bend, stirrup and tie hooks, and seismic hooks as indicated on Drawings.

C. Form reinforcement bends with minimum diameters in accordance with ACI 318 applicable code.

D. Fabricate column reinforcement with offset bends at reinforcement splices.

E. Form spiral column reinforcement from minimum 3/8 inch diameter continuous plain deformed bar or wire.

F. Form ties and stirrups from the following:
   1. For bars No. 10 and Smaller: No. 3 deformed bars deformed wire.
   2. For bars No. 11 and Larger: No. 4 deformed bars deformed wire.

G. Weld reinforcement in accordance with AWS D1.4.

H. Galvanized Epoxy-Coated Reinforcement: Clean surfaces, weld and re-protect welded joint in accordance with CRSI.

I. Locate reinforcement splices not indicated on Drawings, at point of minimum stress. Review location of splices with Architect/Engineer.

## 2.4 SHOP FINISHING

A. Galvanized Finish for Steel Bars: ASTM A767/A767M, Class I II, hot dip galvanized after fabrication.

B. Epoxy Coated Finish for Steel Bars: ASTM A775/A775M ASTM A934/A934M.

C. Epoxy Coated Finish for Steel Wire: ASTM A884/A884M; Class A using ASTM A775/A775M ASTM A934/A934M.

# PART 3 EXECUTION

## 3.1 PLACEMENT

A. Place, support and secure reinforcement against displacement. Do not deviate from required position beyond specified tolerance.
   1. Do not weld crossing reinforcement bars for assembly except as permitted by Architect/Engineer.

B. Do not displace or damage vapor retarder.

C. Accommodate placement of formed openings.

D. Space reinforcement bars with minimum clear spacing in accordance with ACI 318 of one bar diameter, but not less than 1 inch.
   1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.

E. Maintain concrete cover around reinforcement in accordance with ACI 318 applicable code as follows:

| | |
|---|---|
| Footings and Concrete Formed Against Earth | 3 inches |

| | | |
|---|---|---|
| Concrete exposed to earth or weather | No. 6 bars and larger | 2 inches |
| | No. 5 bars and smaller | 1-1/2 inches |
| Supported Slabs, Walls, and Joists | No. 14 bars and larger | 1-1/2 inches |
| | No. 11 bars and smaller | 3/4 inches |
| Beams and Columns | | 1-1/2 inches |
| Shell and Folded Plate Members | No. 6 bars and larger | 3/4 inches |
| | No. 5 bars and smaller | 1/2 inches |

3.2 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Install reinforcement within the following tolerances for flexural members, walls, and compression members:

| Reinforcement Depth | Depth Tolerance | Concrete Cover Tolerance |
|---|---|---|
| Greater than 8 inches | plus or minus 3/8 inch | minus 3/8 inch |
| Less than 8 inches | plus or minus 1/2 inch | minus 1/2 inch |

C. Install reinforcement within the tolerances specified in ACI 530.1 for foundation walls.

3.3 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Field inspection and testing will be performed by Owner’s testing laboratory in accordance with ACI 318 applicable code.

C. Perform field inspection and testing in accordance with ACI 318 applicable code.

D. Provide free access to Work and cooperate with appointed firm.

E. Reinforcement Inspection:
1. Placement Acceptance: Specified and ACI 318 material requirements and specified placement tolerances.
2. Welding: Inspect welds in accordance with AWS D1.1.

3. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.
4. Weldability Inspection: Inspect for reinforcement weldability when formed from steel other than ASTM A706/A706M.
5. Continuous Weld Inspection: Inspect reinforcement as required by ACI 318 applicable code.
6. Periodic Weld Inspection: Other welded connections.

END OF SECTION

Section 03211

REINFORCING STEEL

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Structural concrete reinforcement and grouting of reinforcement dowel bars into hardened concrete.

~~1.02 UNIT PRICES~~

~~A. No separate payment will be made for reinforcing steel or grouting that is part of the Work as bid. Include payment in unit price for structural concrete.~~

~~B. Measurement for reinforcing steel installed as extra work is on a per-pound basis.~~

~~C. Refer to Section 01270 - Measurement and Payment for unit price procedures.~~

1.03 REFERENCES

A. ACI 315 - Details and Detailing of Concrete Reinforcement.

B. ACI 318 - Building Code Requirements for Reinforced Concrete.

C. ASTM A 36 - Standard Specification for Structural Steel.

D. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

E. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

F. ASTM A 497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.

G. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

H. ASTM A 675 - Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.

I. ASTM A 775/A 775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.

J. ASTM C 881 - Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

K. AWS D 1.4 - Structural Welding Code - Reinforcing Steel.

L. WRI - Manual of Standard Practice for Welded Wire Fabric.

M. CRSI MSP-1 - Manual of Standard Practice.

1.04 SUBMITTALS

~~A. Conform to Section 01330 – Submittal Procedures.~~

B. Shop Drawings:

1. Submit shop drawings detailing reinforcement fabrication, bar placement location, splices, spacing, bar designation, bar type, length, size, bending, number of bars, bar support type and other pertinent information, including dimensions. Provide sufficient detail for placement of reinforcement without use of Contract Drawings. Information shall correspond directly to data listed on bill of materials.

2. Use of reproductions of Contract Drawings by Contractor, Subcontractor, erector, fabricator or material supplier in preparation of shop drawings (or in lieu of preparation of shop drawings) signifies acceptance by that party of information shown thereon as correct, and acceptance of obligation to pay for any job expense, real or implied, arising due to errors that may occur thereon. Remove references to Design Engineer, including seals, when reproductions of Contract Drawings are used as shop drawings.

3. Detail shop drawings in accordance with ACI 315, Figure 6.

4. Submit shop drawings showing location of proposed additional construction joints as required under Section 03351 - Joints in Concrete Structures, and obtain approval of Engineer, prior to submitting reinforcing steel shop drawings.

C. Bill of Materials: Submit with shop drawings.

D. Product Data:

1. Mechanical Bar Splices: Submit manufacturer's technical literature, including specifications and installation instructions.

2. Epoxy grout proposed for anchoring reinforcing dowels to hardened concrete: Submit manufacturer's technical literature including recommended installation procedures.

E. Certificates:

1. Submit steel manufacturer's certificates of mill tests giving properties of steel proposed for use. List manufacturer's test number, heat number, chemical analysis, yield point, tensile strength and percentage of elongation. Identify proposed location of steel in work.

2. Foreign-manufactured reinforcing bars shall be tested for conformance to ASTM requirements by a certified independent testing laboratory located in United States. Certification from any other source is not acceptable. Submit test reports for review. Do not begin fabrication of reinforcement until material has been approved.

1.05 HANDLING AND STORAGE

A. Store steel reinforcement above ground on platforms, skids or other supports. Protect reinforcing from mechanical injury, surface deterioration and formation of excessive, loose or flaky rust caused by exposure to weather. Protect epoxy-coated reinforcing from formation of any amount of rust.

1.06 QUALITY ASSURANCE

A. Notify Resident Project Representative at least 48 hours before concrete placement so that reinforcement may be inspected, and errors corrected, without delaying Work.

PART 2 P R O D U C T S

2.01 MATERIAL

A. Reinforcing Bars: Deformed bars conforming to ASTM A 615, grade as indicated on Drawings, except column spirals and those shown on Drawings to be smooth bars. Where grade is not shown on Drawings, use Grade 60.

B. Smooth Bars: Where indicated on Drawings, use smooth bars conforming to ASTM A 36; ASTM A 615, Grade 60; or ASTM A 675, Grade 70.

C. Column Spirals: Bars conforming to ASTM A 615, Grade 60, or wire conforming to ASTM A 82.

D. Epoxy-Coated Deformed Bars, Column Spirals and Smooth Bars: Conform to ASTM A 775/A 775M.

E. Welded Wire Fabric:

1. Welded Smooth Wire Fabric: Conform to ASTM A 185.

2. Welded Deformed Wire Fabric: Conform to ASTM A 497.

3. Provide wire size, type and spacing as shown. Where type is not shown on Drawings, use welded smooth wire fabric.

4. Furnish welded wire fabric in flat sheets only.

F. Tie Wire: 16-1/2 gage or heavier annealed steel wire. Use plastic-coated tie wire with epoxy-coated reinforcing steel.

G. Bar Supports: Provide chairs, riser bars, ties and other accessories made of plastic or metal, except as otherwise specified. Use bar supports and accessories of sizes required to provide required concrete cover. Where concrete surfaces are exposed to weather, water or wastewater, provide plastic accessories only; do not use galvanized or plastic-tipped metal in such locations. Provide metal bar supports and accessories rated Class 1 or 2 conforming to CRSI MSP-1 Manual of Standard Practice. Use epoxy-coated bar supports with epoxy-coated reinforcing bars.

H. Slabs on Grade: Provide chairs with sheet metal bases or provide precast concrete bar supports 3 inches wide, 6 inches long, and thick enough to allow required cover. Embed tie wires in 3-inch by 6-inch side.

I. Mechanical Bar Splices:

1. Conform to ACI 318; use where indicated on Drawings.

a. Compression splices shall develop ultimate stress of reinforcing bar.

b. Tension splices shall develop 125 percent of minimum yield point stress of reinforcing bar.

2. Regardless of chemical composition of steel, any heat effect shall not adversely affect performance of reinforcing bar.

J. Welded Splices:

1. Provide welded splices where shown and where approved by the Engineer. Welded splices of reinforcing steel shall develop a tensile strength exceeding 125 percent of the yield strength of the reinforcing bars connected.

2. Provide materials for welded splices conforming to AWS D1.4.

K. Epoxy Grout: High-strength rigid epoxy adhesive, conforming to ASTM C 881, Type IV, manufactured for purpose of anchoring dowels into hardened concrete and the moisture condition, application temperature and orientation of the hole to be filled. Unless otherwise shown, depth of embedment shall be as required to develop the full tensile strength (125 percent of yield strength) of dowel, but not less than 12 diameters.

2.02 FABRICATION

A. Bending: Fabricate bars to shapes indicated on Drawings by cold bending. Bends shall conform to minimum bend diameters specified in ACI 318. Do not straighten or rebend bars. Fabricate epoxy-coated reinforcing steel to required shapes in a manner that will not damage epoxy coating. Repair any damaged epoxy coating with patching material conforming to Item 4.4 of ASTM A 775/A 775M.

B. Splices:

1. Locate splices as indicated on Drawings. Do not locate splices at other locations without approval of Engineer. Use minimum number of splices located at points of minimum stress. Stagger splices in adjacent bars.

2. Length of lap splices: As shown on Drawings.

3. Prepare ends of bars at mechanical splices in accordance with splice manufacturer's requirements.

C. Construction Joints: Unless otherwise shown, continue reinforcing through construction joints.

D. Bar Fabrication Tolerances: Conform to tolerances listed in ACI 315, Figures 4 and 5.

E. Standard Hooks: Conform to the requirements of ACI 318.

F. Marking: Clearly mark bars with waterproof tags showing number of bars, size, mark, length and yield strength. Mark steel with same designation as member in which it occurs.

PART 3 E X E C U T I O N

3.01 PREPARATION

A. Clean reinforcement of scale, loose or flaky rust and other foreign material, including oil, mud or coating that will reduce bond to concrete.

3.02 INSTALLATION

A. Placement Tolerances: Place reinforcement within tolerances of Table 03210A at the end of this Section. Bend tie wire away from forms to maintain the specified concrete coverage.

B. Interferences: Maintain 2-inch clearance from embedded items. Where reinforcing interferes with location of other reinforcing steel, conduit or embedded items, bars may be moved within

specified tolerances or one bar diameter, whichever is greater. Where greater movement of bars is required to avoid interference, notify Engineer. Do not cut reinforcement to install inserts, conduit, mechanical openings or other items without approval of Engineer.

C. Concrete Cover: Provide clear cover measured from reinforcement to face of concrete as listed in Table 03210B at the end of this Section, unless otherwise indicated on Drawings.

D. Placement in Forms: Use spacers, chairs, wire ties and other accessory items necessary to assemble, space and support reinforcing properly. Provide accessories of sufficient number, size and strength to prevent deflection or displacement of reinforcement due to construction loads or concrete placement. Use appropriate accessories to position and support bolts, anchors and other embedded items. Tie reinforcing bars at each intersection, and to accessories. Blocking reinforcement with concrete or masonry is prohibited.

E. Placement for Concrete on Ground: Support bar and wire reinforcement on chairs with sheet metal bases or precast concrete blocks spaced at approximately 3 feet on centers each way. Use minimum of one support for each 9 square feet. Tie supports to reinforcing bars and wires.

F. Vertical Reinforcement in Columns: Offset vertical bars by at least one bar diameter at splices. Provide accurate templates for column dowels to ensure proper placement.

G. Splices:

1. Do not splice bars, except at locations indicated on Drawings or reviewed shop drawings, without approval of Engineer.

2. Lap Splices: Unless otherwise shown or noted, Class B, conforming to ACI 318-89, Section 12.15.1. Tie securely with wire prior to concrete placement, to prevent displacement of splices during concrete placement.

3. Mechanical Bar Splices: Use only where indicated on Drawings or approved by the Engineer. Install in accordance with manufacturer's instructions.

a. Couplers located at a joint face shall be of a type which can be set either flush or recessed from the face as shown. Seal couplers prior to concrete placement to completely eliminate concrete or cement paste from entering.

b. Couplers intended for future connections: Recess 1/2 inch minimum from concrete surface. After concrete is placed, plug coupler and fill recess with sealant to prevent contact with water or other corrosive materials.

c. Unless noted otherwise, match mechanical coupler spacing and capacity to that shown for the adjacent reinforcing.

H. Construction Joints: Place reinforcing continuous through construction joints, unless noted otherwise.

I. Welded Wire Fabric: Install wire fabric in as long lengths as practicable. Unless otherwise indicated on Drawings, lap adjoining pieces at least 6 inches or one full mesh plus 2 inches, whichever is larger. Lace splices with wire. Do not make end laps midway between supporting beams, or directly over beams of continuous structures. Offset end laps in adjacent widths to prevent continuous laps. Conform to WRI - Manual of Standard Practice for Welded Wire Fabric.

J. Field Bending: Shape reinforcing bent during construction operations to conform to Drawings.

Bars shall be cold-bent; do not heat bars. Closely inspect reinforcing for breaks. When reinforcing is damaged, replace, Cadweld, or otherwise repair, as directed by Engineer. Do not bend reinforcement after it is embedded in concrete.

K. Epoxy-coated Reinforcing Steel: Install in accordance with Paragraph 3.02J, Field Bending, and in a manner that will not damage epoxy coating. Repair damaged epoxy coating with patching material as specified in Paragraph 2.02A, Bending.

L. Field Cutting: Cut reinforcing bars by shearing or sawing. Do not cut bars with cutting torch.

M. Welding of reinforcing bars is prohibited, except where shown on Drawings.

3.03 GROUTING OF REINFORCING AND DOWEL BARS

A. Use epoxy grout for anchoring reinforcing and dowel steel to existing concrete in accordance with epoxy manufacturer's instructions. Drill hole not more than 1/4 inch larger than steel bar diameter (including height of deformations for deformed bars) in existing concrete. Just before installation of steel, blow hole clean of all debris using compressed air. Partially fill hole with epoxy, using enough epoxy so when steel bar is inserted, epoxy grout will completely fill hole around bar. Dip end of steel bar in epoxy and twist bar while inserting into partially-filled hole.

Table 03210A
REINFORCEMENT PLACEMENT TOLERANCES

| PLACEMENT | TOLERANCE IN INCHES |
|---|---|
| Clear Distance - | |
| To formed soffit: | -1/4 |
| To other formed surfaces: | "1/4 |
| Minimum spacing between bars: | -1/4 |
| Clear distance from unformed surface to top reinforcement - | |
| Members 8 inches deep or less: | "1/4 |
| Members more than 8 inches deep but less than 24 inches deep: | |
| Members 24 inches deep or greater: | -1/4, +1/2 |
| Uniform spacing of bars (but the required number of bars shall not be reduced): | -1/4, +1 |
| Uniform spacing of stirrups and ties (but the required number of stirrups and ties shall not be reduced): | "2 |
| | "1 |
| Longitudinal locations of bends and ends of reinforcement - | |
| General: | "2 |
| Discontinuous ends of members: | "1/2 |
| Length of bar laps: | -1-1/2 |
| Embedded length - | |
| For bar sizes No. 3 through 11: | -1 |
| For bar sizes No. 14 and 18: | -2 |

Table 03210B
MINIMUM CONCRETE COVER FOR REINFORCEMENT

| SURFACE | MINIMUM COVER IN INCHES |
|---|---|
| Slabs and Joists - | |
| Top and bottom bars for dry conditions - | |
| No. 14 and No. 18 bars: | 1-1/2 |
| No. 11 bars and smaller: | 1 |
| Formed concrete surfaces exposed to earth, water or weather; over, or in contact with, sewage; and for bottoms bearing on work mat, or slabs supporting earth cover - | |
| No. 5 bars and smaller: | 1-1/2 |
| No. 6 through No. 18 bars: | 2 |
| Beams and Columns - | |
| For dry conditions - | |
| Stirrups, spirals and ties: | 1-1/2 |
| Principal reinforcement: | 2 |
| Exposed to earth, water, sewage or weather - | |
| Stirrups and ties: | 2 |
| Principal reinforcement: | 2-1/2 |
| Walls - | |
| For dry conditions - | |
| No. 11 bars and smaller: | 1 |
| No. 14 and No. 18 bars: | 1-1/2 |
| Formed concrete surfaces exposed to earth, water, sewage or weather, or in contact with ground - | |
| Circular tanks with ring tension: | 2 |
| All others: | 2 |
| Footings and Base Slabs - | |
| At formed surfaces and bottoms bearing on concrete work mat: | |
| At unformed surfaces and bottoms in contact with earth: | 2 |
| Over top of piles: | 3 |
| Top of footings -- same as slabs | 2 |

# SECTION 03300

# CAST-IN-PLACE CONCRETE

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section includes cast-in-place concrete for the following:
   1. Building frame members.
   2. Shear walls.
   3. Foundation walls.
   4. Supported slabs.
   5. Slabs on grade.
   6. Control, expansion and contraction joint devices.

B. Related Sections:
   1. Section 03100 - Concrete Forms and Accessories: Formwork and accessories. Placement of joint device joint device anchors in formwork.
   2. Section 03200 - Concrete Reinforcement.
   3. Section 03350 - Concrete Finishing.
   4. Section 03390 - Concrete Curing.

### 1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 305 - Hot Weather Concreting.
   3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
   4. ACI 308.1 - Standard Specification for Curing Concrete.
   5. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:
   1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   2. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
   3. ASTM C33 - Standard Specification for Concrete Aggregates.
   4. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
   5. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
   6. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
   7. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
   8. ASTM C150 - Standard Specification for Portland Cement.

9. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
10. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
11. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
12. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
13. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
14. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
15. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
16. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
17. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
18. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
19. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
20. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
21. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
22. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
23. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
24. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
25. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
26. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
27. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
28. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
29. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
30. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
31. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
32. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
33. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

34. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.3 PERFORMANCE REQUIREMENTS

A. Vapor Retarder Permeance: Maximum 1 perm when tested in accordance with ASTM E96, Procedure A.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on joint devices, attachment accessories, admixtures.

C. Design Data:
1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
   a. Hot and cold weather concrete work.
   b. Air entrained concrete work.
2. Identify mix ingredients and proportions, including admixtures.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301 ACI 318.

B. Conform to ACI 305 when concreting during hot weather.

C. Conform to ACI 306.1 when concreting during cold weather.

D. Acquire cement and aggregate from one source for Work.

1.6 COORDINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Cement: ASTM C150, Type I - Normal Type IA - Air Entraining Type II - Moderate Type IIA - Air Entraining Type III - High Early Strength Type IIIA - Air Entraining Type IV - Low Heat of Hydration Type V - Sulfate Resistant Portland type; manufactured by; ASTM C595, list appropriate blend and cement type.

B. Normal Weight Aggregates: ASTM C33.
1. Coarse Aggregate Maximum Size: inches In accordance with ACI 318. Water: ACI 318; potable, without deleterious amounts of chloride ions with maximum percent of water soluble chloride ions by weight of cement.

2.2 ADMIXTURES

A. Furnish materials in accordance with State Municipality of Highways Public Work's standards.

B. Air Entrainment: ASTM C260.

C. Chemical: ASTM C494/C494M Type A - Water Reducing Type B - Retarding Type C - Accelerating Type D - Water Reducing and Retarding Type E - Water Reducing and Accelerating Type F - Water Reducing, High Range Type G - Water Reducing, High Range and Retarding.

D. Fly Ash Calcined Pozzolan: ASTM C618 Class.

E. Silica Fume: ASTM C1240.

F. Slag: ASTM C989; Grade 80 100 120; ground granulated blast furnace slag.

G. Plasticizing: ASTM C1017/C1017M Type I, plasticizing Type II, plasticizing and retarding.

2.3 ACCESSORIES

A. Bonding Agent: Polymer resin emulsion Polyvinyl Acetate Latex emulsion Two component modified epoxy resin Non-solvent two component polysulfide epoxy Mineral filled polysulfide polymer epoxy Mineral filled polysulfide polymer epoxy resin Polyamid cured epoxy.

B. Vapor Retarder: ASTM E1745 Class A B C; 10 mil thick polyethylene film fabric reinforced plastic film; type recommended for below grade application. Furnish joint tape recommended by manufacturer.

C. Non-Shrink Grout: ASTM C1107, Grade A B C; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.

2.4 JOINT DEVICES AND FILLER MATERIALS

A. Joint Filler Type A: ASTM D1751 ASTM D994; Asphalt impregnated fiberboard or felt, 1/4 inch thick; tongue and groove profile.

****** OR ******

B. Joint Filler Type B: ASTM D1752; Closed cell polyvinyl chloride molded vinyl foam, resiliency recovery of 95 percent if not compressed more than 50 percent of original thickness.

****** OR ******

C. Joint Filler Type C: ASTM D1752; Premolded sponge rubber fully compressible with recovery rate of minimum 95 percent.

D. Construction Joint Devices: Integral galvanized steel extruded plastic; inch thick, formed to tongue and groove profile, with removable top strip exposing sealant trough, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge; manufactured by.

E. Expansion and Contraction Joint Devices: ASTM B221 alloy, extruded aluminum; resilient elastomeric vinyl neoprene filler strip with Shore A hardness of 35 to permit plus or minus 25 percent joint movement with full recovery; extruded aluminum vinyl cover plate, of longest manufactured length at each location, flush recessed mounted; color as selected; manufactured by.

F. Sealant: ASTM D6690, Type I.

2.5 CONCRETE MIX

A. Select proportions for normal weight concrete in accordance with ACI 301 Method 1

B. Admixtures: Include admixture types and quantities indicated in concrete mix designs only when approved by Architect/Engineer.
   1. Use accelerating admixtures in cold weather. Use of admixtures will not relax cold weather placement requirements.
   2. Do not use calcium chloride nor admixtures containing calcium chloride.
   3. Use set retarding admixtures during hot weather.
   4. Add air entrainment admixture to concrete mix for work exposed to freezing and thawing or deicing chemicals.
   5. For concrete exposed to deicing chemicals, limit fly ash, pozzolans, silica fume, and slag content as required by applicable code.

C. Average Compressive Strength Reduction: Not permitted.

D. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M ASTM C685/C685M.

E. Site Mixed Concrete: Mix concrete in accordance with ACI 318.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify requirements for concrete cover over reinforcement.

C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

### 3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.

B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

C. Remove debris and ice from formwork, reinforcement, and concrete substrates.

D. Remove water from areas receiving concrete before concrete is placed.

### 3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 301 ACI 318.

B. Notify testing laboratory and Architect/Engineer minimum 24 hours prior to commencement of operations.

C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and are not disturbed during concrete placement.

D. Install vapor retarder under interior slabs on grade in accordance with ASTM E1643. Lap joints minimum 6 inches and seal watertight by adhesive applied between overlapping edges and ends taping edges and ends.

E. Repair vapor retarder damaged during placement of concrete reinforcing. Repair with vapor retarder material; lap over damaged areas minimum 6 inches and seal watertight.

F. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

G. Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor and wall finish.

H. Install joint covers in one piece longest practical length, when adjacent construction activity is complete.

I. Apply sealants in joint devices in accordance with Section 07900.

J. Deposit concrete at final position. Prevent segregation of mix.

K. Place concrete in continuous operation for each panel or section determined by predetermined joints.

L. Consolidate concrete.

M. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

N. Place concrete continuously between predetermined expansion, control, and construction joints.

O. Do not interrupt successive placement; do not permit cold joints to occur.

P. Place floor slabs in checkerboard or saw cut pattern indicated.

Q. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness.

R. Screed floors and slabs on grade level, maintaining surface flatness of $F_f$ of 20 maximum 1/4 inch in 10 ft.

## 3.4 CONCRETE FINISHING

A. Provide formed concrete surfaces to be left exposed concrete walls columns beams joists with smooth rubbed sand float sack rubbed finish as Scheduled in this section.

B. Finish concrete floor surfaces in accordance with ACI 301 ACI 318.

C. Wood float surfaces receiving quarry tile ceramic tile terrazzo with full bed setting system.

D. Steel trowel surfaces receiving carpeting resilient flooring seamless flooring thin set quarry tile thin set ceramic tile.

E. Steel trowel surfaces which are indicated to be exposed.

F. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1/8 1/4 inch per foot nominal as indicated on drawings.

## 3.5 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
   1. Protect concrete footings from freezing for minimum 5 days.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Cure concrete in accordance with ACI 308.1

D. Cure floor surfaces in accordance with ACI 301 ACI 318.

E. Ponding: Maintain 100 percent coverage of water over floor slab areas continuously for 7 days.

F. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

## 3.6 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform field inspection and testing in accordance with ACI 318 applicable code.

C. Provide free access to Work and cooperate with appointed firm.

D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.

E. Concrete Inspections:
   1. Continuous Placement Inspection: Inspect for proper installation procedures.
   2. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.

F. Strength Test Samples:
   1. Sampling Procedures: ASTM C172.
   2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, standard cured field cured.
   3. Sample concrete and make one set of three cylinders for every 150 cu yds or less of each class of concrete placed each day and for every 5,000 sf of surface area for slabs and walls.

4. When volume of concrete for any class of concrete would provide less than 3 sets of cylinders, take samples from three randomly selected batches, or from every batch when less than 3 batches are used.
5. Make one additional cylinder during cold weather concreting, and field cure.

G. Field Testing:
1. Slump Test Method: ASTM C143/C143M.
2. Air Content Test Method: ASTM C173/C173M ASTM C231.
3. Temperature Test Method: ASTM C1064/C1064M.
4. Measure slump and temperature for each compressive strength concrete sample.
5. Measure air content in air entrained concrete for each compressive strength concrete sample.

H. Cylinder Compressive Strength Testing:
1. Test Method: ASTM C39.
2. Test Acceptance: In accordance with ACI 318 applicable code.
3. Test one cylinder at 7 days.
4. Test two cylinders at 28 days.
5. Dispose remaining cylinders when testing is not required.

I. Core Compressive Strength Testing:
1. Sampling and Testing Procedures: ASTM C42/C42M.
2. Test Acceptance: In accordance with ACI 318 applicable code.
3. Drill three cores for each failed strength test from concrete represented by failed strength test.

J. Water Soluble Chloride Ion Concentration Test Method: ASTM C1218; tested at 28 days.
1. Maximum Concentration: As permitted by applicable code.

K. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

## 3.7 PATCHING

A. Allow Architect/Engineer to inspect concrete surfaces immediately upon removal of forms.

B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer upon discovery.

C. Patch imperfections as directed by Architect/Engineer in accordance with ACI 301 ACI 318.

## 3.8 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by Architect/Engineer.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

END OF SECTION

SECTION 03350

CONCRETE FINISHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

Specifier Note: Select paragraph(s) below to conform to project requirements.

1. Double application cure-seal-hardener for new concrete floors.
2. Precautions for avoiding staining concrete before and after application.

B. Related Section:

1. Cast-In-Place Concrete: Division 03 Cast-In-Place Concrete sections.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM C39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
2. ASTM C779 Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.
3. ASTM C805 Standard Test Method for Rebound Number of Hardened Concrete.
4. ASTM C1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
5. ASTM D3359 Standard Test Methods for Measuring Adhesion by Tape Test.
6. ASTM G23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials (Withdrawn 2000).

1.3 SUBMITTALS

A. Section 01330 – Submittal Procedures

B. Product Data: Submit product data, including manufacturer’s SPEC-DATA® sheet, installation instructions and technical bulletins for specified products.

C. Certificates: Manufacturer’s certification that the installer is acceptable.

D. Maintenance Data: Maintenance instructions, including precautions for avoiding staining after application.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Ashford Formula can only be installed by Certified Applicators

For Certified installers call Deek Rife at 402.598.0801

1.5 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 01 Product Requirements section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

D. Handling: Protect materials from dirt, corrosion, oil, grease and other contaminants.

PART 2 **PRODUCTS**

2.1 MATERIAL

A. Manufacturer: Curecrete Distribution, Inc.

1. Contact: 1203 W. Spring Creek Place, Springville, UT 84663-0551; Telephone: (800) 998-5664, (801) 489-5663; Fax: (801) 489-3307; website: www.ashfordformula.com.

B. Cure-Seal-Hardener: Ashford Formula, a water-based chemically reactive penetrating sealer and hardener that seals by densifying concrete so that water molecules cannot pass through but air and water vapor can, and allows concrete to achieve full compressive strength, minimizing surface crazing and eliminating dusting.

1. Abrasion Resistance to Revolving Disks: At least a 32.5% improvement over untreated samples when tested in accordance with ASTM C779.
2. Surface Adhesion: At least a 22% increase in adhesion for epoxy when tested in accordance with ASTM D3359.
3. Hardening: As follows when tested in accordance with ASTM C39:
   a. After 7 Days: An increase of at least 40% over untreated samples.
   b. After 28 Days: An increase of at least 38% over untreated samples.
4. Coefficient of Friction: 0.86 dry, 0.69 wet when tested in accordance with ASTM C1028.
5. Rebound Number: An increase of at least 13.3% over untreated samples when tested in accordance with ASTM C805.
6. Light Exposure Degradation: No evidence of adverse effects on treated samples when tested in accordance with ASTM G23.

2.2 PRODUCT SUBSTITUTIONS

A. Substitutions: No Substitutions permitted

PART 3 **EXECUTION**

3.1 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.2 EXAMINATION

A. Do not begin installation until substrates have been properly prepared and are suitable for application of product.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.3 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Do not use frozen material. Thaw and agitate prior to use.

D. If construction equipment must be used for application, diaper all components that might drip oil, hydraulic fluid or other liquids.

3.4 INSTALLATION.

A. All work must be performed by an applicator certified by the manufacturer. Certification credentials are required.

B. New Concrete: Apply cure-seal-hardener to new concrete as soon as the concrete is firm enough to work on after troweling; with colored concrete, wait a minimum of 30 days before application.

1. Spray on at rate of 200 $ft^2$/gal (5 $m^2$/L).
2. Keep surface wet with cure-seal-hardener for a minimum soak-in period of 30 minutes without allowing it to dry out or become slippery. In hot weather, slipperiness may appear before the 30 minute time period has elapsed. If that occurs, apply additional cure-seal-hardener as needed to keep the entire surface in a non-slippery state for the first 15 minutes. For the remaining 15 minutes, mist the surface as needed with water to keep the material in a non-slippery state. In hot weather conditions, follow manufacturer's special application procedures.
3. When the treated surface becomes slippery after this period, lightly mist with water until slipperiness disappears.
4. Wait for surface to become slippery again, and then flush entire surface with water to remove all cure-seal-hardener residue.

5. Squeegee surface completely dry, flushing any remaining slippery areas until no residue remains.
6. Wet vacuum or scrubbing machines can be used in accordance with manufacturer's instructions to remove residue.
7. Repeat process after 7 days

## 3.5 PROTECTION

A. Protect installed floors for at least 3 months until chemical reaction process is complete.
   1. Do not allow traffic on floors for 3 hours after application.
   2. Do not allow parking of vehicles on concrete slab.
   3. If vehicles must be temporarily parked on slab, place drop cloths under vehicles during entire time parked.
   4. Do not allow pipe cutting using pipe cutting machinery on concrete slab.
   5. Do not allow temporary placement and storage of steel members on concrete slabs.
   6. Clean up spills immediately and spot-treat stains with degreaser or oil emulsifier.
   7. Clean floor regularly in accordance with manufacturer's recommendations.

**END OF SECTION**

**SECTION 03360**
**SPECIAL CONCRETE FLOOR FINISHES**

## PART 1 GENERAL

### 1. 01 SUMMARY

This section includes the following:

1.01 - SECTION INCLUDES

A. Liquid hardeners to protect horizontal concrete surfaces.

1.02 - RELATED SECTIONS

A. Section 01 74 00 - Cleaning and Waste Management

B. Section 07 09 00 – Joint sealants

C. Section 03 31 00 - Structural Concrete

1. Grinding & Polishing of Concrete
2. Application of the Ashford Formula
3. Ashford Formula Owners Manual
4. Ashford Formula Test Results

F. Related Work:

1. Section 03300 Cast-In-Place Concrete

### 1.02 REFERENCES

A. American Society for Testing and Materials: ASTM C 1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull Meter Method.

B. ASTM D 3278 Standard Test Method for Flash Point of Liquids by Small Scale Closed Cup Apparatus.

C. ASTM D 3363-05 Standard Test Method for Film Hardness by Pencil Test.

D. ASTM E 430 Standard Test Method for Measurement of Gloss of High-Gloss Surfaces by Abridged Goniophotometry.

E. Rilem Test Method -Test No. 11.4 Measurement of Water Absorption Under Low Pressure.

F. ASTM-C779, Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces

G. ASTM G23-81, Ultraviolet Light & Water Spray

H. ASTM C805, Impact Strength

I. American Concrete Institute

J. ACI 302. 1-89, Guide for Concrete Floor and Slab Construction

K. Other Test

1. Reflectivity

### 1.03 SUBMITTALS

A. Submit in accordance with Section 01330 - Submittal Procedures.

B. Product Data: Submit manufacturer's product data sheets on all products to be used for the work. Submit description for protection of surrounding areas, surface preparation, application, and final cleaning.

C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

D. Manufacturer's acknowledgement of applicator qualifications.

E. VOC Certification: Submit certification that products furnished comply with regulations controlling use of volatile organic compounds (VOC).

F. Product Variations: Retro Plate 99

1. The variegated colors and appearance are unique to each concrete surface and depend on the chemical composition, mix design, porosity, age, texture and color of the concrete substrate. Mottling and wide variations in color and intensity may occur. If contaminants remain on the surface, the penetration of the Retro-Pel may be blocked. Concrete from different loads or pours, and in patched areas, may appear significantly
2.) No private label products will be accepted.

**1.04 QUALITY ASSURANCE**

A. Installer Qualifications:

1. Use only a Factory RetroPel installer and adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft.
2. The special concrete finish manufacturer, Ashford Formula/RetroPel shall approve the applicator. No other applicators are allowed, Ashford Formula will provide a job specific letter per job.
3. Applicator shall be familiar with the specified requirements and the methods needed for proper performance of work of this section. Applicator must have availability of proper equipment to perform work within scope of this project on a timely basis. Applicator should have successfully performed a minimum of 5 projects of at least 15,000 square feet each.

B. Manufacturer's Certification

1. Provide letter of certification from Retro Plate, stating that installer is listed applicator of special concrete finishes, and has completed the RetroPel Certified Installer Training Program.

C. Mock Up

2. Mock-up size: 10'x10' floor area at job site, at location as directed under conditions similar to those which will exist during actual placement.
3. Mock-up will be used to judge workmanship, concrete substrate preparation, operation of equipment, material application, color selection and shine level.
4. Allow 24 hours for inspection of mock-up before proceeding with work
5. When accepted, mock-up will demonstrate minimum standard of quality required for this project

**1.05 DELIVERY, STORAGE AND HANDLING**

A. Deliver materials in original containers, with seals unbroken, bearing manufacturer labels indicating brand name and directions for storage.
B. Dispense special concrete finish material from factory and sealed containers.
C. Store containers upright in a cool, dry, well, ventilated place, out of the sun with temperature between 40 and 100 degrees F (4 and 38 degrees C).
D. Protect from freezing.
E. Store away from all other chemicals and potential sources contamination.
F. Keep lights, fire, sparks and heat away from containers.
G. Do not drop containers or slide across sharp objects.
H. Do not stack pallets more than three high.
I. Keep containers tightly closed when not in use.
J. Store and handle materials in accordance with manufacturer's written instructions.

**1.06 PROJECT CONDITIONS**

A. Environmental limitations:

1. Comply with manufacturer's written instructions for substrate temperature

and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting topping performance.

B. Close areas to traffic during floor application and after application, for time period recommended in writing by manufacturer.

C. The completed slab will be covered to prevent damage by the other trades during store completion.

D. Temperature Limitations:

E. Do not apply when surface and air temperature are below 40 degrees F or above 95 degrees F unless otherwise indicated by manufacturer's written instructions.

F. Do not apply when surface and air temperatures are not expected to remain above 40 degrees F for a minimum of 8 hours after application, unless otherwise indicated by manufacturer's written instructions.

G. Do not apply under windy conditions such that the concrete surface treatment may be blown to surfaces not intended.

H. Do not apply to frozen substrate. Allow adequate time for substrate to thaw, if freezing conditions exist before application.

I. Do not apply earlier than 24 hours after rain or if rain is predicted for a period of 8 hours after application, unless otherwise indicated by manufacturer's written instructions.

J. Temporary Lighting: Minimum 200 W light source, placed 8 feet (2.5 m) above horizontal concrete surface, for each 425 square feet (40 sq m) of concrete being finished.

K. Temporary Heat: Ambient temperature of 50 degrees F (10 degrees C) minimum.

L. Ventilation: Provide ventilation during coating evaporation stage in confined or enclosed areas in accordance with manufacturer's instructions.

**1.07 WARRANTY**

A. Project Warranty: Refer to Contract Conditions for project warranty provisions.

B. Manufacturer's Warranty: Submit for owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and does not limit, other rights Owner may have under Contract Documents

**PART 2 – PRODUCTS**

**2.01 MATERIALS AND MANUFACTURERS**

A. RetroPel: Advanced Floor Products, RetroPlate Systems

1. Contact: P O Box 80533, Provo, UT 84605, Telephone: (800)998-5664; Deke Rife, (402)598-0801, deke@retroplatesystem.com

Factory Trained aand Certified Applicator: For an approved applicator contact:
Advanced Floor Procucts, Deke Rife (402)598-0801
deke@retroplatesystem.com

1. Only approved Retro Plate Certified Trained applicators allowed.

**2.02 RELATED MATERIALS**

A. Water:

1. Potable

**PART 3- EXECUTION**

**3.01 SURFACE CONDITIONS:**

A. Examine substrate, with installer present, for conditions affecting performance of finish. Correct conditions detrimental to timely and proper work. Do not proceed until unsatisfactory conditions are corrected.

B. Verify that base slab meet finish and surface profile requirements in Division 3 Section "Cast-In-Place Concrete," and Project Conditions above.

C. Prior to application, verify that floor surfaces are free of construction latents.

D. Obtain and follow manufacturer's instructions for examination and testing of substrates.

E. Verify by examination that masonry and concrete surfaces are acceptable to receive the specified products. Notify the Architect if surfaces are not acceptable to receive the specified products.

F. Preparation

G. Clean dirt, dust, oil, grease and other contaminants from surfaces that interfere with penetration or performance of specified product. Use appropriate concrete cleaners approved by the concrete surface treatment manufacturer where necessary. Rinse thoroughly using pressure water spray to remove cleaner residues. Allow surfaces to dry completely before application of product.

H. Repair, patch and fill cracks, voids, defects and damaged areas in surface as approved by the Architect. Allow repair materials to cure completely before application of product.

I. Variations in substrate texture and color will affect final appearance and should be corrected prior to application of sealer/hardener system and the polishing steps.

J. Protect surrounding areas prior to application. If accidentally misapplied to adjacent surfaces, flush with water immediately before material dries.

K. Avoid contact in areas not to be treated. Avoid contact with metal, glass and painted surfaces.

L. Seal open joints in accordance with Section 07 90 00 - Joint Protection.

M. Apply specified sealants and caulking and allow complete curing before application of Liquid Hardener.

N. Apply products to substrates in accordance with manufacturer's instructions, and application procedures. Confirm instructions on current Product Data Sheet that can be found on manufacturers website, www.retroplatesystem.com

O. Apply to clean, dry, and properly prepared surfaces approved by the Architect.

P. Clean surface with an auto-scrubber using recommended Crete Clean Plus to remove all surface dust and debris before grinding or polishing.

Q. Remove and dispose of all waste from the process of grinding, polishing, either dry or wet and cleaning in accordance with all environmental regulations.

R. After initial grind, move up in grind levels in two perpendicular crossing passes without skipping level until one level below finish level.

S. Apply RetroPel as recommended by the manufacturer, estimated coverage to be 250 square feet per gallon. Actual coverage rate is to be determined by slab surface. Apply as per manufactures instructions

T. Do not dilute or alter products. Apply as packaged.

U. Do not apply to painted surfaces.

**3.02 EQUIPMENT:**

A. Generally the grinding machines must be adequate for the size of the job.

1. Initial grinding should be done with an Eagle Solutions Propane Powered grinder/polisher with Planetary/Counter rotating concrete grinding heads. Grinders will be 1100 lbs with 700 lbs of head weight. It gives the best preliminary scratch pattern needed for a good finished sheen.

**B. SCOPE OF WORK**

The following Advanced Ashford process must be used. An Eagle Solutions concrete grinding machine with Planetary Heads/counter rotating must be used. The remaining process follows: All grinding will be done wet, to allow for the most uniform scratch patterns

1. No sooner than 28 days after the slab is poured, can work be started
2. Clean floor with floor buffer
3. Wet grind floor with 400 grit resin bonded diamonds
4. Apply RetroPel to the floor as recommended by manufacturer. 2 coats may be needed

Edges: Edge detail work needs to performed with an eagle Solution SP-13 Edge Grinder using all the same steps and diamond tooling as listed above.

**END OF SPECIFICATION**

SECTION 03390

CONCRETE CURING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes initial and final curing of horizontal and vertical concrete surfaces.

B. Related Sections:
1. Section 03300 - Cast-In-Place Concrete.
2. Section 03350 - Concrete Finishing.

1.2 REFERENCES

A. American Concrete Institute:
1. ACI 301 - Specifications for Structural Concrete.
2. ACI 302.1 - Guide for Concrete Floor and Slab Construction.
3. ACI 308.1 - Standard Specification for Curing Concrete.
4. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:
1. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
2. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
3. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
4. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on curing compounds.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301 ACI 302.1 ACI 318.

PART 2 PRODUCTS

2.1 MATERIALS

A. Membrane Curing Compound Type 1

B. Water: Potable, not detrimental to concrete.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify substrate surfaces are ready to be cured.

### 3.2 INSTALLATION - HORIZONTAL SURFACES

A. Cure concrete in accordance with ACI 308.1.

B. Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 4 days.

****** [OR] ******

C. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

****** [OR] ******

D. Absorptive Mat: Spread cotton fabric over floor slab areas. Spray with water until mats are saturated, and maintain in saturated condition for 7 days.

****** [OR] ******

E. Absorptive Mat: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place for 7 days.

END OF SECTION

# SECTION 03600

# GROUT

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
1. Portland cement grout.
2. Rapid curing epoxy grout.
3. Non-shrink cementitious grout.

B. Related Sections:
1. Section 03300 - Cast-in-Place Concrete.

### 1.2 REFERENCES

A. American Concrete Institute:
1. ACI 301 - Specifications for Structural Concrete.
2. ACI 318 - Building Code Requirements for Structural Concrete.

B. American Society of Testing and Materials:
1. ASTM C33 - Standard Specification for Concrete Aggregates.
2. ASTM C40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.
3. ASTM C150 - Standard Specification for Portland Cement.
4. ASTM C191 - Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
5. ASTM C307 - Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings.
6. ASTM C531 - Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
7. ASTM C579 - Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, monolithic Surfacings and Polymer Concretes.
8. ASTM C827 - Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures.

C. U. S. Army Corps of Engineers Concrete Research Division (CRD):
1. CRD C621 - Non-Shrink Grout.

PART 2 PRODUCTS

2.1 PORTLAND CEMENT GROUT MATERIALS

A. Portland Cement: ASTM C150, Type I and II.

B. Water:
1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
a. Corrosion of steel.
b. Volume change increasing shrinkage cracking.
c. Efflorescence.
d. Excess air entraining.

C. Fine Aggregate:
1. Washed natural sand.
2. Gradation in accordance with ASTM C33 and represented by smooth granulometric curve within required limits.
3. Free from injurious amounts of organic impurities as determined by ASTM C40.

D. Mix:
1. Portland cement, sand and water. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 RAPID CURING EPOXY GROUT

A. Rapid Curing Epoxy Grout: High strength, three component epoxy grout formulated with thermosetting resins and inert fillers. Rapid-curing, high adhesion, and resistant to ordinary chemicals, acids and alkalies.

| | | |
|---|---|---|
| Compressive Strength | ASTM C579 | 12,000 psi at 7 days |
| Tensile Strength | ASTM C307 | 2,000 psi minimum |
| Coefficient of Expansion | ASTM C531 | 30x10-6 in per degree F |
| Shrinkage | ASTM C827 | None |

2.3 NON-SHRINK CEMENTITIOUS GROUT

A. Properties: Certified to maintain initial placement volume or expand after set and meet the following minimum properties when tested in accordance with CRD-C621, for Type D non-shrink grout:

| Property | Test | Time | Result |
|---|---|---|---|
| Setting Time | ASTM C191 | Initial | 2 hours (Approx) |
| | | Final | 3 hours (Approx) |
| Expansion | | | 0.10% - 0.4% Maximum |

| | | | |
|---|---|---|---|
| Compressive Strength | CRD-C621 | 1 day | 4,000 psi |
| | | 7 days | 7,000 psi |
| | | 28 days | 10,000 psi to 10,800 psi |

2.4 FORMWORK

A. Refer to Section 03100 for formwork requirements.

2.5 CURING

A. Prevent rapid loss of water from grout during first 48 hours by use of approved membrane curing compound or with use of wet burlap method.

PART 3 EXECUTION

3.1 PREPARATION

A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.

B. Rough concrete lightly, but not enough to interfere with placement of grout.

C. Remove foreign materials from metal surfaces in contact with grout.

D. Align, level and maintain final positioning of components to be grouted.

E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.

3.2 MIXING

A. Portland Cement Grout:
1. Use proportions of 2 parts sand and 1 part cement, measured by volume.
2. Prepare grout with water to obtain consistency to permit placing and packing.
3. Mix water and grout in two steps; pre-mix using approximately 2/3 of water;after partial mixing, add remaining water to bring mix to desired placement consistency and continue mixing 2 to 3 minutes.
4. Mix only quantities of grout capable of being placed within 30 minutes after mixing.
5. Do not add additional water after grout has been mixed.
6. Capable of developing minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.

****** [OR] ******

## 3.3 PLACING GROUT

A. Place grout material quickly and continuously.

B. Do not use pneumatic-pressure or dry-packing methods.

C. Apply grout from one side only to avoid entrapping air.

D. Do not vibrate placed grout mixture, or permit placement when area is being vibrated by nearby equipment.

E. Thoroughly compact final installation and eliminate air pockets.

F. Do not remove leveling shims for at least 48 hours after grout has been placed.

## 3.4 CURING

A. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. After grout has attained its initial set, keep damp for minimum of 3 days.

## 3.5 FIELD QUALITY CONTROL

A. Submit proposed mix design of each class of grout to inspection and testing firm for review prior to commencement of Work.

B. Tests of grout components may be performed to ensure conformance with specified requirements.

END OF SECTION

SECTION 04065

MASONRY MORTAR AND GROUT

PART 1 GENERAL

1.1 SUMMARY

A. Section includes mortar and grout for masonry.

B. Related Sections:
1. Section 04810 - Unit Masonry Assemblies: Installation of mortar and grout.
2. Section 04820 - Reinforced Unit Masonry Assemblies: Installation of mortar and grout.

1.2 REFERENCES

A. American Concrete Institute:
1. ACI 530 - Building Code Requirements for Masonry Structures.
2. ACI 530.1 - Specifications for Masonry Structures.

B. ASTM International:
1. ASTM C5 - Standard Specification for Quicklime for Structural Purposes.
2. ASTM C91 - Standard Specification for Masonry Cement.
3. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
4. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
5. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
6. ASTM C150 - Standard Specification for Portland Cement.
7. ASTM C199 - Standard Test Method for Pier Test for Refractory Mortars.
8. ASTM C206 - Standard Specification for Finishing Hydrated Lime.
9. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
10. ASTM C387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
11. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
12. ASTM C476 - Standard Specification for Grout for Masonry.
13. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
14. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
15. ASTM C1019 - Standard Test Method for Sampling and Testing Grout.
16. ASTM C1142 - Standard Specification for Extended Life Mortar for Unit Masonry.
17. ASTM C1314 - Standard Test Method for Constructing and Testing Masonry Prisms Used to Determine Compliance with Specified Compressive Strength of Masonry.

18. ASTM C1329 - Standard Specification for Mortar Cement.
19. ASTM C1357 - Standard Test Method for Evaluating Masonry Bond Strength.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Design Data: Submit design mix when Property specification of ASTM C270 is to be used, required environmental conditions, and admixture limitations.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 and ACI 530.1.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements.

B. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.

C. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Portland Cement: ASTM C150, Type I

B. Calcium chloride is not permitted.

2.2 MIXES

A. Mortar Mixes:
1. Extended Life Mortar: ASTM C1142, Type RS

B. Mortar Mixing:
1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
2. Achieve uniformly damp sand immediately before mixing process.
3. Re-temper only within two hours of mixing.

C. Grout Mixes:
   1. Grout for Non-Structural Masonry: 3,000 psi strength at 28 days; 8-11 inches slump; mixed in accordance with ASTM C476 grout.
   2. Grout for Structural Masonry: 3,000 psi strength at 28 days; 8-11 inches slump; mixed in accordance with ASTM C476 grout.
   3. Application:
      a. Coarse Grout: For grouting spaces with minimum 4 inches dimension in every direction.
      b. Fine Grout: For grouting other spaces.

D. Grout Mixing:
   1. Mix grout in accordance with ASTM C94/C94M, modified to use ingredients complying with ASTM C476.
   2. Add admixtures; mix uniformly.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Request inspection of spaces to be grouted.

### 3.2 INSTALLATION

A. Install mortar and grout in accordance with ACI 530.1 Specifications for Masonry Structures.

### 3.3 FIELD QUALITY CONTROL

A. Establishing Mortar Mix: In accordance with ASTM C270.

B. Testing Frequency: One set of specified tests for every 5,000 sf of completed wall area.

C. Testing of Mortar Mix: In accordance with ASTM C780 for aggregate ratio and water content, air content, consistency, and compressive strength.

D. Testing of Grout Mix: In accordance with ASTM C1019 for compressive strength, and in accordance with ASTM C143/C143M for slump.

E. Test compressive strength of mortar and masonry to ASTM C1314; test in accordance with masonry unit sections specified.

END OF SECTION

**SECTION 04210**

**ARCHITECTURAL BRICK**

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

A. Face Brick
B. Hollow Brick
C. Thin Brick

### 1.2 RELATED SECTIONS

A. Section 04060 – Masonry Mortar
B. Section 04070 – Masonry Grout
C. Section 04080 – Masonry Reinforcement Systems
D. Section 04090 – Masonry Accessories
E. Section 04810 – Unit Masonry Assemblies
F. Section 05400 – Cold-Formed Metal Framing: Structural wall backing
G. Section 05500 – Metal Fabrications: Execution requirements for loose steel lintels and fabricated steel items for placement in this section.
H. Section 06112 – Framing and Sheathing: Structural wall backing
I. Section 07260 – Vapor Retarders: Vapor retarder membrane placed on interior face of wall insulation.
J. Section 07270 – Air Barriers: Air barrier placed on interior face of wall insulation.
K. Section 07620 – Sheet Metal Flashing and Trim: Product requirements for reglets for flashings for placement by this section.
L. Section 07650 – Flexible Flashing: Product requirements for flexible flashings for placement by this section.
M. Section 07900 – Joint Sealers: Rod and sealant at control and expansion joints.

### 1.3 ALLOWANCES

A. Allowances: Include under provisions of Section 01200 Price and Payment Procedures: Allowances. Allowance includes furnishing face brick, hollow brick and thin brick units. Installation is included in this section and is part of Contract Sum/Price.

### 1.4 REFERENCES

A. ASTM C-62 – Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale).

### 1.5 SUBMITTALS

A. Submit under provisions of Section 01300.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
    1. Preparation instructions and recommendations.
    2. Storage and handling requirements and recommendations.
    3. Installation methods.
D. Selection Samples: For each finish product specified, two complete sets of color brick representing manufacturer's full range of available colors and patterns.
E. Verification Samples: For each product specified, two samples of four brick each, representing actual product, color, and texture.
F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

### 1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.

B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Construct sample panel at location indicated or directed, and as follows:
   a. Size: 6 feet wide x 8 feet high (1.2m x 2.4m).
   b. Include all unit types and sizes to be used, and mortar joint treatment.
   c. Obtain Architect's acceptance of sample panel before beginning construction activities of this section.
   d. Do not remove sample panel until construction activities of this section have been accepted by Architect.

## 1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Deliver products of this section on pallets, with individual faces protected; keep dry.

## 1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

# PART 2PRODUCTS

## 2.1 MANUFACTURERS

A. Acceptable Manufacturer: Old Texas Brick, which is located at: 8510 South Cage Blvd; Pharr, TX 78577; Tel: (956)781-2120; Fax: (956)781-2172 Email: request info (sales@oldtexasbrick.com) ; Web: www.oldtexasbrick.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

## 2.2 ARCHITECTURAL BRICK

A. Regional Materials: Provide materials that are regionally, extracted, processed and manufactured within a radius of 500 miles from Project.

B. Provide brick similar in texture, color and physical properties to those available for inspection at the Architect's office and/or as supplied on the approval sample panel.

C. Shapes: Provide special shapes as required.

D. All brick supplied shall be pre-blended by the manufacturer. http://www.brick.com/md/index.htm

## 2.3 FACE BRICK

A. Face Brick ASTM C 62 Grade: SW

1. Normal Size: 2-1/4 inches deep, 5 inches high, 10 inches long.
   a. Color/Texture: full color range offered by supplier to be selected by Architect
2. Oversized: 2-1/4 inches Deep, 8 inches high, 16 inches long.
   a. Color/Texture: full color range offered by supplier to be selected by Architect

## 2.4 SPECIAL SHAPES

A. Provide special shapes as indicated on the Drawings.

B. Special Brick Shapes include

# PART 3EXECUTION

## 3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify field conditions are acceptable and are ready to receive work.
C. Verify built-in items are in proper location, and ready for roughing into masonry work.
D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding

**3.2 PREPARATION**

A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Furnish temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent support.

**3.3 INSTALLATION**

A. Install architectural brick as specified on Section 04810 Unit Masonry Assemblies.
B. Install architectural brick in accordance with manufacturer's instructions.
C. Maintain masonry courses to uniform dimensions. Form bed and head joints of uniform thickness.
D. Lay masonry in bond pattern or as otherwise indicated on Drawings.
E. Lay masonry with full head and bed joints.
F. Where fresh mortar joins partially set mortar, remove loose brick and mortar, and lightly wet exposed surface of set masonry.
G. When adjustment is necessary to be made after mortar begins to harden, remove hardened mortar and replace with fresh mortar.
H. Joint Profile: Tool mortar joints to a concave appearance.
I. Joint Profile: Tool mortar joints to a concave V-shaped appearance.
J. Joint Profile: Tool mortar joints to a concave grapevine appearance.
K. Tool exposed joints when "thumb-print" hard.
L. Flush cut all joints not tooled.
M. When pointing, rake mortar joints to a depth of not less than 1/2 inch (12mm). Fill solidly with pointing mortar in 1/4 inch layers. Tool joints.

**3.4 FLASHING**

A. Provide flashing embedded in masonry as specified in Section 07620 Sheet Metal Flashing and Trim or Section 07650 Flexible Flashing.
B. Clean surface of masonry from projections, which might puncture flashing.
C. Place through-wall flashing on bed of mortar.
D. Cover flashing with mortar on brick shelf. Lay brick dry on shelf angles and lintels.
E. Lap flashing a minimum of 6 inches (150mm).
F. Leave flashing projecting from face of wall approximately 1 inch (25mm). Flashing shall be cut back to the face of the wall after inspection.

**3.5 WEEPHOLES**

A. Provide weep holes in head joints of the first brick course immediately above flashing by placing weeps no more than 24 inches (610mm) on center horizontally.
B. Keep cavity free from mortar.

**3.6 EXPANSION JOINTS**

A. Keep clean from all mortar and debris.
B. Locate as shown on drawing.
C. Install backer rod.
D. Install sealant. Prime surfaces if necessary.

**3.7 CLEANING**

A. Cut out all defective mortar joints and holes in exposed masonry and repoint with new mortar.
B. Remove excess mortar and mortar smears as work progresses.

C. All cleaning practices and product used shall be in accordance with cleaning products manufacturer's printed instructions.
D. Use non-metallic tools in cleaning operations.

**3.8 PROTECTION**

A. Protect installed products until completion of project.
B. Protect exposed external corners subject to damage.
C. Protect base of walls from mud and mortar splatter.
D. Protect masonry and other items built into masonry walls from mortar droppings and staining caused by mortar.
E. Protect tops of masonry work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when work is not in progress.
F. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 04820

REINFORCED UNIT MASONRY ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes concrete masonry units, reinforcement, anchorage, and accessories.

B. Related Sections:
1. Section 04065 - Masonry Mortar and Grout: Mortar and grout.

1.2 REFERENCES

A. American Concrete Institute:
1. ACI 530 - Building Code Requirements for Masonry Structures.
2. ACI 530.1 - Specifications for Masonry Structures.

B. ASTM International:
1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
2. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
3. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
4. ASTM A580/A580M - Standard Specification for Stainless Steel Wire.
5. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
6. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
7. ASTM A951 - Standard Specification for Masonry Joint Reinforcement.
8. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.
9. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
10. ASTM C27 - Standard Classification of Fireclay and High-Alumina Refractory Brick.
11. ASTM C34 - Standard Specification for Structural Clay Load-Bearing Wall Tile.
12. ASTM C55 - Standard Specification for Concrete Brick.
13. ASTM C56 - Standard Specification for Structural Clay Non-Load-Bearing Tile.
14. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale).
15. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.

16. ASTM C73 - Standard Specification for Calcium Silicate Face Brick (Sand-Lime Brick).
17. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.
18. ASTM C126 - Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
19. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units.
20. ASTM C140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units.
21. ASTM C212 - Standard Specification for Structural Clay Facing Tile.
22. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).
23. ASTM C315 - Standard Specification for Clay Flue Linings.
24. ASTM C530 - Standard Specification for Structural Clay Non-Loadbearing Screen Tile.
25. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
26. ASTM C652 - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale).
27. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units.
28. ASTM C1261 - Standard Specification for Firebox Brick for Residential Fireplaces.
29. ASTM C1283 - Standard Practice for Installing Clay Flue Lining.
30. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
31. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials.
32. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

C. National Fire Protection Association:
   1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

D. Underwriters Laboratories Inc.:
   1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

1.3 PERFORMANCE REQUIREMENTS

A. Concrete Masonry Compressive Strength (f'm): 2,000 psi;
   1. Concrete Masonry Units: 1900 psi minimum net area compressive strength.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Shop Drawings: Indicate bars sizes, spacings, locations, reinforcement quantities, bending and cutting schedules, supporting and spacing devices for reinforcement.

C. Product Data:
1. Submit data for masonry units and fabricated wire reinforcement.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 530 and ACI 530.1.

1.6 QUALIFICATIONS

A. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements.

B. Cold Weather Requirements: In accordance with ACI 530.1 when ambient temperature or temperature of masonry units is less than 40 degrees F.

C. Hot Weather Requirements: In accordance with ACI 530.1 when ambient temperature is greater than 100 degrees F or ambient temperature is greater than 90 degrees F with wind velocity greater than 8 mph.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Hollow Load Bearing Concrete Masonry Units (CMU): ASTM C90; normal weight.

2.2 ACCESSORIES

A. Single Wythe Joint Reinforcement: ASTM A951; ladder type; 0.148 inch diameter side rods with 0.148 inch diameter cross ties.

B. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars.

C. Anchor Rods: ASTM A307; Grade C; J-shaped or L-shaped; complete with washers and heavy hex nuts; sized for minimum 15 inch embedment.
1. Hot-Dipped Galvanizing: ASTM A153/A153M.
2. Mechanical Galvanizing: ASTM B695; Class 55.

D. Mortar and Grout: As specified in Section 04065.

E. Joint Filler: Closed cell rubber; oversized 50 percent to joint width; self expanding.

2.3 SOURCE QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing, inspection and analysis requirements.

B. Test brick efflorescence in accordance with ASTM C67. Brick rated greater than "slightly effloresced" is not acceptable.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify field conditions are acceptable and are ready to receive work.

C. Verify items provided by other sections of work are properly sized and located.

D. Verify built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION

A. Direct and coordinate placement of metal anchors supplied to other Sections.

B. Furnish temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent support.

C. Wet clay and shale brick before laying when initial rate of absorption is greater than 30 grams when tested in accordance with ASTM C67.

3.3 INSTALLATION

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.

C. Coursing of Concrete Masonry Units:
1. Bond: Running.
2. Coursing: One unit and one mortar joint to equal 8 inches.
3. Mortar Joints: Concave.

D. Placing And Bonding:
1. Lay solid masonry units in full bed of mortar, with full head joints.
2. Lay hollow masonry units with face shell bedding on head and bed joints.

3. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
4. Remove excess mortar as Work progresses.
5. Interlock intersections and external corners.
6. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
7. Perform job site cutting of masonry units with proper tools to assure straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
8. Isolate masonry from vertical structural framing members with movement joint .
9. Isolate top of masonry from horizontal structural framing members and slabs or decks.

E. Joint Reinforcement And Anchorage:
1. Install horizontal joint reinforcement 16 inches oc.
2. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
3. Place joint reinforcement continuous in first and second joint below top of walls.
4. Lap joint reinforcement ends minimum 6 inches.
5. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
6. Embed anchors embedded in concrete attached to structural steel members. Embed anchorages in every sixth brick.

F. Lintels:
1. Install precast concrete lintels over openings.
2. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled or indicated.
3. Openings Up To 42 inches Wide: Reinforce openings as indicated on Drawings.
4. Openings From 42 inches Up To 78 inches Wide: Reinforce openings as indicated on Drawings.
5. Openings Over 78 inches: Reinforce openings as indicated on Drawings.
6. Do not splice reinforcing bars.
7. Support and secure reinforcing bars from displacement.
8. Place and consolidate grout fill without displacing reinforcing.
9. Allow masonry lintels to attain specified strength before removing temporary supports.
10. Maintain minimum 8 inches bearing on each side of opening.

G. Grouted Components:
1. Reinforce bond beam with 1, No. 5 bar.
2. Reinforce pilaster with 1, No. 6 bar in each cell.
3. Lap splices bar diameters required by code.
4. Support and secure reinforcing bars from displacement.
5. Place and consolidate grout fill without displacing reinforcing.
6. At bearing locations, fill masonry cores with grout for minimum 12 inches either side of opening.

H. Reinforced Masonry:
1. Lay masonry units with cells vertically aligned and cavities between wythes clear of mortar and unobstructed.
2. Place reinforcing, reinforcement bars, and grout as indicated on Drawings.
3. Splice reinforcement in accordance with Section 03200.
4. Support and secure reinforcement from displacement.
5. Place and consolidate grout fill without displacing reinforcing.
6. Place grout in accordance with ACI 530.1 Specification for Masonry Structures.

I. Control And Expansion Joints:
1. Install control and expansion joints at the following maximum spacings, unless otherwise indicated on Drawings:
   a. Exterior Walls: 20 feet on center and within 10 feet on one side of each interior and exterior corner.
   b. Interior Walls: 30 feet on center.
   c. At changes in wall height.
2. Do not continue horizontal joint reinforcement through control and expansion joints.
3. Install preformed control joint device in continuous lengths. Seal butt and corner joints.
4. Size control joint in accordance with Section 07900 for sealant performance.
5. Form expansion joint by omitting mortar and cutting unit to form open space.

J. Cutting And Fitting:
1. Obtain Architect/Engineer's approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.4 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation From Alignment of Pilasters: 1/4 inch.

C. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

D. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

E. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

F. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

G. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.

H. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

I. Maximum Variation for Steel Reinforcement:
   1. Install reinforcement within the tolerances specified in ACI 530.1 for foundation walls.
   2. Plus or minus 1/2 inch when distance from centerline of steel to opposite face of masonry is 8 inches or less.
   3. Plus or minus 1 inch when distance is between 8 and 24 inches.
   4. Plus or minus 1-1/4 inch when distance is greater than 24 inches.
   5. Plus or minus 2 inches from location along face of wall.

3.5 FIELD QUALITY CONTROL

A. Concrete Masonry Units: Test each type in accordance with ASTM C140.

3.6 CLEANING

A. Section 01700 - Execution Requirements: Final cleaning.

B. Remove excess mortar and mortar smears as work progresses.

C. Replace defective mortar. Match adjacent work.

D. Clean soiled surfaces with cleaning solution.

E. Use non-metallic tools in cleaning operations.

3.7 PROTECTION OF FINISHED WORK

A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.

B. Protect exposed external corners subject to damage.

C. Protect base of walls from mud and mortar splatter.

D. Protect masonry and other items built into masonry walls from mortar droppings and staining caused by mortar.

E. Protect tops of masonry work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when work is not in progress.

END OF SECTION

# SECTION 05120

# STRUCTURAL STEEL

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
1. Structural shapes.
2. Channels and angles.
3. Hollow structural sections.
4. Structural pipe.
5. Structural plates and bars.
6. Fasteners, connectors, and anchors.
7. Fasteners, connectors, and anchors.
8. Grout.

B. Related Sections:
1. Section 03600 - Grout: Grout for setting base plates.
2. Section 05210 - Steel Joists.
3. Section 05312 - Steel Roof Deck
4. Section 05500 – Metal Fabrications: Steel Fabrications affecting structural steel work.

### 1.2 REFERENCES

A. American Institute of Steel Construction:
1. AISC Code of Standard Practice for Steel Buildings and Bridges.
2. AISC Load and Resistance Factor Design (LRFD) Specification for Structural Steel Buildings.
3. AISC Load and Resistance Factor Design Specification for Single-Angle Members.
4. AISC Seismic Provisions for Structural Steel Buildings.
5. AISC Specification for Allowable Stress Design of Single-Angle Members.
6. AISC Specification for the Design of Steel Hollow Structural Sections.
7. AISC Specification for Structural Steel Buildings Allowable Stress Design, and Plastic Design.

B. ASTM International:
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
3. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished.

4. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
5. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
6. ASTM A193/A193M - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
7. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
8. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
9. ASTM A354 - Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners.
10. ASTM A449 - Standard Specification for Quenched and Tempered Steel Bolts and Studs.
11. ASTM A490 - Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength.
12. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
13. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
14. ASTM A514/A514M - Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding.
15. ASTM A529/A529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality.
16. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
17. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
18. ASTM A588/A588M - Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4-in. (100-mm) Thick.
19. ASTM A618 - Standard Specification for Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing.
20. ASTM A786/A786M - Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates.
21. ASTM A847 - Standard Specification for Cold-Formed Welded and Seamless High Strength, Low Alloy Structural Tubing with Improved Atmospheric Corrosion Resistance.
22. ASTM A852/A852M - Standard Specification for Quenched and Tempered Low-Alloy Structural Steel Plate with 70 ksi (485 MPa) Minimum Yield Strength to 4 in. (100 mm) Thick.
23. ASTM A913/A913M - Standard Specification for High-Strength Low-Alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-Tempering Process (QST).
24. ASTM A992/A992M - Standard Specification for Structural Steel Shapes.

25. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
26. ASTM E94 - Standard Guide for Radiographic Examination.
27. ASTM E164 - Standard Practice for Ultrasonic Contact Examination of Weldments.
28. ASTM E165 - Standard Test Method for Liquid Penetrant Examination.
29. ASTM E709 - Standard Guide for Magnetic Particle Examination.
30. ASTM F436 - Standard Specification for Hardened Steel Washers.
31. ASTM F959 - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners.
32. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
33. ASTM F1852 - Standard Specification for Twist Off Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

C. American Welding Society:
1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
2. AWS D1.1 - Structural Welding Code - Steel.

D. Research Council on Structural Connections:
1. RCSC - Specification for Structural Joints Using ASTM A325 or A490 Bolts.

E. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.
2. SSPC Paint 15 - Steel Joist Shop Paint.
3. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).
4. SSPC SP 3 - Power Tool Cleaning.
5. SSPC SP 6 - Commercial Blast Cleaning.
6. SSPC SP 10 - Near-White Blast Cleaning.

## 1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings:
1. Indicate profiles, sizes, spacing, and locations of structural members, openings, attachments, and fasteners.
2. Connections.
3. Cambers
4. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.

C. Mill Test Reports: Submit indicating structural strength and destructive and non-destructive test analysis.

D. Manufacturer's Mill Certificate: Certify products meet or exceed specified requirements.

E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualifications within previous 12 months.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. AISC Code of Standard Practice for Steel Buildings and Bridges.
2. AISC Code of Standard Practice for Steel Buildings and Bridges. Section 10.
3. AISC Seismic Provisions for Structural Steel Buildings.
4. AISC Specification for Structural Steel Buildings Allowable Stress Design, and Plastic Design.
5. AISC Load and Resistance Factor Design (LRFD) Specification for Structural Steel Buildings.
6. AISC Specification for the Design of Steel Hollow Structural Sections.
7. AISC Specification for Allowable Stress Design of Single-Angle Members.
8. AISC Load and Resistance Factor Design Specification for Single-Angle Members.
9. RCSC Specification for Structural Joints Using ASTM A 325 or A 490 Bolts.
10. ASCE 19.

1.5 COORDINATION

A. Section {01300 - Administrative Requirements}: Requirements for coordination.

PART 2 PRODUCTS

2.1 STRUCTURAL STEEL

A. Structural W-Shapes: ASTM A992/A992M; Grade 50

B. Structural M-Shapes: ASTM A36/A36M; Grade 50

C. Structural T-Shapes: Cut from structural W-shapes.

D. Channels and Angles: ASTM A36/A36M.

E. Round Hollow Structural Sections: ASTM A500, Grade B.

F. Square and Rectangular Hollow Structural Sections: ASTM A500, Grade B.

G. Structural Plates and Bars: ASTM A36/A36M.

2.2 FASTENERS, CONNECTORS, AND ANCHORS

A. Bolts: ASTM A307; Grade A or B.
1. Finish: Unfinished

B. High Strength Bolts: ASTM A325; Type 1 or ASTM A490; Type 1.
1. Finish: Unfinished

C. Nuts: ASTM A563 heavy hex type.
1. Finish: Unfinished

D. Washers: ASTM F436; Type 1, circular
1. Finish: Unfinished

E. Threaded Rods: ASTM A36/A36M; Grade A.
1. Finish: Unfinished

F. Forged Structural Steel Hardware:
1. Clevises and Turnbuckles: ASTM A108; Grade 1085.
2. Eye Nuts and Eye Bolts: ASTM A108; Grade 1030.
3. Sleeve Nuts: ASTM A108; Grade 1018.
4. Rod Ends, Yoke Ends and Pins, Cotter Pins, and Coupling Nuts: Carbon steel.

2.3 WELDING MATERIALS

A. Welding Materials: AWS D1.1; type required for materials being welded.

2.4 ACCESSORIES

A. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing minimum compressive strength of 7,000 psi at 28 days

B. Shop and Touch-Up Primer: SSPC Paint 15, Type 1, red oxide.

2.5 FABRICATION

A. Continuously seal joined members by continuous welds. Grind exposed welds smooth.

B. Fabricate connections for bolt, nut, and washer connectors.

C. Develop required camber for members.

2.6 FINISH

A. Prepare structural component surfaces in accordance with SSPC SP 3.

B. Shop prime structural steel members.

C. Galvanizing for Structural Steel Members: ASTM A123/A123M; minimum 1.2 oz/sq ft coating thickness; galvanize after fabrication.

D. Galvanizing for Fasteners, Connectors, and Anchors:
1. Hot-Dipped Galvanizing: ASTM A153/A153M.
2. Mechanical Galvanizing: ASTM B695; Class 50 minimum.

2.7 SOURCE QUALITY CONTROL AND TESTS

A. Section 01400 - Quality Requirements: Testing, inspection and analysis requirements.

B. Shop test bolted and welded connections as specified for field quality control tests.

C. When fabricator is approved by authority having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.
1. Specified shop tests are not required for Work performed by approved fabricator.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify bearing surfaces are at correct elevation.

C. Verify anchors rods are set in correct locations and arrangements with correct exposure for steel attachment.

3.2 PREPARATION

A. Furnish templates for installation of anchor rods and embedments in concrete and masonry work.

3.3 ERECTION

A. Allow for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.

B. Field weld components and shear connectors indicated on Drawings.

C. Field connect members with threaded fasteners; tighten to snug tight for bearing type connections.

D. Do not field cut or alter structural members without approval of Architect/Engineer.

E. After erection, touch up welds and abrasions to match shop finishes.

3.4 GROUT INSTALLATION

A. Grout [under base plates in accordance with Section 03600.

B. Shim bearing plates and equipment supports to proper elevation, snug tighten anchor bolts.

C. Fill void under bearing surface with grout. Install and pack grout to remove air pockets.

D. Moist cure grout.

E. Remove forms after grout is set. Trim grout edges to from smooth surface, splayed 45 degrees.

F. Tighten anchor bolts after grout has cured for a minimum of 3 days.

3.5 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

C. Maximum Offset From Alignment: 1/4 inch.

3.6 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Bolted Connections: Inspect in accordance with AISC specifications.
   1. Visually inspect all bolted connections.

2. For Direct Tension Indicators, comply with requirements of ASTM F959. Verify that gaps are less than gaps specified in Table 2.

C. Welding: Inspect welds in accordance with AWS D1.1.
1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
2. Visually inspect all welds.
3. Ultrasonic Inspection: ASTM E164; perform on all full penetration welds.
4. Liquid Penetrant Inspection: ASTM E165.

D. Correct defective bolted connections and welds.

END OF SECTION

# SECTION 05210

# STEEL JOISTS

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
   1. Open web steel joists and shear stud connectors, with bridging, attached seats and anchors.

B. Related Sections:
   1. Section 05120 - Structural Steel: Superstructure framing.
   2. Section 05312 - Steel Roof Deck
   3. Section 05500 - Metal Fabrications: Non-framing steel fabrications attached to joists.

### 1.2 REFERENCES

A. American Institute of Steel Construction:
   1. AISC Seismic Provisions for Structural Steel Buildings.

B. ASTM International:
   1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
   2. ASTM A108 - Standard Specification for Steel Bars, Carbon, Cold Finished, Standard Quality.
   3. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   4. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   5. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
   6. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
   7. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
   8. ASTM F436 - Standard Specification for Hardened Steel Washers.
   9. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.

C. American Welding Society:
   1. AWS D1.1 - Structural Welding Code - Steel.

D. Steel Joist Institute:
   1. SJI K - Standard Specifications for Open Web Steel Joists, K-series.

2. SJI LH/DLH - Standard Specifications for Longspan Steel Joists, LH-Series and Deep Longspan Steel Joists, DLH-Series.
3. SJI JG - Standard Specification for Joist Girders.

E. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.
2. SSPC SP 1 - Solvent Cleaning.
3. SSPC SP 10 - Near-White Blast Cleaning.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Shop Drawings:
1. Indicate standard designations, configuration, sizes, spacing, locations of joists, joist leg extensions.
2. Joist coding, bridging, connections, attachments.
3. Cambers
4. Connection details.

C. Welders' Certificates: Submit manufacturer's certificates, certifying welders employed on the Work, verifying AWS qualification within previous 12 months.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. SJI K, SJI LH/DLH, and SJI JG

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Product storage and handling requirements.

PART 2 PRODUCTS

2.1 MATERIALS

A. Manufacturers:
1. Vulcraft Steel Joist

B. Open Web Joists Members: SJI Type K. LH Longspan. DLH Deep Longspan. Joist Girders.

C. Nuts: ASTM A563 heavy hex type.

D. Washers: ASTM F436; Type 1

E. Structural Steel For Supplementary Framing and Joist Leg Extensions: ASTM A36/A36M.

F. Welding Materials: AWS D1.1; type required for materials being welded.

G. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

2.2 FABRICATION

A. Furnish bottom and top chord extensions as indicated on drawings.

B. Fabricate to achieve end bearing of:
1. 2-1/2 inches on steel.
2. 4 inches on masonry.

C. Drill holes in chords necessary for attachment of wood nailers.

2.3 FINISH

A. Shop prime joists and supplementary framing members. Do not prime surfaces that will be fireproofed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

3.2 ERECTION

A. Erect and bear joists on supports.

B. Allow for erection loads. Install sufficient temporary bracing to maintain framing safe, plumb, and in alignment.

C. Coordinate placement of anchors in concrete or masonry construction for securing bearing plates and angles.

D. After joist alignment and installation of framing, field weld joist seat to bearing plates or angles.

E. Position and field weld joist chord extensions and wall attachments.

F. Frame openings greater than 18 inches with supplementary framing.

G. Do not permit erection of decking until joists are bridged, and secured or until completion of erection and installation of permanent bridging and bracing.

H. Do not field cut or alter structural members without approval of Architect/Engineer.

I. After erection, prime welds, abrasions, and surfaces not shop primed

3.3 ERECTION TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Maximum Variation From Plumb: ¼ inch.

C. Maximum Offset From Alignment:1/4 inch.

3.4 FIELD QUALITY CONTROL

A. Field inspect members, connections, welds, and tightening of high strength bolts in slip-critical connections.

END OF SECTION

# SECTION 05312

# STEEL ROOF DECK

## PART 1 GENERAL

### 1.1 SUMMARY

A. Section Includes:
   1. Steel roof deck and accessories.
   2. Bearing plates and angles.

B. Related Sections:
   1. Section 03300 - Cast-in-Place Concrete: Concrete topping over metal roof deck.
   2. Section 05120 - Structural Steel: Support framing for deck openings.
   3. Section 05210 - Steel Joists: Support framing for deck openings.

### 1.2 REFERENCES

A. American Society of Civil Engineers:
   1. ASCE 3 - Standard Practice for the Construction and Inspection of Composite Slabs.

B. ASTM International:
   1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
   2. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
   3. ASTM A924/A924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
   4. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.

C. American Welding Society:
   1. AWS D1.1 - Structural Welding Code - Steel.

D. Steel Deck Institute:
   1. SDI 29 - Design Manual for Composite Decks, Form Decks and Roof Decks.

E. SSPC: The Society for Protective Coatings:
   1. SSPC Paint 15 - Steel Joist Shop Paint.

### 1.3 PERFORMANCE REQUIREMENTS

A. Design metal deck in accordance with SDI 29 Design Manual and ASCE 3.

B. Calculate to structural working stress design and maximum vertical deck deflection of 1/240.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal requirements.

B. Shop Drawings: Indicate deck plan, support locations, Projections, openings and reinforcement, pertinent details, and accessories.

C. Product Data: Submit deck profile characteristics and dimensions, structural properties, and finishes

D. Manufacturer’s Installation Instructions: Submit manufacturer's installation instructions.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ASCE 3 for composite decks.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Product storage and handling requirements.

B. Cut plastic wrap to encourage ventilation.

C. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 PRODUCTS

2.1 MATERIALS

A. Sheet Steel: ASTM A653, Grade 33 Structural Quality; with G115 galvanized coating conforming to ASTM A525.

B. Welding Materials: AWS D1.1.

2.2 FABRICATION

A. Metal Deck: Sheet steel, configured as follows:
1. Span Design: multiple
2. Minimum Metal Thickness Excluding Finish: 22 gage.
3. Minimum Allowable Diaphragm Shear: 250 plf.
4. Nominal Height: 1-1/2 inch
5. Side Joints: lapped

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

### 3.2 INSTALLATION

A. Erect metal deck in accordance with SDI Manual.

B. Bear deck on masonry or concrete support surfaces with 4 inch minimum bearing. Align and level.

C. Bear deck on steel supports with 1-1/2 inch minimum bearing. Align and level.

D. Reinforce steel deck openings from 6 to 18 inches in size with 2 x 2 x 1/4 inch steel angles. Place framing angles perpendicular to flutes;extend minimum two flutes beyond each side of opening and mechanically attach to deck at each flute.

E. Install wet concrete stops at roof edge upturned to top surface of slab to contain wet concrete. Install stops of sufficient strength to remain stationary under wet concrete without distortion.

F. Install sheet steel closures and angle flashings to close openings between deck and walls, columns, and openings.

G. Position roof sump pans with flange bearing on top surface of deck. Fusion weld at each deck flute.

H. Place metal cant strips in position and mechanically attach.

I. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up prime paint.

### 3.3 FIELD QUALITY CONTROL

A. Welding: Inspect welds in accordance with AWS D1.1.

END OF SECTION

## SECTION 06001

## CARPENTRY WORK

### PART 1 GENERAL

**1.01 WORK INCLUDED**

A. Rough carpentry; finish carpentry and cabinetwork. Custom work such as cabinetry and student storage shelving in the classroom is to be clad completely in plastic laminate: colors as selected by Architect. Other areas, such as book storage, are to be exposed wood.

**1.02 QUALITY ASSURANCE**

A. Rough carpentry lumber: Visible grade stamp, of agency certified by National Forest Products Association (NFPA).

B. Fabricate cabinetwork and site made finish carpentry items in accordance with recommendations of Quality Standards of Architectural Woodwork Institute (AWI).

C. All framing and finish lumber shall be kiln-dried. Maximum moisture content for framing lumber shall be 15%, for finish lumber 12% and for board lumber 15%.

**1.03 REFERENCE STANDARDS**

A. MIL-V-13518C Wood preservative: tetrachlorophenol and pentachlorophenol, surface sealing compound.

B. PS 1-Construction and Industrial Plywood.

C. PS 20-American Softwood lumber standard.

D. PS 51-Hardwood and decorative plywood.

E. PS 58-Basic hardwood.

F. NFPA National Forest Products Association National design specification for wood construction

**1.04 SUBMITTALS**

A. Submit shop drawings of cabinets.

B. Submit samples of standard colors and patterns of plastic laminate for Architects selection.

**1.05 DELIVERY, STORAGE AND HANDLING**

A. Do not deliver shop fabricated carpentry items until site conditions are adequate to receive the work. Protect items from weather while in transit.

B. Store indoors, in ventilated areas with a constant minimum temperature of 60 degrees F (16 degrees C), maximum relative humidity of 22 to 55 percent.

### PART 2 PRODUCTS

**2.01 FRAMING LUMBER**

A. Framing, top and sole plates, fir, pine or spruce.

B. Studs: stud grade and better southern yellow pine or stud grade and better Douglas Fir (West Coast) and stud grade and better spruce.

C. Blocking Southern yellow pine or Douglas Fir (West Coast) utility grade.

D. Bolts, nuts, washers, lags pins and screws: medium carbon steel: sized to suit application galvanized for exterior location, high humidity locations and treated wood: plain finish for other interior locations.

E. Fasteners: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.

F. Miscellaneous fasteners:
   1. H-clips, aluminum, TECO or equal.
   2. Hurricane clips, 1 gauge steel, TECO U-grip type A-28 or equal.
   3. Joint hangers, 18 gauge steel, TECO strap ties, 1 3/8" length as required.

G. Preservative treatment
   1. Framing lumber: all framing lumber required to receive a preservative treatment shall be treated in accordance with the specifications of AWPI Standards for softwood lumber. Lumber shall be treated by a pressure method (full or empty cell process) in accordance with AWPI LP-2, LP-3, or LP-
   2. Each piece of lumber shall be labeled with a permanent mark indicating conformance with the applicable AWPI standards.

**2.02 FABRICATION**

A. Fabricate cabinetwork and finish carpentry items in accordance with recommendation of AWI and to extent indicate in schedule located at the end of this section. Shop fabricate items where possible.

B. Fit shelves, and exposed edges with matching hardwood edging. Use full-length pieces only. All shelving units that are not completely clad in plastic laminate shall have plywood backs and sides.

C. Cap exposed plastic laminate edges with material of same finish and pattern

D. Shop assemble cabinetwork and finish carpentry items for delivery to site in sizes easily handled and to ensure passage through building openings.

E. Use exposed fastening devices or nails only when unavoidable.

**2.03 PREPERATION OF FINISH CARPENTRY ITEMS AND CABINETWORK FOR FINISHING**

A. Sand work smooth and set exposed nails. Apply wood filler in exposed nail and screw indention and leave ready to receive site applied finishes on items to receive transparent finishes, use wood filler which matches surrounding surfaces and of types recommended for applied finishes.

B. Paint concealed and semi-concealed surfaces. Brush apply only.

C. Seal internal surfaces of cabinets with 2 coats of shellac. Brush apply only.

D. Preservative treat surfaces in contact with cementious materials.

E. Provide cutouts for plumbing fixtures, inserts, outlet boxes, and other fixtures and figments. Verify locations of cutouts from site dimensions. Seal contact surfaces of cutouts.

**PART 3 EXECUTION**

**3.01 INSTALLATION OF FINISH CARPENTRY ITEMS AND CABINET WORK**

A. Set and secure cabinetwork and finish carpentry items in place, rigid, plumb, and square.

B. Use purpose designed fixture attachments for mounted components.

C. Threaded steel concealed joint fasteners to align and secure adjoining cabinet units and countertops.

D. When necessary to cut and fit on site, make material with ample allowance for cutting. Provide trim for scribing and site cutting.

E. Permanently fix cabinet and counter bases to floor using appropriate angles.

F. Counter-sink semi-concealed anchorage devices used to wall mount components and conceal with solid plugs of species to match surrounding wood. Place flush with surrounding surfaces.

G. Carefully scribe cabinetwork which is against other building materials, leave gaps of 1/32 inch additional overlay trim for this purpose.

H. Install and adjust cabinet hardware to correct operation.

I. Install hardware, fixtures and accessories, provided under other sections for installations. Install items in accordance with manufacturer's recommendations.

J. Ensure that mechanical and electrical items affecting this section of work are properly placed and have been inspected by the Architect/Engineer prior to commencement of installation.

END OF SECTION

**SECTION 06100**

**ROUGH CARPENTRY**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. All rough carpentry items including, but not limited to:
   1. Wood blocking for support of items supported on or recessed into wood framing or requiring wood blocking for support.
   2. Wood cants, nailers, curbs, and other items associated with roofing work.
   3. Miscellaneous framing items and plywood sheathering.

### 1.2 RELATED WORK

A. All Sections of Work supported on or recessed into wood framing or requiring wood blocking for support, such as wall trim, wall cabinets, handrails, lockers, toilet compartments, toilet and bath accessories, markerboards, tackboards, projection screens, fire extinguisher cabinets, etc., as applicable to the Project.

### 1.3 SUBMITTALS

A. Product Data: Manufacturer's data on wood treatment materials.

### 1.4 STANDARDS AND GRADING

A. All lumber used structurally shall be graded and marked with grade and trademark of a lumber grading organization approved by the Architect, except that a certification of grade from such a grading organization may be accepted in lieu of grade and trademarks when approved by Architect. Trademark of manufacturer shall also appear on each piece.

B. Each piece of plywood used structurally shall carry the American Plywood Association trademark. The moisture content of lumber shall not be more than 15 percent.

C. Grading Rules: Conform with all applicable requirements of American Lumber Standards "Simplified Practice Recommendations R-16" and to grading rules of manufacturer's association under whose rules the lumber is produced.

D. Reference Standards: Conform with all requirements.
   1. U.S. Dept. of Commerce Product Standards (PS)
   2. American Plywood Association (APA)
      a. Standards and Construction Guide
   3. American Wood Preserves Association (AWPA)
      a. Standards, and they apply.
   4. Architectural Woodwork Institute (AWI)
      a. "Quality Standards"
   5. National Woodwork Manufacturers' Association (NWMA)
      a. Standards
   6. Western Wood Products Association (WWPA)
      a. Manual

**PART 2 – PRODUCTS**

**2.1 MATERIALS**

A. Lumber:
   1. Treated No. 2, S4S Southern Yellow Pine, #1 kiln dried.
      a. Comply with NWMA Standards
      b. Use for blocking, stripping, grounds, cants and miscellaneous wood items in contact with concrete, roofing, or exposed to the weather.

B. Plywood:
   1. General: Comply with APA Standards.
   2. APA A-D, Group 1 Interior used where appearance of only one side is exposed to view for interior locations. Use for wall liner at MDF/IDF closets and telephone boards in mechanical and telephone rooms where shown or required. 3/4 inch thick unless required or shown otherwise. Paint as scheduled in Section 09900.
   3. Exterior plywood, Group 1, Structural I-CC-EXT-APA rated sheathing. Use where miscellaneous plywood is exposed to concrete, weather, or at roof construction as sheathing.
   4. Fire Retardant Treated Plywood: Refer to Fire Retardant Treatment below. Use when required by building code or noted on drawings.
   5. Underlayment: If shown or required, APA rated Sturdi-floor, exterior grade, tongue and groove edges.

C. Rough Hardware:
   1. Nails, Spikes, and Staples: Galvanized for exterior locations, high humidity locations, and treated wood; plain finish for other interior locations: Size and type to suit applications. Do not use to resist "pull-out" loads.
   2. Bolts, Nuts, Washers, Lags, and Screws: Medium carbon steel; size and type to suit application. Galvanize for exterior locations, high humidity locations, and treated wood. Plain finish for other interior locations.
   3. Fasteners: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry and concrete. Bolts or power activated type for anchorage to steel.

D. Wood Treatment:
   1. Preservative Treatment (Concealed Conditions):
      a. Micronized Copper Quaternary (MCQ): Pressure impregnate preservative to net retention of 0.15 lbs./cu.ft., in plant licensed by manufacturer.
      b. Provide Quality Mark Stamp or end tag identifying third party inspection agency on treated wood for identification.
      c. Fasteners: Metal fasteners in contact with preservative treated wood shall be G-90 galvanized, minimum, or stainless steel in accordance with manufacturer's instructions. No uncoated steel shall come in contact with preservative wood.
      d. ACQ and CCA preservatives not permitted.
      e. Acceptable Manufacturers: Osmose "MicroPro" Smart Sense; or Architect approved equal.

   2. Fire Retardant Treatment:
      a. Lumber shall be pressure-impregnated with non-combustible fire retardant chemicals in accordance with U.L. FRS Fire Hazard



Classification. All lumber must be dried following treatment in

accordance with AWPA Standard C20.

b. Plywood shall be pressure-impregnated with non-combustible fire retardant chemicals in accordance with U.L. FRS Fire Hazard Classification. All Plywood must be dried following treatment in accordance with AWPA Standard C27.

**PART 3 – EXECTUTION**

A. Wood Framing:
1. Framing and blocking shall be accurately cut and fitted true to line and levels, avoiding shims and wedges.
2. Spiking and nailing shall be done using largest size spikes and nail practicable.
3. Unless otherwise shown, use 2 inch by 4 inch wood studs spaced 16 inches o.c. with 4 inch face perpendicular to direction of wall or partition. Provide single bottom plate and double-top plates 2 inches thick by width of studs.
4. Bolt nailers and blocking to steel, masonry or concrete members with bolts or proportionate strength of members attached from each end, except as otherwise noted on plans.
5. Provide blocking, bucks and framing as necessary and for other trades as required.
6. Drill lumber accurately for bolts and fit all bolts with suitable washers.

B. Plywood:
1. Install plywood over framing in accordance with instruction of American Plywood Association Construction Guide Form No. E30C.
2. Install underlayment plywood as shown in accordance with instructions of American Plywood Association. Space panel joints and edges 1/32 inch. Fill and sand panel edge joints, surface roughness, and damaged or open areas. Nail with 4d ring-shank nails spaced at six (6) inches at edges and eight (8) inches in field each way.

**END OF SECTION**

SECTION 06112

Rough Carpentry

PART 1 GENERAL

1.1 SUMMARY

A. Section includes structural floor, wall, and roof framing; built-up structural beams and columns; diaphragm trusses fabricated on site; floor, wall, and roof sheathing; preservative treatment of wood; fire retardant treatment of wood; miscellaneous framing and sheathing.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI A135.4 - Basic Hardboard.
   2. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. American Wood-Preservers' Association:
   1. AWPA C1 - All Timber Products - Preservative Treatment by Pressure Process.
   2. AWPA C20 - Structural Lumber - Fire-Retardant Treatment by Pressure Processes.

C. ASTM International:
   1. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
   2. ASTM C1280 - Standard Specification for Application of Gypsum Sheathing.
   3. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
   4. ASTM D5456 - Standard Specification for Evaluation of Structural Composite Lumber Products.
   5. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials.
   6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   7. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
   8. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

D. National Fire Protection Association:
   1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

E. U. S Department of Commerce National Institute of Standards and Technology:
   1. DOC PS 1 - Construction and Industrial Plywood.
   2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
   3. DOC PS 20 - American Softwood Lumber Standard.

F. National Lumber Grades Authority:
   1. NLGA - Standard Grading Rules for Canadian Lumber.

G. Northeastern Lumber Manufacturers Association:
   1. NELMA - Standard Grading Rules for Northeastern Lumber.

H. The Redwood Inspection Service:
   1. RIS - Standard Specifications for Grades of California Redwood Lumber.

I. Southern Pine Inspection Bureau:
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

J. Underwriters Laboratories Inc.:
   1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

K. West Coast Lumber Inspection Bureau:
   1. WCLIB - Standard Grading Rules for West Coast Lumber.

L. Western Wood Products Association:
   1. WWPA G-5 - Western Lumber Grading Rules.

## 1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Shop Drawings For Site Fabricated Truss Frame: Indicate dimensions, wood species and grades, component profiles, drilled holes, fasteners, connectors, erection details and sequence.

C. Product Data: Submit technical data on insulated sheathing, wood preservative materials, and application instructions.

## 1.4 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
   1. Lumber Grading Agency: Certified by DOC PS 20.
   2. Wood Structural Panel Grading Agency: Certified by EWA - The Engineered Wood Association.
   3. Lumber: DOC PS 20.
   4. Wood Structural Panels: DOC PS 1 or DOC PS 2.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Product storage and handling requirements.

B. Protect trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: American Softwood Lumber Standard DOC PS 20

B. Beam Framing: SPF species, No. 2 grade, 19 percent maximum moisture content.

C. Joist Framing: SPF species, No. 2 grade, 19 percent maximum moisture content.

D. Rafter Framing: SPF species, No. 2 grade, 19 percent maximum moisture content.

2.2 SHEATHING MATERIALS

A. Wood Structural Panel Roof Sheathing: EWA Rated Sheathing, Structural I, Plywood, Span Rating 48/24; Exposure Durability 1 or Exterior

B. Wood Structural Panel Wall Sheathing: EWA Rated Sheathing, Structural I, Plywood, Span Rating 48/24; Exposure Durability 1 or Exterior

C. Wood Structural Panel Floor Sheathing: EWA Rated Sheathing, Structural I, Plywood, Span Rating 48/24

2.3 UNDERLAYMENT MATERIALS

A. Plywood Underlayment: EWA Structural I

2.4 SHEATHING AND UNDERLAYMENT LOCATIONS

A. Sloped Roof Sheathing: 5/8 inch thick, Span Rating 48/24, 48 x 96 inch sized sheets, square edges.

B. Flat Roof Sheathing: 5/8 inch thick, Span Rating 48/24, 48 x 96 inch sized sheets, square edges.

C. Floor Sheathing: 3/4 inch thick, Span Rating 48/24, 48 x 96 inch sized sheets, tongue and groove edges.

## 2.5 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.

B. Structural Framing Connectors: Hot dipped galvanized steel, sized to suit framing conditions, manufactured by Simpson Strong Tie or equivalent.

## 2.6 FACTORY WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): AWPA Treatment C1 using water borne preservative with 0.25 percent retainage.

B. Moisture Content After Treatment:
   1. Lumber: Maximum 19 percent.
   2. Structural Panels: Maximum 15 percent.

# PART 3 EXECUTION

## 3.1 FRAMING

A. Set structural members level and plumb, in correct position.

B. Fasten framing in accordance with applicable code.

C. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.

D. Place horizontal members, crown side up.

E. Construct load bearing framing members full length without splices.

F. Double members at openings over 24 inches wide. Space short studs over and under opening to stud spacing.

G. Construct double joist headers at floor and ceiling openings and under wall stud partitions parallel to floor joists. Frame rigidly into joists.

H. Bridge framing in excess of 8 feet in span at mid-span. Fit solid blocking at ends of members.

I. Coordinate installation of wood decking, wood chord metal joists, glue laminated structural units, prefabricated wood trusses, and wood “I” joists.

3.2 SHEATHING

A. Fasten sheathing in accordance with applicable code.

B. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.

C. Use sheathing clips between sheets between roof framing members.

D. Secure wall sheathing with long dimension parallel to wall studs, with ends over firm bearing.

3.3 FIREBLOCKING AND DRAFTSTOPPING

A. Install fireblocking to cut off concealed draft openings.
1. Concealed Framed Wall and Furred Spaces: Install fireblocking vertically at floor and ceiling levels and horizontally at maximum 10 feet on center.
2. Connections Between Horizontal and Vertical Spaces: Install fireblocking between vertical walls and partitions and the following:
   a. Horizontal floor and roof framing.
   b. Soffits, dropped ceilings, cove ceilings and other horizontal concealed spaces.
3. Stairs: Install fireblocking between stair stringers at top and bottom of each run.

3.4 TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Framing Members: 1/4 inch from indicated position, maximum.

C. Surface Flatness of Floor: 1/4 inch in 10 feet maximum, and 1/2 inch in 30 feet maximum.

END OF SECTION

## SECTION 06114

## WOOD BLOCKING AND CURBING

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

A. Treated (Wolmanized) roof and cants.
B. Fire retardant blocking in wall and roof openings.
C. Wood furring and grounds.
D. Concealed fire retardant wood blocking for support of toilet and bath accessories and cabinets.

#### 1.02 RELATED SECTIONS

A. Section 06410-Custom Casework: Casework.
B. Section 07514-Built-Up asphalt Roofing: BUILT-UP Roofing to receive wood curbs and cants.

#### 1.03 REFERENCES

A. ALSC-American Lumber Standards Committee: Softwood Lumber Standards.
B. APA: American Plywood Association.
C. AWPA (American wood Preservers Association) C20-Structural Lumber Fire Retardant Treatment by Pressure Process.
D. NFPA: National Forest Products Associations.
E. RIS: National Forest Products Associations.
F. SPIB: Southern Pine Inspection Bureau.
G. WCLIB: West Coast Lumber Inspection Bureau.
H. WWPA: Western Wood Products Association.

#### 1.04 SUBMITTALS

A. Submit under provisions of Section 01300.
B. Product Data: Provide technical data on wood preservative materials and application instruction.

#### 1.05 QUALITY ASSURANCE

A. Perform Work in accordance with the following Agencies:
    1. Lumber Grading Rules: NFPA.
    2. Plywood Grading Agency: Certified by APA.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

A. Lumber Grading Rules: NFPA.
B. Plywood: APA Rated Sheathing Structural I, D-D; Exposure Durability 1; sanded and unsanded.

#### 2.02 ACCESSORIES

A. Fasteners and Anchors:
    1. Fasteners: Hot-dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
    2. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorage to steel.

## 2.03 FACTORY WOOD TREATMENT

A. Fire retardant: AWPA Treatment C20, Exterior Type, Chemically treated and pressure impregnated.
B. Wood Preservative (Pressure Treatment): AWPA Treatment C1 using Water borne preservative with 0.25 percent retainage.
C. Wood preservative (Surface Application): L Clear Type.

# PART 3 EXECUTION

## 3.01 FRAMING

A. Set member level and plumb, in correct position.
B. Place horizontal members flat, crown side up.
C. Construction curb members of single pieces.
D. Space framing and furring 16 inches o.c.
E. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.
F. Coordinating installation of decking and support of deck openings, parapet construction, and roofing expansion joints.

## 3.02 ROOF CARPENTRY

A. Roof edge: Mechanically attach wood blocking. Offset blocking layers twelve inches; weave corners. Fasteners shall be installed in two rows staggered. Spacing in any one row shall not exceed 24 inches o.c. within eight feet of outside corners, spacing shall not exceed 12 inch in any one row.
B. Base Flashing: Mechanically attached wood blocking flashing base. Offset blocking layers twelve inches; weave corners. Flashing shall be installed if two rows staggered. Spacing in any two rows shall not exceed 24 inches o.c. within eight feet of outside corners, spacing shall not exceed 12 inches in any one row. Install 45 degrees and continuous wood cants at intersections of horizontal wood blocking and vertical flashing surfaces. Fasteners shall be installed in two rows staggered. Spacing in any row shall not exceed 12 inches in any one row. Miter corners blocking layers 12 inches; wave corners.

## 3.03 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment in accordance with manufacturer's instructions.
B. Brush apply one coat of preservative treatment on wood in contact with cementitious materials, roofing and related metal flashing and expansion joint. Treat site-sawn cuts
C. Allow preservative to dry prior to erecting members.

## 3.04 SCHEDULES

A. Roofing blocking S/P/F species, 19 percent maximum moister content, pressure preservative treatment.

END OF SECTION

SECTION 06150

Wood Decking

PART 1 GENERAL

1.1 SUMMARY

A. Section includes [softwood lumber] [plywood] [glue laminated] structural wood decking and preservative treatment of wood.

1.2 REFERENCES

A. APA/Engineered Wood Association:
1. APA -Rated Sheathing.

B. American Wood Preservers Association:
1. AWPA C1 -All Timber Products Preservative Treatment by Pressure Process.
2. AWPA C20 -Structural Lumber Fire Retardant Treatment by Pressure Process.

1.3 SYSTEM DESCRIPTION

A. Design roof live and dead load: LL= 20 psf and DL= 10 psf with deflection limited to 1/240 32/16 of span.

1.4 SUBMITTALS

A. Shop Drawings: Indicate deck framing system, loads and cambers, bearing details, and framed openings.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. Lumber Grading Agency: Certified by DOC PS 20.
2. Wood Structural Panel Grading Agency: Certified by EWA -The Engineered Wood Association.
3. Lumber: DOC PS 20.
4. Wood Structural Panels: DOC PS 1

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience and certified by AITC.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

A. Manufacturers:
1. Georgia Pacific Corp.
2. Louisiana-Pacific Corp.

### 2.2 MATERIALS

A. Plywood: APA/EWA[Rated Sheathing , Span Rating 32/16

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Verify support framing is ready to receive decking.

### 3.2 PREPARATION

A. Coordinate placement of bearing items.

### 3.3 INSTALLATION -PLYWOOD DECKING

A. Install decking perpendicular to framing members, with ends staggered over firm bearing. On sloped surfaces, lay decking with tongue upward.

B. Engage plywood tongue and groove edges.

C. Allow expansion space at edges and ends.
D. Attach decking with 8d nails.
E. Use sheathing clips at unsupported edges of plywood between supporting framing members.
F. Cut decking to accommodate roof drain and flange.

END OF SECTION

SECTION 06173

WOOD TRUSSES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes shop fabricated wood trusses for roof and floor framing; bridging, bracing, and anchorage; and preservative treatment of wood.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. APA-The Engineered Wood Association:
   1. APA/EWA TB 200 - Fire Retardant Treated Plywood.

C. American Wood-Preservers' Association:
   1. AWPA C1 - All Timber Products - Preservative Treatment by Pressure Process.
   2. AWPA C20 - Structural Lumber - Fire-Retardant Treatment by Pressure Processes.

D. ASTM International:
   1. ASTM A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
   2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   3. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

E. National Fire Protection Association:
   1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

F. The Redwood Inspection Service:
   1. RIS - Standard Specifications for Grades of California Redwood Lumber.

G. Southern Pine Inspection Bureau:
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

H. Truss Plate Institute:
1. TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction.

I. Underwriters Laboratories Inc.:
1. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

J. U. S Department of Commerce National Institute of Standards and Technology:
1. DOC PS 1 - Construction and Industrial Plywood.
2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
3. DOC PS 20 - American Softwood Lumber Standard.

K. West Coast Lumber Inspection Bureau:
1. WCLIB - Standard Grading Rules for West Coast Lumber.

L. Western Wood Products Association:
1. WWPA G-5 - Western Lumber Grading Rules.

## 1.3 SYSTEM DESCRIPTION

A. Design Floor Live and Dead Load: as indicated on drawings with deflection limited to 1/360 of span.

B. Design Roof Live and Dead Load: as indicated on drawings with deflection limited to 1/240 of span including ceiling load.

## 1.4 SUBMITTALS

A. Section {01330 - Submittal Procedures}: Submittal procedures.

B. Shop Drawings: Indicate sizes and spacing of trusses and associated components, web and chord sizes, plate sizes, fastener descriptions and spacings, loads and truss cambers, framed openings, and end reactions. Submit design calculations.

C. Product Data: Submit truss configurations, bearing and anchor details, bridging and bracing.

## 1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. Lumber Grading Agency: Certified by DOC PS 20.
2. Plywood Grading Agency: Certified by APA/EWA.
3. Lumber: DOC PS 20.
4. Wood Structural Panels: DOC PS 1 or DOC PS 2.

B. Truss Design, Fabrication, and Installation: In accordance with TPI 1.

C. Fire Rated Floor and Roof Construction: Rating as indicated on Architectural Drawings.
1. Tested Rating: Determined in accordance with ASTM E119.

D. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Design trusses under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Texas.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section {01600 - Product Requirements}: Product storage and handling requirements.

B. Store truss depth in vertical position resting on intermittent bearing pads.

PART 2 PRODUCTS

2.1 MATERIALS

A. Lumber Grading Rules: SPIB

2.2 FABRICATION

A. Fabricate trusses to achieve structural requirements specified.

B. Fabricate bottom and top chord extensions as indicated on Drawings.

C. Frame special sized openings in web framing as indicated on Drawings.

2.3 SOURCE QUALITY CONTROL

A. Section {01400 - Quality Requirements}: Testing, inspection and analysis requirements.

B. Inspect Work performed at fabricator's facility to verify conformance to Contract Documents.

C. When fabricator is approved by authority having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.
   1. Specified shop inspections are not required for Work performed by approved fabricator.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Section {01300 - Administrative Requirements}: Coordination and project conditions.

B. Verify supports and openings are ready to receive trusses.

### 3.2 PREPARATION

A. Coordinate placement of [bearing] [support] items.

### 3.3 ERECTION

A. Set members level and plumb, in correct position.

B. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in alignment until completion of erection and installation of permanent bracing.

C. Do not field cut or alter structural members without approval of Architect/Engineer.

D. Place headers and supports to frame openings.

E. Frame openings between trusses with lumber in accordance with Section [06112}.] [{06114}.

F. Coordinate placement of sheathing with work of this Section.

G. After erection, touch-up damaged surfaces with primer consistent with shop coat.

### 3.4 ERECTION TOLERANCES

A. Section {01400 - Quality Requirements}: Tolerances.

B. Framing Members: 1/2 inch maximum, from indicated position.

END OF SECTION

**SECTION 06220**

**FINISH CARPENTRY AND MILLWORK**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Providing all finish carpentry items including, but not limited to:
   1. Finish Carpentry
   2. Millwork and Cabinetry
   3. Plastic Laminate
   4. Casework Hardware
   5. Miscellaneous Millwork

B. Installation of:
   1. Finish hardware
   2. Plastic laminate faced wood doors

### 1.2 RELATED WORK

A. Section 06100 – Rough Carpentry

B. Section 08213 – Plastic Laminate Faced Wood Doors

C. Section 08710 – Finish Hardware

D. Section 09900 – Painting and Staining

E. Section 12300 – Educational Casework

### 1.3 REFERENCES

A. American National Standard Institute:
   1. ANSI A156.9 – Cabinet Hardware
   2. ANSI A161.1 – Woodwork Testing Standards
   3. ANSI A208.1 – Mat-Formed Wood Particleboard

B. Architectural Woodwork Institute:
   1. AWI – Quality Standard Illustrated

C. National Electrical Manufacturers Association:
   1. NEMA LD 3 – High Pressure Decorative Laminates

### 1.4 PERFORMANCE REQUIREMENTS

A. Unless otherwise indicated, perform work in accordance with AWI “Quality Standards Illustrated”, Custom Grade, except where specification exceeds those standards, the more stringent shall govern.

B. Fabricated millwork and cabinetry in accordance with ANSI A161.1, NEMA LD3, and

general static load testing performed and certified by an independent testing agency, covering the following areas of product performance, with these minimum results:

1. Base cabinet construction/racking test: 800 lbs.
2. Cabinet front joint loading test: 425 lbs.
3. Wall cabinet static load test: 2,000 lbs.
4. Drawer front joint loading test: 600 lbs.
5. Drawer construction/static load test: 750 lbs.
6. Cabinet adjustable shelf support device/static load test: 300 lbs.

C. Shelf Loading: Comply with loading/deflection standards of the Composite Panel Association.

**1.5 SUBMITTALS**

A. Product Data:
1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
2. Manufacturer's preprinted product information for all hardware proposed on the project.
3. Manufacturer's preprinted maintenance instructions for the casework hardware.

B. Shop Drawings:
1. Indicate size, material and finish.
2. Show locations and installation procedures, including hardware, sinks, service fixtures, trim and other pertinent data for each unit.

C. Certification: Provide manufacturer's certifications that casework has been fabricated and installed according to AWI "Custom" Grade guidelines or better.

D. Samples: Two (2) each, 6 inch by 6 inch by 3/4 inch sample of specified particleboard core with grade stamp for use as verification of installed prduct.

E. Closeout:
1. Record Drawings: indicate revisions to original drawings and shop drawings
2. Manufacturer contact names, addresses and phone numbers
3. Finish Material Schedule: names and color numbers of laminates and stains
4. Keys: Provide additional master key for each room and additional locksets totaling one percent of total project for attic stock.

**1.6 QUALITY ASSURANCE**

A. Manufacturer: Minimum of five (5) years experience in providing manufactured casework systems for similar types of projects, produce evidence of financial stability, bonding capacity, and adequate facilities and personnel required to perform on this project.

B. Delivery conference: 48 hours prior to delivery, notify Architect of delivery date and time. At the Architect's discretion, a representative of the Architect may be present at the time of delivery. Casework not conforming to the specified requirements, as reasonable determined by the Architect's representative, shall be removed and returned to manufacturer for repair or replacement at no additional cost to the Owner or increase in time.

## 1.7 PRE-INSTALLATION CONFERENCE

A. Section 01110 – Notification of Architect Requirements.

## 1.8 PRODUCT HANDLING

A. Deliver completed laminate clad casework, countertops and related products only after wet operations in building are completed. Store in ventilated place, protected from the weather, with relative humidity range of 20 to 50 percent.

B. Protect finished surfaces from soiling and damage during handling and installation with a protective covering.

## 1.9 JOB CONDITONS

A. Environmental Requirements: do not install casework until permanent HVAC dydtems are operating and temperature and humidity have been stabilized for at least one (1) week.
   1. Manufacturer/Supplier shall advise Contractor of temperature and humidity requirements for architectural casework installation areas.
   2. After installation, control temperature and humidity to maintain relative humidity between 25 and 55 percent.

B. Conditions: Do not store or install casework in building until concrete, masonry, and drywall/plaster work is dry.

## 1.10 COORDINATION

A. Coordinate the Work of the Section with plumbing work specified in Division 15. Coordinate sink opening construction with sinks specified in Division 15.

B. Coordinate location of blocking in walls for installation and support of wall cabinets.

## 1.11 WARRANTY

A. Warranty the work specified herein for five (5) years against becoming unserviceable or causing and objectionable appearance resulting from either defective or nonconforming materials and workmanship.

B. Defects shall include, but not be limited to the following:
   1. Rough or difficult operation, or loose or missing parts.
   2. Delamination of surfaces.
   3. Noticeable deterioration of finish.
   4. Warped or misaligned surfaces or telegraphing of subsurface imperfections.

# PART 2 – WARRANTY

## 2.1 CASEWORK MANUFACTURERS

A. Catalog numbers shown on drawings are based on Environments L44 Series manufactured by LSI Corporation of America, Inc. They are shown for reference only to indicate component requirements only. Fabrication of units shall be in accordance with these designations.

B. Manufacturers listed below are certified by AWI Quality Certification Program and are listed for the Contractor's convenience only and shall not preclude the Contractor from using other manufacturers, provided they produce equivalent products of the type specified for the scope and size of the Project. Other manufacturers must have experience manufacturing products meeting or exceeding the specifications and must comply with the criteria specified in paragraph 1.7 above and with Division 1 requirements regarding substitutions.

1. Casework:
   a. Calmar Manufacturing Co., Inc., Calmar, IA (563)562-3261
   b. Case Systems, Inc., Midland, MI (989)496-9510
   c. Casework Services, Inc. (CSI), Temple, TX (254)771-1419
   d. Global Casework Manufacturing, Inc., Sugar Land, TX (281)494-6181
   e. Imperial Mill & Fixture, Inc., Corpus Christi, TX (361)883-4630
   f. LSI Corporation of America, Inc., Minneapolis, MN (763)559-4664
   g. MGC Millwork, LP, Stafford, TX (281)340-1400
   h. Robert Shaw Mfg. Co., Inc., Fort Worth, TX (817)927-2557
   i. South Texas Woodmill, Inc., Brownsville, TX (956)831-3304
   j. Stevens Industries, Inc., Teutopolis, IL (217)540-3100
   k. Terrill Manufacturing Co., San Angelo, TX (915)655-7133
   l. TMI Systems Design Corp., Dickenson, ND (701)225-6716
   m. Victoria Cabinetworks, Victoria, TX (361)578-0263

## 2.2 MILLWORK MATERIALS

A. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD3, and the following requirements:

1. Exterior Color Selection Available:
   a. Architect to select from minimum of 250 selections available, including wood grain patterns and solid colors.
   b. Provide 5 different colors available per project.
   c. If laminate has wood grain, direction of grain shall be vertical on door, end panels, fascia panels, and exposed back; horizontal on drawer faces, aprons, and top rails.
2. Laminate grades:
   a. Exposed doors, finished end panels, and other vertical surfaces: GP28 (0.028 inch thick normal)
   b. Horizontal surfaces other than top: GP28 (0.028 inch thick nominal)
   c. Cabinet Liner: CL20 (0.020 inch nominal), white.
   d. Work Surfaces and Countertops: GP50 (0.050 inch thick nominal) with BK20 (0.20 inch thick) backer sheet.
   e. Backsplash: PH42 (0.042 inch nominal) with nominally balanced backer sheet.
3. Adhesive: PVA water resistant adhesive. Contact adhesives not permitted.
4. Pressure Fused Laminate:
   a. NEMA LD3 VGL, and NEMA LD3 CLS, Melamine resin impregnated, 120 gram PSM minimum, thermofused to core under pressure.
   b. Color:
      1) Closed interior, underside of wall cabinets: White.
      2) Exposed and Semi-exposed open cabinets: Match exterior.
   c. Provide balanced construction with same thermofused melamine. Unsurfaced coreboard or simple backers not allowed.

B. Core Material:

1. Particleboard: ANSI 208.1, minimum 45 pcf density, Grade M-3

2. Plywood: Shop sanded, exterior grade veneer cored, hardwood faced, any species, with no defects affecting strength or utility. Overlay plywood not permitted. Plywood allowed at countertops and toe-base only.
3. Water resistant treated plywood: shall have 24 hour thickness swell factor of five percent or less and 24 hour water absorption factor of ten percent or less; P.S. 51, Type II or better.
4. Cabinet components shall be of the following minimum core thicknesses:
    a. Cabinet backs, drawer body, and drawer bottoms: 1/2 inch particleboard
    b. Door and drawer face, base, wall, and tall cabinet tops and bottoms, cabinet sides, drawer spreaders, cabinet back rear hangstrips, structural dividers, and exposed cabinet backs: 3/4 inch particleboard.
    c. Work surfaces and countertops: minimum 1 inch particleboard or plywood, except use water resistant treated plywood core at counters with sinks.
    d. Shelves: 3/4 inch particleboard core for 30 inches long or less, 1 inch thick particleboard core for more than 30 inches long; 14 inch deep, unless otherwise noted. Provide vertical dividers for shelves over 36 inches long.
    e. Cabinet Toe-Base: 3/4 inch plywood. No particleboard within four (4) inches of floor.

C. Countertops and Backsplashes:
1. Countertops: Provide countertops with PVC edge in as long as practical continuous lengths. Provide field glued splines at joints. No joints closer than 24 inches either side of sink cutout.
2. Backsplash: Integral to countertop, 4 inch high unless otherwise shown. Fabricate with single continuous sheet of laminate from front counter to top of splash with no joints from horizontal to vertical application. No joints shall occur at sink openings.
3. At exposed countertop end corners, provide 1 inch radius, or similar safety treatment.

D. Sinks: Refer to Division 15. Sizes as shown on drawings. Provide sealant at sink cut-outs.

E. Service Fixtures: Refer to Division 15.

F. Toe Spaces: Leave toe spaces unfinished for installation of resilient base, unless otherwise shown.

G. End Panels and Filler Strips: Match adjacent case-piece.

H. Edging:
1. Provide the following in accordance with “Edging Locations”:
    a. Flat Edge PVC: 0.020 inch. Solid, high-impact, purified, color-thru, acid resistant, machine-applied with hot melt adhesives.
    b. 3 mm PVC: Solid, high-impact, purified, color-thru, acid resistant, pre-lamination primed edging, machine-applied with hot melt adhesives, and machine profiled to 1/8 inch radius.
2. Edging Locations:
    a. Cabinet body edge, including door/drawer front spacer rail: Flat Edge PVC, color matched to door/drawer face or as selected.
    b. Forward edge of interior body components, interior dividers, self, and top

edge of drawer body: Flat Edge PVC to match cabinet interior surface color.

c. Door/Drawer-Front edging: 3mm PVC, color matched to standard laminates.

## 2.3 CABINET HARDWARE

A. All hardware shall meet ANSI A156.9 and shall be subject to approval by the Architect. All keying shall match existing master key system and be approved by the Owner.

1. Acceptable Manufacturers:
   a. Accuride
   b. National
   c. Knape & Vogt
   d. Ives
   e. Stanley
   f. As specified herein, provide specified product, or Architect approved equal.

B. Hinges:

1. Heavy duty, five-knuckle 2 3/4 inch institutional type hinge shall meet ANSI/BHMA A156.9 Grade 1 requirements. Mill ground, hospital tip, Teflon coated tight pin feature with all edges eased. Hinge shall be full wrap around type of tempered steel 0.095 inch thick. Each hinge shall have minimum of 9 screws, #7, 5/8 inch FHMS to assure positive door attachment.
2. One Pair per door to 48 inch height. One and one-half pair over 48 inches in height. Hinge shall accommodate 13/16 inch laminated door and allow 270 degree swing.
3. Acceptable Product/Manufacturer: Institutional Hinge No. 100742, Dull Chrome (Cabinetmakers Hardware, 2002, Volume 6B), or approved equal.

C. Pulls:

1. Wire design, 4 inches, Chrome, US26D finish.

D. Sliding Door Hardware:

1. Frameless 1/4 inch glass sliding doors: double track rolling door assembly.
2. Framed 13/16 inch thick stile and rail sliding doors: top mounted track with dual roller hangers. Vertical adjustment for accurate alignment.

E. Drawer Slides:

1. Standard Drawers: 3/4 extension, self-closing, white epoxy-coated, lever disconnect, positive in-stop/out-stop, nylon rollers, minimum 100 pound dynamic load rating at full extension.
2. File Drawers: Full extension, 3-part progressive opening slide, precision steel ball bearing, minimum 100 pound dynamic load rating at full extension, zinc plated or epoxy coated at manufacturer's option.
3. Provide body mounted molded rails for hanging file system for legal or letter size as indicated by manufacturer's model number. Cutting or machining of drawer body/face not permitted.
4. Paper Storage Drawers: Full extension, self-closing, white epoxy-coated, lever disconnect, positive in-stop/out-stop, nylon rollers, minimum 150 pound dynamic load rating at full extension.

F. Catches: Provide opening resistance in compliance with the American with Disabilities Act.

1. Provide top-mounted magnetic catch for base and wall cabinet door.

2. Provide two at each tall cabinet door. Catch housing shall be molded in White.

G. Adjustable Shelf Supports:
1. Dual-pin design with anti tip-up shelf restraints for both 3/4 inch and 1 inch shelves.
2. Include Keel to retard shelf slide-off, and slot for mechanical attachment of shelf to clip.
3. Load rating shall be minimum 300 pounds each support without failure.

H. Wardrobe Rod: 1 inch diameter plated steel rod, with captive sockets.

I. Coat Hooks: Single and double prong, wall mount – Satin Aluminum

J. Locks: Five-disk tumbler cam-style with strike. Locks on cabinets in same room keyed alike. Provide two (2) keys per room where doors and drawers are scheduled to receive locks. Dull chrome finish. Lock core shall be removable with control key, permitting Owner to change lock arrangements without tools.

## 2.4 SPECIALTY ITEMS

A. Grommets:
1. Size: 2-1/2 inches diameter with “Flip-Top”™ tap in cap.
2. Colors: As selected by Architect from manufacturer’s available colors.
3. Number/Location: Where electrical, telephone, and computer data wiring need to pass through tops whether shown or not.
4. Approved Product/Manufacturer: Model No. EDP3 manufactured by Doug Mockett & Company, Inc., Manhattan Beach, CA (800)523-1269, or Architect approved equal.

B. Keyboard Drawers (At all knee spaces):
1. Approved Product/Manufacturer: No. SD-1 as manufactured by Knape & Vogt; or Architect approved equal.

C. Molded Personal Pencil Drawer: High-impact 100 Polystyrene with in-stop, out-stop, and self-closing features. Provide under top mounted 100 ob self-closing slides. Twelve compartment drawer body, and slides, Black. Provide where indicated on plans.

## 2.5 SOLID STOCK

A. Moisture Content: Percent of moisture in relation to over-dry weight shall be between 8 percent and 13 percent at time of installation.

B. Natural Finish Hardwood:
1. Occasional Knot permitted provided it is tight and smooth.
2. Grain Pattern: Rift-cut
3. Species: AWI “Premium” Grade, White Oak

C. Paint Grade Hardwood: Any species including Parana Pine, Except do not use Oak, Elm or similar species which have coarse grain.

## 2.6 MISCELLANEOUS

A. Utility Shelving: AWI “Economy” grade.

B. Clothes Rod: 1-1/2 inch diameter smooth wooden dowel by length required, with end supports and fasteners of type recommended to suit application.

C. Telephone/MDF/IDF Board: Provide minimum 4 food by 8 foot by 3/4 inch thick plywood for telephone/data punch down blocks and video equipment in accordance with Section 06100, Rough Carpentry. Paint in accordance with Section 09900, Painting.

## 2.7 MILLWORK FABRICATION

A. Fabricate casework, countertops and related products to dimensions, profiles and details shown on drawings. Fabricate casework square, plumb, and true.

B. Detailed Requirements For Cabinet Construction:
   1. Toe-Base:
      a. Continuous, ladder type platform with concealed fastening to cabinet bottom, level and secured to floor
      b. Toe-base at exposed cabinet end panels shall be recessed 1/4 inch from face of finished end, for flush installation of finished base material.
      c. No cabinet sides-to-floor will be allowed.
   2. Cabinet Top and Bottom:
      a. Solid sub-top shall be furnished for all base and tall cabinets.
      b. At cabinets over 36 inches bottoms and tops shall be mechanically joined by a fixed divider.
      c. Assembly devices shall be concealed on bottom side of wall cabinets.
   3. Cabinet Sides:
      a. Doweled, and glued under pressure, or attached with fully concealed interlocking mechanical fasteners to sub-top and bottom.
      b. Drill holes for adjustable shelves 1-1/4 inches on center.
   4. Cabinet Backs:
      a. Side bound, captured in grooves, recessed from cabinet rear, and securely fastened at top and bottom.
      b. Hang rails shall be located at rear of cabinet back and fastened to cabinet sides. Provide minimum of two (2) at base, two (2) at wall, and three (3) at tall cabinets as instructed by casework manufacturer.
      c. Provide removable back panels and closure panels for plumbing access at all sink cabinets, and where shown on drawings.
   5. Exposed end corner and face frame attachment:
      a. Butt joint, glued and finish nailed; or attached with fully concealed interlocked mechanical fasteners.
   6. Door and Drawer Fronts:
      a. Drawer fronts and hinged doors shall overlay the cabinet body. Maintain a maximum 1/8 inch reveal between multiple drawer fronts within the cabinet.
      b. Where indicated, provide Stile and Rail doors with full 1/4 inch plate glass, hinged or sliding. Exposed lite-opening edges shall be trimmed and glazed with extruded glazing bead.
      c. Where indicated, frameless sliding doors shall be 1/4 inch thick plate glass with ground and polished edges. Fit with anodized aluminum shoes and nylon roller.

C. Drawers:
   1. Drawer fronts: apply to separate drawer body component sub-front.

2. Drawer sides: doweled to receive front and back, glued under pressure, machine squared.
3. Drawer bottom: set into front and sides, 1/4 inch deep groove with minimum 3/8 inch standing shoulder, continuously glued. Reinforce drawer bottoms with 1/2 inch by 4 inch front-to-back intermediate underbody stiffeners, mechanically fastened. One at 24 inches, two at 36 inches, and over.
4. Paper storage drawers: fitted with full width hood at back.
5. Hanging file drawers shall be fabricated to accept letter size hanging folders compatible with Pendaflex system.

D. Vertical and Horizontal Dividers: As required by manufacturer for type and style of component.

E. Door/Drawer Front Rail: As Required by manufacturer for type and style of component, and hardware placement.

F. ADA, Americans with Disabilities Act Requirements: The following special requirements shall be met, where specifically indicated on architectural plans as "ADA", or by General Note. Shall be in compliance with Federal Register Volume 56, No. 144, Rules and Regulations:
1. Countertop height: With or without cabinet below, not to exceed a height of 34 inches Above Finished Floor (A.F.F.), at a surface depth of 24 inches.
2. Kneespace clearance: minimum 29 inches A.F.F. at apron, and 30 inches clear span width.
3. 12 inch deep shelving, adjustable or fixed: Not to exceed a range from 9 inches A.F.F. to 54 inches A.F.F.
4. Wardrobe Cabinets: Provide with rod/shelf adjustable to 48 inches A.F.F. at a maximum 21 inch shelf depth.
5. Sink Cabinet clearances: In addition to above, upper kneespace frontal depth shall be no less than 8 inches, and lower toe frontal depth shall be no less than 11 inches, at a point 9 inches A.F.F., and as further described in Volume 56, Section 4.19.

## PART 3 – EXECUTION

### 3.1 MILLWORK INSTALLATION

A. Positioning: Place approximately level, plumb and at right angles to adjacent work.

B. Fitting: Where Field cutting or trimming is necessary, perform in a neat, accurate, professional manner without damaging the products and adjacent work.

C. Anchorage: Attach securely so the products will perform to their maximum ability without damage from inadequate fastenings.

D. Fasten tops to frames with concealed clips, screws and glue.

### 3.2 FINISH HARDWARE INSTALLATION

A. The supplier will mark each item of hardware for location. Protect the markings until each item is installed. If any item is delivered to the job not properly marked, return it to the supplier for marking before attempting to install it.

B. Check markings on hardware for proper location. Install and make necessary

adjustments for proper working order. Any hardware damaged by improper adjustment or careless abuse will be replaced by the Contractor at his expense.

C. Provide clean, properly sized and accurately placed mortises and drilled holes for all mortise hardware such as locksets and for cylindrical locks where specified only.

D. Fit all surface-applied hardware accurately.

E. After hardware is installed, protect exposed surfaces by use of heavy paper and masking tape and maintain until job completion.

F. Remove all finish hardware except that which is primed for painting before painter's finish is applied. Permanently replace and re-adjust for proper function after painter's finish has dried hard.

G. Millwork contractor shall be responsible for hardware on millwork.

## 3.3 PLASTIC LAMINATE FACED WOOD DOOR INSTALLATION

A. Protect all doors during handling.

B. Refer to Section 08710, Finish Hardware for hardware requirements.

C. Install doors in accordance with manufacturer's instructions.

D. Install and adjust doors for smooth, quite operation.

**END OF SECTION**

**SECTION 07125**

**COPPER FABRIC BASE FLASHING**

## PART I GENERAL

### 1.01 SECTION INCLUDES
A. Flexible flashing.

### 1.02 RELATED SECTIONS
A. Section 04810- Unit Masonry Assemblies
B. Section 04811- Single-Wythe Unit Masonry
C. Section 04815- Cavity Walls
D. Section 04816- Masonry Veneer
E. Section 04820- Reinforced Unit Masonry Assemblies.
F. Section 06100- Rough Carpentry: Flashings at windows, doors, and other openings.

### 1.03 REFERENCES
A. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association.
B. American Society for Testing and Materials
    1. ASTM E-8— Test method for tension testing of metallic materials
    2. ASTM D-412— Test method for tension and elongation
    3. ASTM E-154— Test method for puncture resistance of water vapor retarders
    4. ASTM D-1004— Test method for initial tear resistance of sheeting
    5. ASTM D-1938— Test method for tear propagation resistance by a single tear
    6. ASTM E-96-B— Test method for water vapor transmission of materials
    7. ASTM D-570— Test method for water absorption
    8. ASTM B-370-98— Standard specification for copper sheet and strip
    9. MIL-F-55561A— Military specification for copper sheeting
    10. ASTM-B-248— Specification for general requirements for copper alloy sheets

### 1.04 SUBMITTALS
A. See Section 01300- Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturer's data sheets on each product to be used, including:
    1. Preparation instructions and recommendations.
    2. Storage and handling requirements and recommendations.
    3. Installation methods.
C. Samples: Actual pieces of flashing materials specified, not less than 3 by 5 inches.

### 1.05 QUALITY ASSURANCE
A. Manufacturer Qualifications: Provide all flashing materials by a single manufacturer with not less than 20 years of experience in manufacturing products of the type specified.

### 1.06 DELIVERY, STORAGE, AND HANDLING
A. Deliver materials to project site in manufacturer's original, sealed packaging bearing manufacturer's name and product identification.
B. Store flashing materials under cover avoiding twisting and deformation, in manufacturer's unopened packaging, until ready for installation.
C. Store mastic materials in sealed containers that are protected from the weather.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

A. Acceptable Manufacturer: York Manufacturing, Inc; Sanford, Maine 04073.
Tel: 207-324-1300 or 800-551-2828, Fax: 888-819-2592, website www.yorkmfg.com,
Email: info@yorkmfg.com

B. Substitutions: Approved Equals

**2.02 MATERIALS**

A. Flexible Flashing: Laminated sheet comprising of CDA 110 alloy copper sheet with O60 temper conforming to ASTM B-370-98 bonded with a ductile asphalt per ASTM 449-89 type II, Grade UC-20 in a quality of not less than 1.4 oz/sq ft, between two layers of glass fabric weighing not less than 0.3 oz/ sq ft/layer with 20 x 10 threads per inch. Mineral mica dust will be used as a parting agent.

1. Performance Requirements: Tests performed on 5 ounce flashing
   a. Tensile Strength: ASTM E 8— 32,000 psi
   b. Elongation: ASTM D-412 die C— 50%
   c. Puncture Resistance: ASTM E-154— 390# min
   d. Tear Resistance-Initial: ASTM D-1004— 43.8# min
   e. Tear Resistance-Propagation: ASTM D-1938— 22.2# min
   f. Permeance: ASTM E-96-B— 0.00 perms
   g. Water Absorption: ASTM D-570— PASS
2. Product: YORK COPPER FABRIC Manufactured by York Manufacturing or approved equal

**2.03 ACCESSORIES**

A. Flashing Mastic: A compounded composition of asphalt, mineral stabilizers and interfiber manufactured to a trowel grade consistency.
   1. Product: YORK COP-R-TITE MASTIC Manufactured by York Manufacturing

B. Termination Bars: Stainless Steel, Aluminum or Plastic bars; 1" x 1/8" x 8' with holes every 8" starting 4" from either end.

C. Weep Vents: Cell vents insure positive drainage in all cavity wall construction. Made from durable polypropylene, Weep Vents are available clear or gray in two sizes: 3/8" x 2 ½" x 3 3/8" and 3/8" x 3 ½" x 3 ½"
   1. Product: YORK CELL VENTS Manufactured by York Manufacturing

**PART 3 EXECUTION**

**3.01 EXAMINATION**

A. Do not begin installation until substrates have been properly prepared and sloped so that water will drain to building exterior.

B. Verify that surfaces to receive flashing are thoroughly dry, free from loose materials, and reasonably smooth, with no projections or sharp edges that could puncture flashing.

**3.02 INSTALLATION**

A. Install in accordance with manufacturer's instructions and with applicable recommendations of SMACNA Architectural Sheet Metal Manual.
   1. Lap flashing joints minimum of 4 inches and seal watertight with mastic.
   2. Carry flashing vertically as detailed, but in no case less than 6 inches above horizontal flashing plane.
   3. Extend head and sill flashings not less than 6 inches beyond openings and turn up to from watertight pan; seal with mastic.

B. Masonry Flashing: Comply with requirements of applicable Section(s)

C. Masonry Flashing: Lay horizontal flashing in slurry of fresh mortar and top with fresh full bed or mortar to receive masonry units.

1. Carry Flashing through wall and leave exposed for inspection.
2. After Inspection and approval, cut flashing flush with surface of masonry or as otherwise detailed.
3. Remove mortar or other obstructions from weep holes.

END OF SECTION

**SECTION 07140**

**BELOW GRADE WATERPROOFING**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Preparation of concrete surfaces to receive waterproofing membrane.

B. Sealing of Cracks and joints.

C. Fluid applied waterproofing system, with prefabricated drainage composite or protection board at elevator pit walls and at Auditorium walls that fall below grade.

D. Pre-applied waterproofing system, with joint sealing tape, and other accessories at below grade horizontal surfaces under the slab or elevator pit.

### 1.2 RELATED SECTIONS

A. Section 03300 – Cast-In-Place Concrete

B. Section 07900 – Building Sealants

C. Division 15 – Mechanical: Mechanical penetrations, such as floor drains and piping, through waterproofing membrane.

D. Division 16 – Electrical: Electrical penetrations, such as conduit, through waterproofing membrane.

### 1.3 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
   2. Manufacturer's installation instructions.

B. Certifications:
   1. Manufacturers certification that applicator is approved by manufacturer.
   2. Manufacturers affidavit that materials used in Project contain no asbestos.

C. Warranty: Submit a sample warranty identifying the terms and conditions stated in warranty.

### 1.4 QUALITY ASSURANCE

A. Applicator Qualifications: Applicator shall be experienced in applying the same or similar materials and shall be specifically approved in writing by the membrane system manufacturer.

B. Regulatory Requirements: Comply with applicable codes, regulations, ordinances, and

laws regarding use and application of products that contain volatile organic compounds (VOC).

## 1.5 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requirements.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials job site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.
   1. Name of material.
   2. Manufacturer's stock number and date of manufacture.
   3. Material safety data sheet (MSDS).

B. Store and handle in strict compliance with manufacturer's instructions, recommendations and material safety data sheets (MSDS).

C. Protect from damage from sunlight, weather, excessive temperature and construction operations.

D. Remove damaged material from the site and dispose of in accordance with applicable regulations.

E. Do not double-stack pallets of waterproofing on the job site. Provide cover on top and all sides.

F. Store drainage composite and protection board flat and off the ground. Provide cover on top and all sides.

G. Protect waterproofing materials from freezing. In cool temperatures, store the material for several hours at room temperature to facilitate mixing and application.

H. Sequence deliveries of materials to avoid delays, but minimize on-site storage.

## 1.7 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive membrane waterproofing.

C. Coordinate waterproofing work with other trades to ensure adequate illumination, ventilation, and dust-free environment during application and curing of membrane. The applicator shall have sole right of access to the specified areas for the time needed to complete the application and allow the membrane to cure adequately.

D. Protect adjoining surfaces not to be coated against damage or soiling. Protect plants, vegetation and animals which might be affected by waterproofing operations.

E. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.

F. Keep products away from spark or flame. Do not allow the use of spark producing equipment during application and until all vapors have dissipated. Post “NO SMOKING” signs.

G. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

## 1.8 WARRANTY

A. Warrant the work specified herein for two (2) years against becoming unserviceable or causing and objectionable appearance resulting from either defective or non-conforming materials and workmanship.

## PART 2 – PRODUCTS

## 2.1 FLUID APPLIED WATERPROOFING SYSTEM

A. Specifications are based on named manufacturer. Other manufacturers must have a minimum of five (5) years experience manufacturing equivalent products to those specified and comply with Division 1 requirements regarding substitutions to be considered.
1. Carlisle Coatings and Waterproofing Incorporated, Sapulpa, OK (Barricoat)
2. Grace Construction Products, W.R. Grace & Co.-Conn., Austin, TX

B. Waterproofing Membrane: Two (2) part, self-curing, synthetic rubber based material meeting or exceeding the performance requirements of ASTM C836 and other ASTM standards as indicated in the following table and conforming to W.R. Grace & Co. “Procor” waterproofing membrane.

Waterproofing Membrane Physical Properties, minimum:

| Property | Test Method | Typical Value |
|---|---|---|
| Cured Film Thickness: | ASTM D3767 Method A | 1.5 mm (0.060 in.) nom. |
| Solids Content | ASTM D1644 | 100 percent |
| Flexibility, 180 degree Bend over 25 mm (1 in) Mandrel at 32 degrees C (-25 degrees F) | ASTM D1970 | Unaffected |
| Elongation | ASTM D412 | 500 percent minimum |
| Peel Adhesion to Concrete | ASTM D903 Modified* | 880 N/m (5 lbs./in.) |

C. Accessory Products:
1. Prefabricated Drainage Composite: Shall be designed to promote positive drainage while serving as a protection course.
   a. Hydroduct ® 660 Drainage Composite for use on all horizontal surfaces.
   b. Hydroduct ® 220 Drainage Composite for use on all vertical surfaces.
2. Protection Board (Use only where prefabricated drainage composite is not used):
   a. Asphalt Hardboard: A pre-molded semi-rigid protection board consisting of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 inch) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two (2) layers of 3 mm (0.125 inch) thick hardboard or one (1) layer of 6 mm (0.25 inch) thick hardboard.

b. Expanded Polystyrene: 25 mm (1 inch) thick for vertical applications with the following characteristics:

Normal Density: 1.0 pcf[3]
Thermal Conductivity, K factor: 0.24 at 40 degrees F, 0.26 at 24 75 Degrees F
Thermal Resistance, R-Value: 4 per 1 inch of thickness.

D. Locations: Vertical below-grade retaining walls and walls that fall below grade 0'-0" and where shown on drawings.

## 2.2 PRE-APPLIED WATERPROOFING SYSTEM

A. Specifications are based on named manufacturer. Other manufacturers must have a minimum of five (5) years experience manufacturing equivalent products to those specified and comply with Division 1 requirements regarding substitutions to be considered.
1. Carlisle Coatings and Waterproofing Incorporated, Sapulpa, OK
2. Grace Construction Products, W.R. Grace & Co.-Conn., Austin, TX

B. Waterproofing Membrane: Composite sheet comprising a thick HDPE film, an aggressive pressure sensitive adhesive and a weather resistant protective coating. Membrane provides a continuous seal that resists water ingress and migration between the membrane and the structure. The waterproofing system shall conform to the following products as manufactured by W.R. Grace & Co.:
1. Membrane: Robust membrane for horizontal use below concrete slabs complying with Preprufe 200.
2. Tape: Self-adhesive 8 inch wide strip applied to the surface of the membrane along the line of all concrete joints (application temperature range minus 25 degrees F to 86 degrees F). Product shall conform to Preprufe CJ Tape LT; or in hot climates (minimum 50 degrees F), use Preprufe CJ Tape HC.
3. Sealing Membrane: For sealing around penetrations shall conform with Bituthene.

C. Locations: Below grade horizontal surfaces under the slab, and where shown on drawings.

# PART 3 – EXECUTION

## 3.1 EXAMINATION

A. Before waterproofing work is started the all surfaces to be waterproofed shall be thoroughly examined for all deficiencies. Should deficiencies exit, the Architect shall be notified in writing and corrections made.

## 3.2 SURFACE PREPARATION

A. Surfaces to which waterproofing is to be applied shall be thoroughly clean, dry and free from all surface contaminates or cleaning residue that may harmfully affect the adhesion of the membrane.

B. Repair all cracks in accordance with manufacturer's instructions.

## 3.3 APPLICATION

A. Priming: Shall be in accordance with membrane manufacturer's instructions.

B. Apply waterproofing in accordance with membrane manufacturer's instructions.

C. Liquid membrane waterproofing on vertical walls shall positive overlap turned up sheet membrane waterproofing from under slab as instructed by the manufacturer.

D. Where shown or required, install specified perimeter drainage system as the first course of drainage composite immediately after membrane has cured on vertical surfaces. Install manufacturer's recommended drainage composite or protection board/protection course on remainder.

**END OF SECTION**

**SECTION 07160**

**DAMPPROOFING ABOVE GRADE**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Dampproofing applied to exterior face of all exterior sheathing and masonry back up walls for brick veneer exposed to the weather.

### 1.2 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
   2. Manufacturer's installation instructions.

B. Certifications:
   1. Manufacturer's certification of compatibility with rigid insulation specified in Section 07210.
   2. Manufacturer's affidavit that materials used in Project contain no asbestos, lead, or PCB's.

### 1.3 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requirements

### 1.4 WARRANTY

A. Warrant the work specified herein for two (2) full years/continuous without failure.

## PART 2 – PRODUCTS

### 2.1 APPROVED MANUFACTURERS/PRODUCTS

A. Manufacturers listed below whose product meets or exceeds the specifications are approved for use on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing equivalent products to those specified and comply with Division 1 requirements regarding substitutions to be considered. If other than the manufacturer listed as basis of specification is used, use their literature for specific installation requirements.
   1. Sonneborn (Hydrocide 700B by BASF Construction Chemicals), Shakopee, MN (800)433-9517
   2. Karnak (No. 220 AF), Clark, NJ (732)388-9422
   3. Henry Company, Houston, TX (800)231-4551
   4. W.R. Meadows, Inc. (Sealmastic Emulsion) Hampshire, IL (800)342-5976

B. Specifications are based on Henry No. HE789 Fibered Ashalt Emulsion Dampproofing manufactured by Henry Company, Houston, TX

## 2.2 PRODUCT DESCRIPTION

A. Type: Fibered Asphalt Emulsion Coating and Dampproofing.

B. Use: Damnpproofing on exterior sheathing in cavity wall construction and behind plaster, on masonry in cavity wall construction, and as an insulation adhesive.

C. Composition and Materials: Asphaltic resin and clay colloidal emulsifiers.

D. Limitations: Apply material when temperature is over 45 degrees F and protect from rain or freezing until completely dry. Do not apply where material will be in continuous contact with water on ponded water situations.

## 2.3 TECHNICAL DATA

A. Henry company No. HE789:

| | | | |
|---|---|---|---|
| 1. | Permeability, perm-inch: | | 0.10 |
| 2. | Cured Film Properties: | | |
| | a. | Flammability: | No flash |
| | b. | Firm set, hours, maximum (50 percent R.H., 70+ degrees F): | 24 |
| | c. | Heat test, 212 degrees: | No blistering or sagging |
| | d. | Flexibility, @ 180 degrees F arc, 2 inch mandrel, @ 32 degrees F: | No cracking |
| | e. | Resistance to water: | No blistering, no re-emulsification after thorough curing |
| | f. | Direct flame test: | No flame |
| 3. | Compliance: ASTM D1227 Type II Class I, and ASTM D1187, Type I | | |

## 2.4 MISCELLANEOUS MATERIALS

A. Provide primers, glass fabric scrim tape, mastic, and other materials not specifically described, but required for a complete and proper installation as instructed by the dampproofing manufacturer or required.

# PART 3 – EXECUTION

## 3.1 INSTALLATION

A. Surface Preparation (Masonry): Dust, dirt, old loose or scaling coatings should be removed from the surface before coating. Cracks, joints, penetrations, and splits should be sealed, repaired with four (4) inch wide glass fabric scrim tape embedded in Henry #789, or manufacturers approved equal. Dusty or porous masonry surfaces should be dampened with water. Highly porous masonry should be primed with Henry #792 Penetrating Asphalt Primer or #788 Non-Fibered Asphalt Emulsion Dampproofing which has been thinned with one (1) gallon water per five (5) gallons of #788, or manufacturers approved equal. Cleaned metal surfaces should also be primed. Architect must approve the surface preparation and sealing of cracks, joints and other penetrations prior to the application of the dampproofing.

B. Surface Preparation (Sheathing): Prep joints and penetrations in exterior sheathing per sheathing manufacturer's instructions.

C. Working Conditions: Apply under normal working conditions above 45 degrees F and rising. Do not apply when rain is imminent.

D. Application: Apply with brush or spray equipment. Soft brushes free from stiff bristles should be used and the material applied in even strokes. When spraying, apply in one coat with a 50 percent overlap of the spray pattern to obtain a uniform and continuous coating, carrying coating in and around joints, grooves, and slots, following reveals and soffits of windows, and continuing 12 inches out on adjoining partitions and soffits as instructed by manufacturer.
   1. Insure continuous coating free of breaks, voids and pinholes.
   2. Thoroughly cover all cracks, joints, and corners.
   3. Provide dampproofing in all exterior cavity walls on concrete masonry units, and on all exterior sheathing including, but not limited to, areas above soffits, doors and windows, and behind plaster.

E. Coverage: Minimum 4 gallons per 100 square feet.

F. Storage: Keep container tightly sealed and protect from freezing in shipping and storage.

## 3.2 TESTING AND INSPECTING

A. Twenty (20) days after completion of this portion of the work, at the discretion of the Architect, demonstrate by running water test that the Work of this Section will successfully repel water.
   1. Notify the Architect at least 72 hours in advance, and conduct the test in the Architect's presence.
   2. By means of an outrigger, or similar acceptable equipment, place the nozzle of a 3/4 inch garden hose at a point approximately 10 feet-0 inches away from top of wall where approved by the Architect, aiming the nozzle at slight downward angle to direct full stream of water onto wall.
   3. Run water onto wall at full available forces for not less than four (4) hours.
   4. Upon completion of the four (4) hour period, inspect interior surfaces of wall for evidence of moisture penetration.

B. If evidence of moisture penetration is discovered, apply an additional coat of approved water repellent to exterior surface in areas directed by the Architect, repeating application and testing (at no additional cost to the Owner) until no evidence of moisture penetration is found.

**END OF SECTION**

**SECTION 07175**
**SELF ADHERING ROOF UNDERLAYMENT**

## PART 1 – DESCRIPTION

A. Provide all labor, materials, equipment, supervision and incidentals as needed to install a complete POLYGLASS® reinforced modified bituminous underlayment over a new or accepted, prepared existing roof substrate. All details of installation shall conform to POLYGLASS® Specifications, Details and General Recommendations.

## QUALITY ASSURANCE

A. Products used in the work of this Section shall be manufactured by POLYGLASS® or accepted for use in conjunction with the products manufactured by POLYGLASS®.

B. The Roofing Contractor and his personnel shall be currently accepted by POLYGLASS® as qualified to install the materials of this section. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp frozen, dirty or dusty surfaces.

## PART 2 – MATERIALS

A. Underlayment - POLYGLASS® Polystick MTS, A homogeneous rubberized asphalt waterproofing membrane, glass fiber reinforced designed specifically for use as a metal, mechanically attached tile, shingle underlayment. The bottom surface of the sheet has an adhesive compound with split release film for ease of application. TRADENAME: POLYSTICK MTS

B. FINISHED ROOFING SURFACE - Metal, Tile or Shingles, Manufactured by Others.

C. ASPHALT PRIMER - Meeting ASTM D 41 specification, applied in strict conformance to manufacturers recommendations.

D. PRODUCT HANDLING

All materials, except those that are shop fabricated shall be delivered to the job site with their original labels intact. Bulk materials, shall be identified by the manufacturer as to specification issued. All materials shall be stored in accordance with the instructions of the manufacturer prior to their application or installation. No wet or damaged materials will be used in the application. Materials stored on the job site shall be a minimum 4" off the ground of the roof.

Application of all roofing shall be accomplished in such a way that each area will be complete at the end of each day's work. All roof edges and incomplete flashing shall be protected against water entry, particularly between work periods.

When ambient temperature is below 40 DEG. F, care must be exercised in handling and storing POLYGLASS® membrane. Only rolls for immediate application shall be exposed to the elements.

All masonry, concrete and sheet metal surfaces incorporated into the roof system shall be primed with asphalt primer meeting ASTM D-41 specification and allowed to dry prior to installing bituminous roofing materials.

Wood curbs or nailers, where required, shall be pressure treated with accepted pressure treatment meeting AWAP Standard P-5.

## PART 3 – APPLICATION

A. INSTALLATION
Decks: Prime where required, in accordance with requirements and recommendations of the primer & deck manufacturer (if applicable). DensDecking must be primed No Less than two (2) times. Where a vapor retarder, slip or base sheet is required by the specifier: Follow the instructions with regard to the particular materials specified and install in accordance with the recommendations of the manufacturer and the requirements of the architect.

B. MEMBRANE
Cut and unroll the POLYSTICK MTS membrane to a suitable desired length (depending on conditions etc.). Position the material in the desired location on the substrate and proceed as follows; align the membrane at the lowest edge of the roof. Fold the material back onto itself (width wise) and remove the split back release paper from the exposed side, gradually push/roll the material into place (do not lift and drop the material into place, air pockets may occur that will be difficult to remove). Apply even pressure along the entire length of the membrane, from center to outer edges, to avoid air inclusions or wrinkles. Repeat for other side. Position the next sheet by overlapping seams to lineup the overlap of the top sheet edge with the inside of the bottom sheet. After adhering roll, it is recommended that uniform pressure be applied to the entire roll area by a weighted roller or water-filled lawn roller. Care must be taken during rolling on sloped roofs.

C. The rolls of membrane shall be installed perpendicular to the slope of the roof, starting at the lowest point of application, wherever possible. Laps of sheets should be installed to shed water with the slope of the roof wherever practical. At any intersection between different roof slopes, narrow valleys or gutters (less than 3' wide) or similar details, install an additional ply of POLYSTICK MTS, extending minimum 3" onto each surface.

**End of Section**

**SECTION 07210**

**BUILDING INSULATION**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Rigid board cavity wall insulation where shown on drawings or required.

B. Batt insulation used for thermal and sound insulation in stud walls, above lay-in ceiling panels, and where shown on drawings or required.

### 1.2 RELATED WORK

A. Section 07160 – Dampproofing Above Grade

B. Section 07270 – Firestopping and Fire Safing

C. Section 09510 – Acoustical Lay-In Ceiling: Installation of acoustical insulation above lay-in ceiling panels as specified.

D. Division 15 – Mechanical: Duct insulation

### 1.3 SUBMITTALS

A. Product Data:
   1. Manufacturer's literature on each insulation type specified.
   2. Manufacturer's installation instructions for each insulation type specified.

B. Samples: Six (6) inch x six (6) inch piece of rigid insulation for Architect's approval.

C. Certifications:
   1. Manufacturer's certification of compatibility of rigid insulation with dampproofing mastic.
   2. Manufacturers affidavit that materials used in Project contain no asbestos.

### 1.4 COORDINATION

A. Furnish acoustical insulation to acoustical lay-in ceiling contractor for laying insulation above lay-in ceiling panel system specified.

## PART 2 – PRODUCTS

### 2.1 APPROVED MANUFACTURERS/PRODUCTS

A. Specifications are based on any of the manufacturers listed below, with their product in parenthesis for the particular insulation application. Other manufacturers not listed must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 regarding substitutions to be considered.

1. Rigid Wall Insulation:
    a. Extruded Polystyrene Foam Board:
        1) Dow Chemical Co. (Styrofoam Cavitymate Plus)
        2) Owens-Corning (Foamular CW25)
        3) Pactiv Building Products (GreenGuard-SB)
2. Batt Thermal Insulation:
    a. Walls: For use in partition thermal applications.
        1) CertainTeed Corp. (AcoustaTherm)
        2) Guardian Fiberglass, Inc. (Thermal & Sound Control Batts)
        3) Johns-Manville (Thermal-SHIELD Thermal Insulation)
        4) Knauf (QuietTherm Insulation)
        5) Owens-Corning (Thermal Batt Insulation)
3. Batt Acoustical Insulation (Sound Attenuation):
    a. Walls/Ceilings: For use in partition acoustical applications and above lay-in ceilings as specified and where shown on drawings.
        1) CertainTeed Corp. (CertaPro AcoustaTherm)
        2) Guardian Fiberglass, Inc. (Thermal & Sound Control Batts)
        3) Johns-Manville (Sound-SHIELD Sound Control Batts)
        4) Knauf (QuietTherm Insulation)
        5) Owens-Corning (Above Ceiling – Sonobatts; Walls – Sound Batt)
        6) United States Gypsum Co. (Thermafiber Sound Attenuation Fire Blanket (SAFB) Insulation)
4. Safing Insulation: As specified in Section 07270, Fire Stopping and Fire Safing.

## 2.2 MATERIALS

A. Rigid Wall Insulation: (In Exterior Cavity Walls)
1. Extruded Polystyrene Foam Board:
    a. Specification: ASTM C578, Type IV
    b. Thermal Resistance: R=5.0 per inch minimum
    c. Water Absorption (% by volume): 0.1 maximum
    d. Water Vapor Permeance (perm): 1.1 per inch
    e. Compressive Strength: 15 psi minimum
    f. Thickness: 1-1/2 inches, unless shown otherwise
    g. Size: 16 inch x 96 inch sheets

B. Batt Insulation:
1. Thermal Insulation:
    a. Type: ASTM C665, Type 1, unfaced
    b. Thickness/R-Values (minimum):
        1) 3-1/2 inches/R-11 where shown on drawings
        2) 6 inches/R-19 where shown on drawings
    c. Surface Burning Characteristics:
        1) Flame Spread: 25 or less
        2) Smoke Developed: 50 or less
2. Acoustical (Sound Attenuation) Insulation:
    a. Type: ASTM C665, Type 1, unfaced
    b. Surface Burning Characteristics:
        1) Flame Spread: 25 or less
        2) Smoke Developed: 50 or less
    c. Thickness/R-Values (minimum):
        1) 3-1/2 inches/R-11 where shown on drawings
        2) 6 inches/R-19 above lay-in ceiling specified and where shown on drawings.

C. Safing Insulation: As specified in Section 07270, Fire Stopping and Fire Safing.

D. Miscellaneous Materials:
   1. Mechanical Fasteners: Impaling clip of [galvanized steel] with washer retainer and clips, to be adhered or mechanically fastened to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
   2. Adhesive: Type recommended by insulation manufacturer for application.

## PART 3 – EXECUTION

### 3.1 INSULATION

A. Rigid Board Insulation:
   1. Install board insulation at exterior masonry walls in accordance with manufacturer's printed instructions.
   2. Cut insulation to fit snugly around obstructions such as vents, pipe or conduit.
   3. Install board insulation to back-up wall surface secured by veneer wall ties and mastic.
   4. Install board insulation with joints tight to veneer wall ties and to provide full coverage.

B. Batt Insulation (Thermal and Sound):
   1. Walls:
      a. Insulation shall be friction fit between studs and provide full coverage where indicated on drawings.
      b. Insulation shall be tight within spaces in partitions, around cut openings, behind and around electrical and mechanical items within our behind partitions and tight to items passing through partitions.
      c. Wall areas above ceiling: At side wall insulation in ceiling cavity, install adhesive-mounted impaling devices with metal caps at 2 feet-0 inches vertically and at four (4) inches from each side of blankets horizontally. Install blankets with four (4) foot dimension running vertically on spikes, keeping blankets tight to exterior wall without crushing into each other.

C. Safing Insulation: As specified in Section 07270, Fire Stopping and Fire Safing.

**END OF SECTION**

## SECTION 07220

## ROOF AND DECK INSULATION

### PART 1 GENERAL

#### 1.01 DESCRIPTION

A. Work included rigid insulation to be installed over structural roof deck.
B. Related Work Described Elsewhere: I. Building Insulation.

#### 1.02 PRODUCT HANDLING

A. Protection:
   1. Deliver materials to site; store in dry place with labels intact.
   2. Protect materials before, during, and after insulation.
   3. Protect installed work or other trades.
B. Replacements in event of damage, make necessary repairs and replacements.

#### 1.03 QUALITY ASSURANCE

A. Qualifications: A single installer (roofer) shall perform the work of this section; and shall be firm with not less than five years of successful experience in installation of built-up roofing systems similar to those manufacturer of primary roofing materials.
B. Shop Drawings: Submit in accordance with Section 01340 shop drawings on all tapered roof insulation systems, including edge strips and crickets as indicated on the drawings.

### PART 2 PRODUCTS

#### 2.01 PRODUCTS

A. Insulation shall be the product indicated or an equal approved in advance by the Architect.
B. Composite Insulation Board with the OSB Cover-board (Minimum Thickness 3.3 Polyiso, 3.8" total.)
   1. Firestone Roofing: HailGuard Composite Board
   2. Hunter Panels: H-Shield NB
   3. John's Manville: Nail Board
C. Roof Deck Fasteners:
   1. As recommended by manufacturer.
D. Roof Tape:
   1. As recommended by manufacturer.
E. Other Materials: Adhesives, or other materials not specifically described shall be as recommended by the insulation manufacture for the substrate involved.

### PART 3 EXECUTION

#### 3.01 SURFACE CONDITIONS

A. Inspection:
   1. Prior to work of this Section, inspected installed work and verify that the installation may properly commence.
   2. Verify that insulation may be installed in accordance with original design and manufacturer's recommendations.
B. Discrepancies:
   1. In even of discrepancy, notify Architect.
   2. Do not proceed until discrepancies have been resolved.

**3.02 INSTALLATION**

A. Coordinate this section with roof specifications.
B. Set joints tape in hot steep asphalt at 15 lbs. Per 100 sq. ft.
C. Do not leave insulation exposed to weather.
D. Do not apply more insulation that can be covered with finished built-up roofing on the same day.
E. Protect from exposure to fire during storage, transit, and installation.

**3.03 INSPECTION**

A. Verify that insulation work is properly installed and complete.

**END OF SECTION**

**SECTION 07270**

**FIRESTOPPING AND FIRE SAFING**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Non-combustible firestopping and fire safing materials, and accessories as shown on drawings, or if not shown, as required, including, but not limited to the following:
   1. Intumescent Caulks, Elastomerics, Sealants, Compounds, Putties, Joint Sprays, Wrap Strips, and Coatings
   2. Silicone Sealants
   3. Mortar Materials (Cementitious)
   4. Firestopping Foam Materials
   5. Fire Block Materials
   6. Pillow Materials
   7. Mat Materials
   8. Cast-in-place Devices, Collars, and other materials, including fire/smoke stop systems, which meet the specified requirements.

B. General description of the work in this section:
   1. Only tested firestop systems shall be used in specific locations as follows:
      a. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.
      b. Blank openings through fire-rated vertical barriers (wall and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.
      c. Openings and penetrations in fire-rated partitions or walls containing fire doors.
      d. Openings around structural members which penetrate floors or walls.

### 1.2 RELATED WORK

A. Section 03300 – Cast-In-Place Concrete

B. Section 04200 – Masonry

C. Section 07210 – Building Insulation

D. Section 07900 – Building Sealants

E. Section 09100 – Lath and Plaster

F. Section 09250 – Gypsum Wallboard Systems: Wallboard used for fire rated construction.

G. Division 15 – Mechanical: Requirements for penetrations through fire rated construction.

H. Division 16 – Electrical: Requirements for penetrations through fire rated construction.

## 1.3 REFERENCES

A. ASTM International (ASTM)
   1. C665, Standard Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   2. E48, standard Test Method for Surface Burning Characteristics of Building Materials.
   3. E119, Standard Test Methods for Fire Tests of Building Construction and Materials.
   4. E814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
   5. E2174, Standard Practice for On-Site Inspection of Installed Fire Stops

B. National Fire Protection Association (NFPA)
   1. 70, National Electric Code
   2. 101, Life Safety Code

C. Underwriters Laboratories (UL)
   1. 263, Fire Tests of Building Construction and Materials
   2. 1479, Fire Test of Through-Penetration Firestops
   3. 2079, Tests for Fire Resistance of Building Joint Systems
   4. UL Fire Resistance Directory:
      a. Firestop Devices (XHJI)
      b. Fire Resistance Ratings (BXRH)
      c. Through-Penetration Firestop System (XHEZ)
      d. Fill, Voids, or Cavity Material (XHHW)
      e. Forming Materials (XHKU)
      f. Joint Systems (XHBN)

D. International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments.

## 1.4 PERFORMANCE AND QUALITY ASSURANCE REQUIREMENTS

A. Firestopping Materials:
   1. Shall be rated as non-combustible when tested in accordance with ASTM E119 to achieve fire rating noted on the drawings and provide a fire rating equal to that of construction being penetrated. If no such fire rating is noted on the drawings, the fire rating shall be required by the authorities having jurisdiction.
   2. If such materials are used in a through-penetration seal condition, they shall be approved for such use, with all required devices and accessories forming an assembly or included in the test, when tested in accordance with ASTM E814 or UL 1479.
   3. Tests shall be performed by an approved testing agency to indicate compliance with specified requirements and the resulting approval number shall be the latest or current test approved by authorities having jurisdiction. For those firestop applications that exist for which no UL tested system is available through a manufacturer, an engineering judgment derived from similar UL system designs or other test will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment drawings must follow requirements set forth by the International Firestop Council.

B. Fire Safing Materials:
   1. Shall be tested and rated non-combustible to achieve fire rating noted on the drawings, or if not noted, as required by authorities having jurisdiction.

2. If such materials are used in an assembly, they shall be approved for such use, with all required devices and accessories forming an assembly or including in the test.
3. Tests shall be performed by an approved testing agency to indicate compliance with specified requirements and the resulting approval number shall be the latest or current test approved by authorities having jurisdiction.
4. Proposed fire safing materials and methods shall conform to applicable governing codes having local jurisdiction.

C. Definitions: As they appear in this Section:
1. Combustible: Penetrations composed of any material which will burn or melt in a fire, including, but not limited to the following:
   a. Nonmetallic pipes made of glass or plastic.
   b. Metallic pipes made of lead or aluminum.
   c. Electrical, data, communication, security, and telephone cables.
2. Non-combustible: Penetrations composed of any material which will not burn or melt in a fire, including, but not limited to the following:
   a. Metallic pipes made of steel, iron or copper.
3. Approved Testing Agencies: UL or other testing agency licensed and equipped to conduct the required fire tests and approved by authorities having jurisdiction.
4. Authorities Having Jurisdiction: Shall be the person or entity responsible for applicable governing code enforcement.

D. Manufacturer Qualifications: Those listed in Paragraph 2.1, A, or company specializing in manufacturing the products specified in this Section with minimum of five (5) years experience. Refer Division 1 for substitutions.

E. Installer Qualifications: Company specializing in performing the Work of this Section with minimum three (3) years experience installing tested and classified firestop and fire safing systems or manufacturer certification and approval.

F. Standards: All firestop and fire safing systems shall have a flame (F) rating and temperature (T) rating conforming to applicable building codes and in accordance with Drawings and Specification.

G. Single Source Responsibility: Obtain firestopping and fire safing materials from a single manufacturer for each different product required.

H. No firestopping or fire safing material shall be concealed or covered until they have been observed and approved for use by the Architect and/or authorities having jurisdiction.

## 1.5 CONTRACTOR'S RESPONSIBILITIES

A. As scope and performance documents, the Drawings and Specifications do not necessarily indicate or describe all the Work required for the performance and completion of the Work. Contracts will be let on the basis of such documents with the understanding that the Contractor shall furnish and install the items required for proper completion of the Work without adjustment to price or schedule. Work shall be of sound, quality construction and the Contractor shall be solely responsible for the inclusions of adequate labor and materials to cover the proper and timely furnishing and installation of the firestopping and fire safing indicated, described, or implied.

B. As a performance specification, the criteria for the solution of the firestopping and fire safing indicated on the Drawings or specified herein are for the sole purpose of defining

the design intent and performance requirements. The details shown, if any, are intended to emphasize the acceptable performance requirements for this Project. To avoid any misunderstanding or lack of interpretation, the Contractor is hereby advised that the responsibility for all firestopping and fire safing are totally his and that designs and resolutions proposed by the contractor through his submittals and related documentation shall be demonstrated throughout the Work and warranty period specified herein.

C. Design proposal submissions which follow exactly the details indicated on the Drawings, will not relieve the Contractor of his responsibility for the design, furnishing, installation, or performance of the Work of this Section.

D. In the event of a controversy over any requirements of this Section, the decision of the Architect will take precedence.

## 1.6 SUBMITTALS

A. Product Data:
   1. Manufacturer's technical data on product characteristics, performance, and limitation criteria for each material including UL firestop systems to be used.
   2. Manufacturer's installation instructions.
   3. Manufacturer's Material Data Sheets (MSDS)

B. Shop Drawings: Manufacturer's shop drawings or detail sheets indicating each condition that requires a penetration or joint seal. Details must be in accordance with the proposed approved system. Include materials to be used, anchorage, methods of installation and relationship to all adjacent construction.

C. Manufacturer's engineering judgment identification number and drawing details when no UL system is available for an application. Engineering judgment must include both project name and contractor's name who will install firestop system as described in drawing.

D. Certifications:
   1. Manufacturer's certification of compliance indicating approval of authorities having jurisdiction for combustibility and use of materials, and that their installation conforms to shown or required fire rating.
   2. Manufacturers affidavit that materials used in Project contain no asbestos.

## 1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver and store materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type, and UL label where applicable.

B. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at job-site.

C. Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements, including temperature restrictions.

D. Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

E. Do not use damaged or expired materials.

## 1.8 INSTALLER QUALIFICATIONS

A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer's products per specified requirements. A manufacturer's willingness to sell its firestopping products to the contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

B. Installer Training: A manufacturer's direct representative (not distributor or agent) to be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. This will be done per manufacturer's written recommendations published in their literature and drawing details.

## 1.9 REGULATORY REQUIREMENTS

A. Conform fire resistance ratings and surface burning characteristics of authorities having jurisdiction.

B. Provide certificate of compliance from manufacturer indicating approval of authorities having jurisdiction for combustibility and use of materials, and that their installation conforms to shown or required fire rating.

## 1.10 ENVIRONMENTAL REQUIREMENTS

A. Do not use materials that contain flammable solvents.

B. Verify existing conditions and substrates before stating work. Correct unsatisfactory conditions before proceeding.

C. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

D. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

E. Provide ventilation in areas to receive solvent cured materials.

## 1.11 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requirements

## 1.12 SEQUENCING

A. Sequence Work to permit firestopping and fire safing materials to be installed after adjacent and surrounding work is complete.

## 1.13 WARRANTY

A. Warrant the work specified herein for two (2) years against becoming unserviceable or causing an objectionable appearance resulting from either defective or non-conforming materials and workmanship.

B. Defects shall include, but not be limited to:

1. Use of incorrect material within the installation.
2. No mineral wool insulation within a system that requires it.
3. Use of mineral wool insulation when ceramic fiber insulation is required.
4. Incorrect amount of material is installed within system.
5. No use of an accessory seal within a system that requires one.
6. Use of an incorrect system with a firestop or fire safing installation
7. Failure to meet specified performance or quality assurance requirements.

## PART 2 – PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS/PRODUCTS

A. Subject to compliance with through penetration firestop systems listed in Volume II of the UL Fire Resistance Directory (XHEZ), manufacturers specified are approved for use in the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1.
   1. Hilti, Inc.
   2. Nelson Firestop Products
   3. Tremco Inc.
   4. 3M Fire Protection Products

B. To maintain clarity of products, specifications are based on specified products manufactured by Hilti, Inc.; Tulsa, OK. Listed manufacturers providing equivalent products are acceptable for use on this project.

C. It is recognized that the manufacturers listed may not produce all of the specified types of products, therefore, products from several manufacturers may be used throughout the project as long as consistent use of each individual product is maintained throughout the project, they meet the requirements specified herein for the intended use, and are approved for that use by authorities having jurisdiction. Products which are combined to form a UL listed assembly must be provided as tested and approved as shown in the Fire Resistance Directory.

### 2.2 MATERIALS AND COMPONENETS

A. General:
   1. Any of the following materials, either by itself or in combination with other materials may be used on the Project provided they:
      a. Satisfy the firestopping and fire safing requirements for use in the required application on the Project.
      b. Meet the performance and quality assurance requirements specified herein.
      c. Are approved for use in that application by the authorities having jurisdiction.
   2. Materials shall comply with ASTM E814 (UL 1479) or ASTM E119 (UL 263), and shall be manufactured of non-toxic, non-hazardous, asbestos free materials. Product shall bear proper independent test laboratory label/logo and shall conform to construction assembly type, penetrating item type, annular space requirements, and fire rating involved for each separate instance.

B. Primers: Conform to firestop manufacturer's recommendations for primers required for various substrates and conditions.

C. Back-Up (Damming) Materials: Conform to firestop manufacturer's recommendations for back-up (damming) materials. Material may be removable or permanent as recommended by manufacturer to suit application and as required by UL testing or other testing agency approved by authorities having jurisdiction.

D. Retainers: Steel angles, clips, sheet metal, and impaling fasteners to support damming material and fire safing material and where required by UL testing or other testing agency approved by authorities having jurisdiction.

E. Adhesives and Fasteners: Conform to firestop manufacturer's recommendations for adhesives and fasteners required for various substrates and conditions and to suit intended use. Materials must conform to those required by UL testing or other testing agency approved by authorities having jurisdiction.

F. Firestopping Fill, Void, and Cavity Materials: Shall conform to those required by UL testing or other testing agency approved by authorities having jurisdiction, including, but not be limited to the following. Refer to list of approved manufacturers:

1. Cast-in place firestop devices for use with combustible and non-combustible pipes (closed and open piping systems) and penetrating concrete floors, the following products are acceptable:
    a. "CP 680 Cast-In Place Firestop Device" manufactured by Hilti, Inc.
        1) Add Aerator adaptor when used in conjunction with aerator ("sovent") system.
    b. "CP 681 Tub Box Kit" for use with tub installations manufactured by Hilti, Inc.
    c. "CP 682 Cast-In Place Firestop Device" for use with noncombustible penetrants manufactured by Hilti, Inc
2. Sealants, caulking materials, or foams for use with non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following products are acceptable:
    a. "FS-ONE Intumescent Firestop Sealant" manufactured by Hilti, Inc.
    b. "CP 604 Self-leveling Firestop Sealant" manufactured by Hilti, Inc.
    c. "CP 620 Fire Foam" manufactured by Hilti, Inc.
    d. "CP 606 Flexible Firestop Sealant" manufactured by Hilti, Inc.
    e. "CP 601s Elastomeric Firestop Sealant" manufactured by Hilti, Inc.
3. Sealants or caulking materials for use with sheet metal ducts, the following products are acceptable:
    a. "CP 601s Elastomeric Firestop Sealant" manufactured by Hilti, Inc.
    b. "CP 606 Flexible Firestop Sealant" manufactured by Hilti, Inc.
    c. "FS-ONE Intumescent Firestop Sealant" manufactured by Hilti, Inc.
4. Intumescent sealants, caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe, the following products are acceptable:
    a. "FS-ONE Intumescent Firestop Sealant" manufactured by Hilti, Inc.
5. Foams, Intumescent sealants, or caulking materials for use with flexible cable or cable bundles, the following products are acceptable:
    a. "FS-ONE Intumescent Firestop Sealant" manufactured by Hilti, Inc.
    b. "CP 620 Fire Foam" manufactured by Hilti, Inc.
    c. "CP 601s Elastomeric Firestop Sealant" manufactured by Hilti, Inc.
    d. "CP 606 Flexible Firestop Sealant" manufactured by Hilti, Inc.
6. Non curing, re-penetrable, intumescent putty or foam materials for use with flexible cable or cable bundles, the following precuts are acceptable:

a. “CP 618 Firestop Putty Stick: manufactured by hilti, Inc.
b. “CP 658T Firestop Plub” manufactured by Hilti, Inc.

7. Wall opening protective materials for use with UL listed metallic and specified nonmetallic outlet boxes, the following products are acceptable:
   a. “CP 617 Firestop Putty Pad” manufactured by Hilti, Inc.
8. Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed and open piping systems), the following products are acceptable:
   a. “CP 643N Firestop Collar” manufactured by Hilti, Inc.
   b. “CP 644 Firestop Collar” manufactured by Hilti, Inc.
   c. “CP 645/648 Wrap Strips” manufactured by Hilti, Inc.
9. Materials used for large openings and complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:
   a. “CP 637 Firestop Mortar” manufactured by Hilti, Inc.
   b. “FS 657 FIRE BLOCK” manufactured by Hilti, Inc.
   c. “CP 620 Fire Foam” manufactured by Hilti, Inc.
   d. “CP 675T Firestop Board” manufactured by Hilti, Inc.
10. Non curing, re-penetrable materials used for large openings and complex penetrations made to accommodate cable trays and bundles, multiple steel and copper pipes, electrical busways in raceways, the following products are acceptable:
    a. “FS 657 FIRE BLOCK” manufactured by Hilti, Inc.
    b. “CP 675T Firestop Board” manufactured by Hilti, Inc.
11. For blank openings made in fire-rated wall or floor assemblies, where future penetration of pipes, conduits, or cables is expected, the following products are acceptable:
    a. “FS 657 FIRE BLOCK” manufactured by Hilti, Inc.
    b. “CP 658T Firestop Plub” manufactured by Hilti, Inc.

G. Fire Related Construction Joints and Other Gaps:
1. “CP 601S Elastomeric Firestop Sealant” manufactured by Hilti, Inc.
2. “CP 606 Flexible Firestop Sealant” manufactured by Hilti, Inc.
3. “CP 672 Firestop Joing Speed Spray” manufactured by Hilti, Inc.

H. Fire Safing Materials: Comply with ASTM C665, Type I, high-melt mineral-fiber insulation with minimum nominal density of 4.0 lbs per cubic foot and having a maximum flame spread rating of 15 and smoke developed rating of 0. Size shall be 4 inches thick by 24 inches wide by 48 inches long, unless noted otherwise. Products containing asbestos strictly prohibited.
1. “Thermafiber Safing Insulation” manufactured by Thermafiber, Inc.
2. “Fibrex Safing Insulation” manufactured by Fibrex Insulations, Inc.
3. “Delta Safing Board” manufactured by Rock Wool Manufacturing Company.

I. Jacketing (For use with fire protection board): 0.016 inch aluminum or 0.010 inch stainless steel roll jacketing as shown, or if not shown, as required where high traffic requires high durability and good appearance, and as directed by Architect.

## PART 3 – EXECUTION

### 3.1 EXAMINATION

A. Examine joints and openings indicated or required to receive firestop and fire safing materials, for compliance with requirements for proper configuration, installation



tolerances and other conditions affecting firestop and fire safing performance.

B. Do not proceed with installation until unsatisfactory conditions are corrected.

C. Beginning installation shall indicate acceptance of existing conditions. Work found to be defective or deficient due to uncorrected existing conditions prior to installation should be repaired or replaced at no additional expense to Owner.

## 3.2 PREPARATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
   1. Verify penetrationis are properly sized and in suitable condition for application of materials.
   2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
   3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
   4. Install back-up (damming) materials to arrest liquid material leakage.
   5. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.

## 3.3 COORDINATION

A. Coordinate location and proper selection of cast-in-place Firestop Devices with trade responsible for the work. Ensure device is installed before placement of concrete.

B. Responsible trades to provide adequate spacing of field run pipes to allow for installation of cast-in-place firestop devices without interferences.

## 3.4 INSTALLATION

A. General:
   1. Install firestop and fire safing materials in accordance with manufacturer's recommendations to provide F and T ratings as required by authorities having jurisdiction.
   2. Install firestop materials in accordance with UL Fire Resistance Directory.
   3. Install firestop and fire safing materials with sufficient pressure to properly fill and seal openings, then tool or trowel exposed surfaces.

B. Firestopping Materials:
   1. Install primer and firestopping material in sufficient thickness, with required accessories to achieve rating, to uniform density and texture, in accordance with manufacturer's instructions and authorities having jurisdiction.
   2. Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit and other items requiring firestopping.
   3. Consult with mechanical engineer, and damper manufacturer prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
   4. Remove dam material after firestopping material has cured or allow dam material to remain if required to maintain fire rating integrity or required by authorities having jurisdiction.
   5. Do not conceal or enclose any firestopping materials until they have been



examined and approved for use by the Architect and authorities having jurisdiction.

C. Fire Safing Materials:
   1. Install fire safing in sufficient thickness, with retainer materials where shown or required to achieve fire rating in accordance with manufacturer's instructions and authorities having jurisdiction.
   2. Do not conceal or enclose any fire safing materials until they have been examined and approved for use by the Architect and authorities having jurisdiction.

D. Fire Protection Board Materials:
   1. Install fire protection board in proper type, size, and density, with adhesives, fasteners, and jacketing materials where shown or required to achieve fire rating in accordance with manufacturer's instructions and authorities having jurisdiction.
   2. Do not conceal or enclose any fire protection board materials until they have been examined and approved for use by the Architect and authorities having jurisdiction.

## 3.5 PROTECTION OF FINISHED WORK

A. Protect adjacent surfaces from damage by material installation.

## 3.6 CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

## 3.7 FIELD QUALITY CONTROL

A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing area.

B. Keep areas of work accessible until inspection by applicable code authorities.

C. Inspection of through-penetration firestopping shall be performed in accordance with ASTM E2174, "Standard Practice for On-Site Inspection of Installed Fire Stops".

D. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

**END OF SECTION**

SECTION 074113

METAL ROOF PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Mechanically-seamed, standing seam metal roof panels, with related metal trim and accessories.

1.2 RELATED SECTIONS

A. Section 07220 "Roof and Deck Insulation" for thermal insulation installed under metal panels.

B. Section 07175 "Self Adhering Roof Underlayment" for air barriers within roof assembly and adjacent to roof assembly.

C. Section 07410 "Metal Wall Panels" for factory-formed metal wall panels.

D. Section 074293 “Soffit and Liner Panels” for factory-formed soffit panels.

E. Section 07611 "Prefabricated Metal Building Roof Curbs" for formed sheet metal curbs for roof accessories.

F. Section 07620 "Sheet Metal Flashing and Trim" for manufactured copings, reglets, and roof drainage items in addition to items specified in this Section.

G. Division 07900 "Building Sealants" for field-applied joint sealants.

1.3 REFERENCES

A. American Architectural Manufacturer's Association (AAMA): www.aamanet.org:

1. AAMA 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.
2. AAMA 809.2 - Voluntary Specification Non-Drying Sealants.

B. American Society of Civil Engineers (ASCE): www.asce.org/codes-standards:

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International (ASTM): www.astm.org:

1. ASTM A 653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM A 755 - Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
3. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
4. ASTM A 980 - Standard Specification for Steel, Sheet, Carbon, Ultra High Strength Cold Rolled.

5. ASTM C 645 - Specification for Nonstructural Steel Framing Members.
6. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
7. ASTM D 1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics.
8. ASTM D 2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
9. ASTM D 4214 - Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.
10. ASTM E 1514 - Standard Specification for Structural Standing Seam Steel Roof Panel Systems.
11. ASTM E 1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
12. ASTM E 1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
13. ASTM E 1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.
14. ASTM E 1980 - Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

D. FM Global (FM): www.fmglobal.com:

1. ANSI/FM 4471 - Approval Standard for Class 1 Panel Roofs.

E. International Accreditation Service (IAS):

1. IAS AC 472 - Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems, Part B.

F. Underwriters Laboratories, Inc. (UL): www.ul.com:

1. UL 580 - Tests for Uplift Resistance of Roof Assemblies

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Prior to erection of framing, conduct preinstallation meeting at site attended by Owner, Architect, manufacturer's technical representative, inspection agency and related trade contractors.

1. Coordinate building framing in relation to metal panel system.
2. Coordinate openings and penetrations of metal panel system.
3. Coordinate work of Division 07 Sections "Roof Specialties" and "Roof Accessories" and openings and penetrations and manufacturer's accessories with installation of metal panels.

1.5 QUALITY ASSURANCE

A. Manufacturer/Source: Provide metal roof panel assembly and accessories from a single manufacturer providing fixed-base roll forming, and accredited under IAS AC 472 Part B.

B. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum five years experience in manufacture of similar products in successful use in similar applications.

1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:

a. Product data, including certified independent test data indicating compliance with requirements.
b. Samples of each component.
c. Sample submittal from similar project.
d. Project references: Minimum of five installations not less than five years old, with Owner and Architect contact information.
e. Sample warranty.
f. IAS AC 472 certificate.

2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
3. Approved manufacturers must meet separate requirements of Submittals Article.

C. Installer Qualifications: Experienced Installer certified by metal panel manufacturer with minimum of five years experience with successfully completed projects of a similar nature and scope.

1. Installer's Field Supervisor: Experienced mechanic certified by metal panel manufacturer supervising work on site whenever work is underway.

1.6 ACTION SUBMITTALS

A. Product Data: Manufacturer’s data sheets for specified products.

B. Shop Drawings: Show layouts of metal panels. Include details of each condition of installation, panel profiles, and attachment to building. Provide details at a minimum scale 1-1/2-inch per foot of edge conditions, joints, fastener and sealant placement, flashings, openings, penetrations, roof accessories, lightning arresting equipment, and special details. Make distinctions between factory and field assembled work.

1. Indicate points of supporting structure that must coordinate with metal panel system installation.
2. Include data indicating compliance with performance requirements.
3. Include structural data indicating compliance with requirements of authorities having jurisdiction.

C. Samples for Initial Selection: For each exposed product specified including sealants. Provide representative color charts of manufacturer's full range of colors.

D. Samples for Verification: Provide 24-inch-long section of each metal panel profile. Provide color chip verifying color selection.

1.7 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Indicating compliance of products with requirements, witnessed by a professional engineer.

B. Qualification Information: For Installer firm and Installer’s field supervisor.

C. IAS Accreditation Certificate: Indicating that manufacturer is accredited under provisions of IAS AC 472.

D. Manufacturer's Warranty: Sample copy of manufacturer's standard warranty.

1.8 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Manufacturer's Warranty: Executed copy of manufacturer's standard warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect products of metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage. Protect panels and trim bundles during shipping.

1. Deliver, unload, store, and erect metal panel system and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.
2. Store in accordance with Manufacturer's written instructions. Provide wood collars for stacking and handling in the field.

1.10 COORDINATION

A. Coordinate sizes, profiles, and locations of roof curbs and other roof-mounted equipment and roof penetrations, based upon sizes of actual selected equipment.

1.11 WARRANTY

A. Special Manufacturer’s Warranty: On manufacturer’s standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail in materials and workmanship within one year from date of Substantial Completion.

B. **Special Weathertightness Warranty**: On manufacturer’s standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail to remain weathertight, including leaks, up to cost limitation of seven dollars ($7.00) per square foot of covered area within 20 years from date of Substantial Completion.

C. Special Panel Finish Warranty: On Manufacturer’s standard form, in which Manufacturer agrees to repair or replace metal panels that evidence deterioration of factory-applied finish within 25 years from date of Substantial Completion, including:

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design Manufacturer: **MBCI Metal Roof and Wall Systems, Division of NCI Group, Inc.**; Houston TX. Tel: (877)713-6224; Email: info@mbci.com; Web: www.mbci.com.

1. Provide basis of design product**[**, or comparable product approved by Architect prior to bid**]**.

2.2 PERFORMANCE REQUIREMENTS

A. General: Provide metal roof panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.

B. System Performance: Comply with ASTM E 1514 and requirements of this Section.

C. Structural Performance: Provide metal panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated:

1. Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings.

a. Wind Uplift Testing: Certify capacity of metal panels by actual testing of proposed assembly per ASTM E 1592.

2. Snow Loads: **[**As indicated**]**.
3. Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of **[**1/180**]** of the span with no evidence of failure.
4. Seismic Performance: Comply with ASCE 7, Section 9, "Earthquake Loads."

D. Wind Uplift Resistance: Comply with UL 580 for wind-uplift class UL-90 with prescriptive increases at perimeter and corner conditions.

Specifier: Retain FM Approvals' listing requirement for FM Global-insured projects or where FM Global requirements are used as minimum design standard. Select required windstorm classification based upon calculation method in FM Global Loss Prevention Data Sheet 1-28; note that FM Approvals' windstorm classification does not correlate directly to design wind speed.

E. **FM Approvals Listing**: Comply with FM Approvals 4471 as part of a panel roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 construction. Identify materials with FM Approvals markings.

1. Fire/Windstorm Classification: Class 1A-90 with prescriptive increases at perimeter and corner conditions.
2. Hail Resistance Rating: SH.

F. **Florida State Building Code Compliance**: Comply with requirements of Florida State Building Code. www.floridabuilding.org/pr/pr_app_srch.aspx

G. Air Infiltration, ASTM E 1680: Maximum 0.09 cfm/sq. ft. (0.457 L/s per sq. m) at static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa).

H. Water Penetration Static Pressure, ASTM E 1646: No uncontrolled water penetration at a static pressure of 12 lbf/sq. ft. (575 Pa).

I. Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

## 2.3 METAL ROOF PANELS

A. Mechanically-seamed, Concealed Fastener, Metal Roof Panels: Structural metal roof panel consisting of formed metal sheet with vertical ribs at panel edges, installed by lapping and mechanically interlocking edges of adjacent panels, and attaching panels to supports using concealed clips and fasteners in a weathertight installation.

1. Basis of Design: **MBCI, SuperLok,** www.mbci.com/superlok.html.

2. **Aluminum-Zinc Alloy-Coated Steel Sheet**: ASTM A 792/A 792M, structural quality, Grade 50, Coating Class AZ55 unpainted Galvalume Plus coating.

   a. Nominal Coated Thickness: 0.028 inch/24 gage (0.71 mm)
   b. Panel Surface: Smooth with striations in pan
   c. Exterior Finish: Exposed Galvalume Plus coating

3. Panel Width: **[**16 inches (406 mm)**]**.
4. Panel Seam Height: 2 inch (50.8 mm).
5. Joint Type: Mechanically seamed.

2.4 METAL ROOF PANEL ACCESSORIES

A. General: Provide complete metal roof panel assembly incorporating trim, copings, fasciae, gutters and downspouts, and miscellaneous flashings, in profiles as indicated. Provide required fasteners, closure strips, thermal spacers, splice plates, support plates, and sealants as indicated in manufacturer's written instructions.

B. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.

C. Panel Clips: Provide panel clip of type specified, at spacing indicated on approved shop drawings.
   1. **Two-piece Floating**: ASTM C 645, with ASTM A 653/A 653M, G90 hot-dip galvanized zinc coating, configured for concealment in panel joints, and identical to clips utilized in tests demonstrating compliance with performance requirements.
   2. **Single-Piece Fixed**: ASTM C 645, with ASTM A 653/A 653M, G90 hot-dip galvanized zinc coating, configured for concealment in panel joints, and identical to clips utilized in tests demonstrating compliance with performance requirements.

D. Panel Fasteners: Self-tapping screws and other acceptable fasteners recommended by roof panel manufacturer. Where exposed fasteners cannot be avoided, supply long life fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.

E. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:

   1. Factory-Applied Seam Sealant: Manufacturer's standard hot-melt type.
   2. Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.
   3. Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.

F. **Roof Accessories**: Approved by metal roof panel manufacturer. Refer to Section 07 72 00 "Roof Accessories" for requirements for curbs, equipment supports, roof hatches, heat and smoke vents, ventilators, and preformed flashing sleeves.

2.5 FABRICATION

A. General: Provide factory fabricated and finished metal panels and accessories meeting performance requirements, indicated profiles, and structural requirements.

B. Fabricate metal panel joints configured to accept factory-applied sealant providing weathertight seal and preventing metal-to-metal contact and minimizing noise resulting from thermal movement.

C. Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings. Form from materials matching metal panel substrate and finish.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine metal panel system substrate and supports with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panel installation.

1. Inspect metal panel support substrate to determine if support components are installed as indicated on approved shop drawings. Confirm presence of acceptable supports at recommended spacing to match installation requirements of metal panels.
2. Panel Support Tolerances: Confirm that panel supports are within tolerances acceptable to metal panel system manufacturer but not greater than the following:

    a. 1/4 inch (6 mm) in 20 foot (6.1 m) in any direction.
    b. 3/8 inch (9 mm) over any single roof plane.

B. Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal roof panel system installation.

### 3.2 PREPARATION

A. **Miscellaneous Supports**: Install subframing, girts, furring, and other miscellaneous panel support members according to ASTM C 754 and manufacturer's written instructions.

B. Flashings: Install flashings to cover exposed underlayment per Section 07 62 00 "Sheet Metal Flashing and Trim."

### 3.3 METAL PANEL INSTALLATION

A. Mechanically-Seamed, Standing Seam Metal Roof Panels: Install weathertight metal panel system in accordance with manufacturer's written instructions, approved shop drawings, and project drawings. Install metal roof panels in orientation, sizes, and locations indicated, free of waves, warps, buckles, fastening stresses, and distortions. Anchor panels and other components securely in place. Provide for thermal and structural movement.

B. Attach panels to supports using clips, screws, fasteners, and sealants recommended by manufacturer and indicated on approved shop drawings.

1. Fasten metal panels to supports with concealed clips at each location indicated on approved shop drawings, with spacing and fasteners recommended by manufacturer.
2. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
3. Provide weatherproof jacks for pipe and conduit penetrating metal panels of types recommended by manufacturer.

4. Dissimilar Materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by manufacturer.

3.4 ACCESSORY INSTALLATION

A. General: Install metal panel trim, flashing, and accessories using recommended fasteners and joint sealers, with positive anchorage to building, and with weather tight mounting. Provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal panel assembly, including trim, copings, flashings, sealants, closure strips, and similar items.
2. Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.
3. Provide concealed fasteners except where noted on approved shop drawings.
4. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

B. Joint Sealers: Install joint sealers where indicated and where required for weathertight performance of metal panel assemblies, in accordance with manufacturer's written instructions.

1. Prepare joints and apply sealants per requirements of Division 07 Section "Joint Sealants."

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Engage an independent testing and inspecting agency acceptable to Architect to perform field tests and inspections and to prepare test reports.

3.6 CLEANING AND PROTECTION

A. Remove temporary protective films immediately in accordance with metal roof panel manufacturer's instructions. Clean finished surfaces as recommended by metal roof panel manufacturer.

B. Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Architect.

END OF SECTION

**SECTION 074293**

**SOFFIT AND LINER PANELS**

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

A. Flush-profile, concealed fastener, lap-seam metal soffit and liner panels, with related metal trim and accessories.

### 1.2 RELATED REQUIREMENTS

A. Division 07 Section "Thermal Insulation" for thermal insulation installed under metal panels.

B. Division 07 Section "Air Barriers" for air barriers within metal panel assembly and adjacent to metal panel assembly.

C. Division 07 Section "Metal Roof Panels" for metal roof panels installed with metal soffit and liner panels.

D. Division 07 Section "Metal Wall Panels" for metal wall panels installed with metal soffit and liner panels.

E. Division 07 Section "Sheet Metal Flashing and Trim" for sheet metal flashing items in addition to items specified in this Section.

### 1.3 REFERENCES

A. American Architectural Manufacturer's Association (AAMA): www.aamanet.org:

1. AAMA 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.
2. AAMA 809.2 Voluntary Specification Non-Drying Sealants.

B. American Society of Civil Engineers (ASCE): www.asce.org/codes-standards:

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International (ASTM): www.astm.org:

1. ASTM A755 - Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
2. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
3. ASTM C920 - Specification for Elastomeric Joint Sealants.
4. ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
5. ASTM D4214 - Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.
6. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

D. International Accreditation Service (IAS):

1. IAS AC472 Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems, Part B.

## 1.4 QUALITY ASSURANCE

A. Manufacturer/Source: Provide metal panel assemblies and accessories from a single manufacturer accredited under IAS AC472, Part B.

B. Installer Qualifications: Experienced Installer [certified by metal panel manufacturer] with minimum of five years experience with successfully completed projects of a similar nature and scope.

1. Installer's Field Supervisor: Experienced mechanic [certified by metal panel manufacturer] supervising work on site whenever work is underway.

C. Buy American Compliance: Materials provided under work of this Section shall comply with the following requirements:

1. Buy American Act of 1933 BAA-41 U.S.C §§ 10a – 10d.
2. Buy American provisions of Section 1605 of the American Recovery and Reinvestment Act of 2009 (ARRA).

D. Steel Construction Publications: Comply with published recommendations in the following, unless more stringent requirements are indicated.

1. American Institute of Steel Construction (AISC): "Steel Construction Manual."
2. American Iron and Steel Institute (AISI): "Cold Formed Steel Design Manual."

## 1.5 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Prior to erection of framing, conduct preinstallation meeting at site attended by Owner, Architect, metal panel installer, metal panel manufacturer's technical representative, inspection agency and related trade contractors.

1. Coordinate building framing in relation to metal panel system.
2. Coordinate openings and penetrations of metal panel system.
3. Coordinate work of Division 07 Sections "Roof Specialties" and "Roof Accessories" and openings and penetrations and manufacturer's accessories with installation of metal panels.

## 1.6 ACTION SUBMITTALS

A. Product Data: Manufacturer’s data sheets for specified products. Include data indicating compliance with performance requirements.

B. Shop Drawings: Show layouts of metal panels. Include details of each condition of installation, panel profiles, and attachment to building. Provide details at a minimum scale 1-1/2-inch per foot of edge conditions, joints, fastener and sealant placement, flashings, openings, penetrations, and special details. Make distinctions between factory and field assembled work.

1. Indicate points of supporting structure that must coordinate with metal panel system installation.

2. Include structural data indicating compliance with performance requirements and requirements of local authorities having jurisdiction.

C. Samples for Initial Selection: For each exposed product specified including sealants. Provide representative color charts of manufacturer's full range of colors.

D. Samples for Verification: Provide 12-inch long section of each metal panel profile. Provide color chip verifying color selection.

## 1.7 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Indicating compliance of products with requirements.

B. Qualification Information: For Installer firm and Installer's field supervisor.

C. IAS Accreditation Certificate: Indicating that manufacturer is accredited under provisions of IAS AC472 Part B.

D. Buy American Certification: Manufacturers' letters of compliance acceptable to authorities having jurisdiction, indicating that products comply with requirements.

E. Manufacturer's warranty: Unexecuted sample copy of manufacturer's warranty.

## 1.8 CLOSEOUT SUBMITTALS

A. Maintenance data.

B. Manufacturer's Warranty: Executed copy of manufacturer's warranty.

## 1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect products of metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage. Protect panels and trim bundles during shipping.

1. Deliver, unload, store, and erect metal panels and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.
2. Store in accordance with Manufacturer's written instruction. Provide wood collars for stacking and handling in the field.
3. Shield foam insulated metal panels from direct sunlight until installation.

## 1.10 WARRANTY

A. Special Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace metal panel assemblies that fail in materials and workmanship within [one] year from date of Substantial Completion.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURER

A. Basis of Design Manufacturer: MBCI Metal Roof and Wall Systems, Division of NCI Group, Inc.; Houston TX. Tel: (877)713-6224; Email: info@ecoficientseries.com; Web: www.mbci.com.

1. Provide basis of design product or comparable product approved by Architect prior to bid.

## 2.2 PERFORMANCE REQUIREMENTS

A. General: Provide metal panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.

B. Structural Performance: Provide metal panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated, as determined by ASTM E1592:

1. Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings.

    a. Wind Negative Pressure: Certify capacity of metal panels by actual testing of proposed assembly.

2. Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of 1/120 of the span with no evidence of failure.
3. Seismic Performance: Comply with ASCE 7 Sections 9, "Earthquake Loads."

**C.** Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

## 2.3 FORMED METAL SOFFIT AND LINER PANELS

A. Flush-Profile, Concealed Fastener Metal Soffit and Liner Panels: Metal panels consisting of formed metal sheet with vertical panel edges, with flush joints between panels, field assembled with nested lapped edges, and attached to supports using concealed fasteners.

1. Basis of Design: MBCI, Artisan Series Panels.
2. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792/A792M, structural quality, Grade 50, Coating Class AZ55 pre-painted by the coil-coating process per ASTM A755/A755M.

    a. Nominal Thickness: 0.023 inch/24 gage coated thickness, with smooth surface.

        1) Exterior Finish: Exposed Galvalume Plus coating.

3. Panel Width: 12 inches
4. Panel Thickness: 1 inch

## 2.4 MISCELLANEOUS MATERIALS

A. General: Provide complete metal panel assemblies incorporating trim, fasciae, and miscellaneous flashings. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.

B. Flashing and Trim: Match material, thickness, and finish of metal panels.

C. Fasteners: Self-tapping screws and other acceptable fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply corrosion-resistant fasteners with heads matching color of metal panels by means of factory-applied coating, with weathertight resilient washers.

D. Panel Sealants:

1. Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.
2. Elastomeric Joint Sealant: Urethane sealant, single-component, ASTM C920 Type S, Grade NS, Class 25, Use NT, A, M, G, O.

## 2.5 FABRICATION

A. General: Provide factory fabricated and finished metal panels, trim, and accessories meeting performance requirements, indicated profiles, and structural requirements.

B. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings.

## 2.6 FINISHES

A. Finishes, General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

B. Modified Silicone-Polyester Two-Coat System: 0.20 – 0.25 mil primer with 0.7 – 0.8 mil color coat[, meeting solar reflectance index requirements].

1. Basis of Design: MBCI, Signature 200.

C. Fluoropolymer Two-Coat System: 0.2 – 0.3 mil primer with 0.7 - 0.8 mil 70 percent PVDF fluoropolymer color coat, AAMA 621[, meeting solar reflectance index requirements].

1. Basis of Design: MBCI, Signature 300.

D. Interior Face Sheet Coil-Coated Finish System:

1. Silicone Polyester Two-Coat System: 0.20 – 0.25 mil primer with 0.7 – 0.8 mil color coat.
   a. Basis of Design: MBCI, USDA White.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Examine metal panel system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panels.

1. Inspect framing that will support insulated metal panels to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to metal panel manufacturer and installer. Confirm presence of acceptable framing members at recommended spacing to match installation requirements of metal panels.
2. Panel Support Tolerances: Confirm that metal panel supports are within tolerances acceptable to metal panel manufacturer but not greater than the following:

   a. At Rafter Spacing 24 inches or More: 1/8 inches out only.

b. At Rafter Spacing Less Than 24 inches: 3/32 inches out only.

B. Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal panel installation.

## 3.2 METAL PANEL INSTALLATION

A. Concealed-Fastener Formed Metal Soffit Panels: Install metal panel system in accordance with manufacturer's written instructions, approved shop drawings, project drawings, and referenced publications. Install metal panels in orientation, sizes, and locations indicated. Anchor panels and other components securely in place. Provide for thermal and structural movement.

B. Fasten metal panels to supports with fasteners at each location indicated on approved shop drawings, at spacing and with fasteners recommended by manufacturer. Fasten panel to support structure through leading panel flange. Fit back flange of subsequent panel into secured flange of previous panel.

1. Cut panels in field where required using manufacturer's recommended methods.
2. Provide weatherproof jacks for pipe and conduit penetrating metal panels.
3. Dissimilar Materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by metal panel manufacturer.

C. Attach panel flashing trim pieces to supports using recommended fasteners and joint sealers.

D. Joint Sealers: Install liquid sealants where indicated and where required for weatherproof performance of metal panel assemblies.

1. Seal panel joints and openings using joint sealers indicated in manufacturer's instructions.
2. Prepare joints and apply sealants per requirements of Division 07 Section "Joint Sealants."

## 3.3 ACCESSORY INSTALLATION

A. General: Install metal panel accessories with positive anchorage to building and weather tight mounting; provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal panel assembly, including trim, flashings, sealants, closure strips, and similar items.
2. Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.
3. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

## 3.4 CLEANING AND PROTECTION

A. Clean finished surfaces as recommended by metal panel manufacturer.

B. Replace damaged panels and accessories that cannot be repaired to the satisfaction of the Architect.

**END OF SECTION**

SECTION 07462

FIBER CEMENT SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Factory-finished fiber cement lap siding, panels, single, trim, fascia, moulding and accessories, James Hardie HZ10 Engineered for Climate Siding.

1.2 RELATED SECTIONS

A. Section 06100 - Rough Carpentry: Wood framing and bracing.

B. Section 06100 - Rough Carpentry: Sheathing.

C. Section 07210 - Insulation: Exterior wall insulation.

D.

1.3 REFERENCES

A. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.

B. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding and/or trim materials which are outside the scope of the standard details and specifications provided by the manufacturer.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Product Warranty: Limited, non-pro-rated product warranty.
   1. HardiePlank HZ10 lap siding for 30 years.
   2. HardieShingle HZ10 shingle siding for 30 years

B. Finish Warranty: Limited product warranty against manufacturing finish defects.
   1. When used for its intended purpose, properly installed and maintained according to Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.

C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: http://www.jameshardiecommercial.com/

B. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01600.

2.2 SIDING

A. HardiePlank HZ10 lap siding, and HardieShingle HZ10 siding requirement for Materials:
   1. Fiber-cement Siding - complies with ASTM C 1186 Type A Grade II.
   2. Fiber-cement Siding - complies with ÅSTM E 136 as a noncombustible

material.
3. Fiber-cement Siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
4. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
5. National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC).
6. City of Los Angeles, Research Report No. 24862.
7. Miami Dade County, Florida Notice of Acceptance 07-0418.04.
8. US Department of Housing and Urban Development Materials Release 1263d
9. California DSA PA-019.
10. City of New York M EA 223-93-M.
11. Florida State Product Approval FL889.
12. Texas Department of Insurance Product Evaluation EC-23.

B. Lap Siding: HardiePlank HZ10 Lap as manufactured by James Hardie Building Products, Inc.
1. Type: Smooth 7-1/4 inches (184 mm) with 6 inches (152 mm) exposure.

C. Shingle Siding: HardieShingle HZ10 siding as manufactured by James Hardie Building Products, Inc.
1. Type: HardieShingle Staggered-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.

D. Trim:
1. HardieTrim HZ10 boards as manufactured by James Hardie Building Products, Inc.
a. Product: 5/4 Boards, 3-1/2 inch (89 mm) width.
b. Texture: Wood Grained.
c. Length: 12 feet (3658 mm).
d. Thickness: 1 inch (24 mm).
2. HardieTrim HZ10 Fascia boards as manufactured by James Hardie Building Products, Inc.

## 2.3 FASTENERS

A. Wood Framing Fasteners:
1. Wood Framing: 6d common corrosion resistant nails.

## 2.4 FINISHES

A. Factory Finish: Refer to Exterior Finish Schedule.
1. Product: ColorPlus Technology by James Hardie.
2. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.
3. Process:
a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party.
4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Nominal 2 inch by 4 inch (51 m by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
   1. Install water-resistive barriers and claddings to dry surfaces.
   2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
   3. Protect siding from other trades.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install a water-resistive barrier is required in accordance with local building code requirements and as required elsewhere in the Specification Manual.

D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

E. Use HardieWrapTM Seam Tape at joints and laps.

F. Install and HardieWrapTM flashing, HardieWrapTM Flex Flashing.

3.3 INSTALLATION - HARDIEPLANK HZ10 LAP SIDING AND ARTISAN HZ10 LAP SIDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.

C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

D. Align vertical joints of the planks over framing members.

E. Maintain clearance between siding and adjacent finished grade.

F. Locate splices at least one stud cavity away from window and door openings.

G. Use off-stud metal joiner in strict accordance with manufacturer's installation instructions.

H. Wind Resistance: Where a specified level of wind resistance is required Hardieplank lap siding is installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405.

I. Face nail to sheathing.

J. Locate splices at least 12 inches (305 mm) away from window and door openings.

3.4 INSTALLATION - HARDIE HZ10 SHINGLESIDE CLADDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Substrate: Install a minimum 7/16 inch (11 mm) thick OSB wall sheathing or equivalent braced walls complying with applicable building codes.

C. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall.

D. Maintain clearance between siding and adjacent finished grade.

E. Apply starter course of 10 inches (254 mm) shingles or 9-1/2 inches (241 mm) lap siding overlapping the starter strip.

F. Apply subsequent courses horizontally with a minimum 10 inch overlap at the top and a minimum 2 inch (51 mm) side lap. The bottom edge of the first two courses overlaps the starter strip.

G. Fasten between 1/2 inch (13 mm) and 1 inch (25 mm) in from the side edge and between 8-1/2 inches (216 mm) and 9 inches (229 mm) up from the shingle bottom edge.

H. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

I. Ensure vertical joints of overlapping shingle course do not align.

J. Wind Resistance: Where a specified level of wind resistance is required, Hardie Shingle siding is installed to substrate and secured with a minimum two fasteners described in Table No. 6, 7 and 8 in National Evaluation Service Report No. NER-405.

3.5 INSTALLATION - HARDIETRIM HZ10 BOARDS

A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.

B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.

D. Maintain clearance between trim and adjacent finished grade.

E. Trim inside corner with a single board trim both side of corner.

F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.

G. Allow 1/8 inch gap between trim and siding.

H. Seal gap with high quality, paint-able caulk.

I. Shim frieze board as required to align with corner trim..

J. Fasten through overlapping boards. Do not nail between lap joints.

K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.

L. Shim frieze board as required to align with corner trim.

M. Install HardieTrim Fascia boards to rafter tails or to sub fascia.

3.6 FINISHING

A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of either, 100 percent acrylic or latex or oil based, exterior grade topcoats or two coats high quality alkali resistant 100 percent acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

B. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

3.7 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

## SECTION 07480

## METAL WALL PANELS

### PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Preformed, pre-finished metal roofing and flashings.

B. Miscellaneous trim, flashing, closures, drip flashing,

and accessories.

C. Sealant

D. Fastening devices.

### 1.02 RELATED SECTIONS

A. Section 05120: Structural Steel Framing.

B. Section 05500: Miscellaneous metal fabrication.

C. Section 06100: Rough Carpentry.

D. Section 07631: Flashing and Sheet Metal Gutters.

E. Section 07900: Sealants.

### 1.03 REFERENCES

A. American Iron & Steel Institute (AISI) Specification for the Design of Coldformed Steel Structural Members.

B. ASTM A-653 & ASTM A924 Steel Sheet, Zinc-Coated (Galvanized)

C. ASTM E-283-84

D. ASTM E-331-86

E. Spec Data Sheet - Galvalume Sheet Metal by Bethlehem Corp.

F. SMACNA - Architectural Sheet Metal Manual.

### 1.04 ASSEMBLY DESCRIPTION

A. The roofing assembly includes preformed sheet metal panels, related accessories, valleys, hips, ridges, eaves, corners, rakes, miscellaneous flashing and attaching devices.

### 1.05 SUBMITTALS

A. Submit detailed drawings showing layout of panels, anchoring details, joint details, trim, flashing, and accessories. Show details of weatherproofing, terminations, and penetrations of metal work.

B. Submit a sample of each type of roof panel, complete with factory finish.

**1.06 QUALITY ASSURANCE**

A. Manufacturer: Company specializing in Architectural Sheet Metal Products with ten (10) years minimum experience.

B. No product substitutions shall be permitted without meeting specifications.

C. Substitutions shall be submitted 10 Days prior to Bid Date and acceptance put forth in an addendum.

D. No substitutions shall be made after the Bid Date.

**1.07 DELIVERY, STORAGE AND HANDLING**

A. Upon receipt of panels and other materials, installer shall examine the shipment for damage and completeness.

B. Panels should be stored in a clean, dry place. One end should be elevated to allow moisture to run off.

C. Panels with strippable film must not be stored in the open, exposed to the sun.

D. Stack all materials to prevent damage and to allow for adequate ventilation.

**1.08 WARRANTY**

A. Galvalume material shall have a twenty year guarantee against failure due to corrosion, rupture or perforation.

B. Applicator shall furnish guarantee covering water tightness of the roofing system for the period of two (2) years from the date of substantial completion.

**PART 2 PRODUCT**

**2.01 ACCEPTABLE MANUFACTURERS**

A. MBCI, Houston, Texas; Berridge Manufacturing Company, Houston, Texas;

B. Substitutions shall fully comply with specified requirements.

**2.02 SHEET MATERIALS**

A. Pre-finished Metal shall be pre-finished Galvalume - ASTM A792-86 AZ-55.

B. Unfinished Metal shall be Grade C Galvalume ASTM 792-86, AZ 55, "Satin Finish".

C. Strippable film shall be applied to the top side of the painted coil to protect the finish during fabrication, shipping and field handling. This strippable film must be removed before installation.

**2.03 ACCESSORY MATERIALS**

A. Fasteners: Stainless Steel with washers where required.

B. Sealant: As specified in Section 07900 [ ] Type.

**2.04 FABRICATION**

A. All exposed adjacent flashing shall be of the same material and finish as the roof panels.

B. Hem all exposed edges of flashing on underside, 1/2 inch.

**2.05 MBCI "7.2" PANEL**

1. Overall panel width to be 35", with 32" nominal coverage.

2. Panels shall be factory formed to 40' max.

3. 2.146" Corrugations to be spaced 7.2" on center.

3. 7.2 Panel shall be 26 gage.

4. Panel-to-panel and panel-to-furring connections to be with No. 12-14 self-drilling fasteners, 1" min. for panel-to-furring connections, 3/4" minimum for panel-to-panel connections. Panel should be fastened at 16" on center horizontally over the length of the panel and 5" on center at panel ends.

5. Panels shall be fasted to minimum 16 gage furring at 4'-0" on center max.

**2.06 MBCI "FW-120" PANEL**

1. Overall panel width to be 12" nominal coverage.

2. Panels shall be factory formed to 40' max.

3. FW-120 Panel shall be 24 gage.

4. Panel-to-panel and panel-to-furring connections to be with No. 12-14 self-drilling fasteners, 1" min. for panel-to-furring connections, 3/4" minimum for panel-to-panel connections. Panel should be fastened at 16" on center horizontally over the length of the panel and 5" on center at panel ends.

5. Panels shall be fasted to minimum 16 gage furring at 3'-0" on center max.

**PART 3 EXECUTION**

**3.01 INSPECTION**

**A. Substrate:**

1. Examine 16 gage furring zees to ensure proper attachment to CMU backup wall.

3. Verify wall openings, windows, doors, penetrations, ducts or vents through wall are solidly set, cant strips and reglets in place, and nailing strips located.

4. Verify deck is dry and free of snow or ice. [Flutes in steel deck to be clean and dry] or [joints in wood deck to be solidly supported and nailed].

**B. Underlayment:**

1. Verify #30 unperforated asphalt saturated roofing felt underlayment has been installed over solid sheathing and fastened in place.

2. One (1) layer of #30 asphalt roofing felt paper for roof slopes of 3:12 and up, two (2) layers for roof slopes of 1:12 - 3:12 in moderate climates (check with Berridge).

3. Grace Ice & Water Shield underlayment to be used on all curved applications and on low (less than 1:12) slope or complex roofs per Berridge recommendation.

4. Ensure felt installed horizontally, starting at eave to ridge with a 6" minimum overlap and 18" endlaps.

5. Ensure that all nail heads are totally flush with the substrate. Nails shall be galvanized roofing nails with Berridge Coated Felt Caps.

**3.02 INSTALLATION**

A. Comply with manufacturers standard instructions and conform to standards set forth in the Architectural Sheet Metal Manual published by SMACNA, in order to achieve a watertight installation.

B. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.

C. Install starter and edge trim before installing roof panels.

D. Remove protective strippable film prior to installation of roof panels.

E. Attach panels using manufacturer's standard clips and fasteners, spaced in accordance with approved shop drawings.

F. Install sealants for preformed roofing panels as approved on shop drawings.

G. Do not allow panels or trim to come into contact with dissimilar materials.

H. Do not allow traffic on completed roof. If required, provide cushioned walk boards.

I. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.

J. Remove and replace any panels or components which are damaged beyond successful repair.

**3.03 CLEANING**

A. Clean any grease, finger marks or stains from the panels per manufacturer's recommendations.

B. Remove all scrap and construction debris from the site.

**3.04 FINAL INSPECTION**

A. Final inspection will be performed by a firm appointed and paid for by the owner in accordance with section 01410.

END OF SECTION

## SECTION 07611

## PREFABRICATED METAL BUIDLING ROOF CURBS

### PART 1 GENERAL

1.01 The general conditions and supplemental general conditions of the contract apply to this section as if completely written here-in.

1.02 The general contractor shall provide ail labor, material and equipment to completely install prefabricated metal roof curbs.

1.03 Prefabricated metal curbs shall be used at all roof penetrations including but not limited to HVAC units, skylights, duct openings, pipe penetrations and exhaust fans.

### PART 2 PRODUCTS

**2.01** Prefabricated metal roof curbs shall be manufactured by LMCurbs, 827 Fisher Road, Longview, Texas 75604, Tel: 1-903-759-1331, 1-800-284-1412, Fax 903-759-0879

### PART 3 CONSTRUCTION

3.01 Curbs shall be constructed using minimum .080 3003H14 aluminum, or heavier as required to support the load of the equipment, with fully mitered and welded corners, integral base plates, vwth water diverter cricket. Factory installed insulation available upon request

3.02 Minimum height of curb shall be 8" above finished roof (or as specified.)

3.03 Curbs shall be constructed to match slope of roof and provide a level top surface for mounting of equipment.

3.04 Curb flange shall be constructed to match configuration of roof panel.

### PART 4 CORRDINATION

4.01 Size of curbs and required options shall be coordinated by curb manufacturer and general contractor and mechanical contractor prior to fabrication.

4.01 Shop drawings bearing roofing manufacturers and architects approval shall be used for fabrication of the curbs.

END OF SECTION

## SECTION 07620

## SHEET METAL FLASHING AND TRIM

### PART 1 GENERAL

### 1.01 WORK INCLUDES

A. Coping, parapet, and cap flashing.
B. Scuppers and Downspouts.
C. Roof and still flashings.

### 1.02 RELATED WORK

A. Section 06114- Wood blocking, nailers, and grounds.
B. Section 07514- Built-up Asphalt Roofing: Roofing.
C. Section 07900- Joint Sealers
D. Section 09900- Painting: Prime and finish Painting.
E. Division 15- Mechanical Flashing sleeves and collars for mechanical items protruding through roofing membrane.
F. Division 16- Electrical: Flashing sleeves and collars for electrical.

### 1.03 REFERENCES

A. AA (Aluminum Association)- Aluminum construction Manual: Aluminum Sheet Metal Work and building Construction.
B. AISI (American Iron and Steel Institute)- Stainless Steel- Uses in Architecture.
C. ANSV ASTM B 32- Solder Metal.
D. ASTM A167- Stainless and Heat-resisting Chromium-Nickel Steel Plate.
E. ASTM B209- Aluminum and Aluminum Alloy Sheet and Plate.
F. ASTM B307- Copper Sheet and Strip for Building Construction.
G. FS 0-G-506- Flux, Soldering, Paste and Liquid.
H. ASTM B32-89- Solder; Tin Alloy.
I. FS Q-T-201- Terne Plate, for Roofing and Roofing Products.
J. ASTM D4586- Cement, Bituminous, Plastic.
K. NAAMM- Metal Finishes Handbook.
L. NRCA (National Roofing Contractors Association)- Roofing Manual.
M. SMACNA_ Architectural Sheet Metal Manual.

### 1.04 SYSTEM DESCRIPTION

A. Work of this Section is to physically protect membrane roofing; and base flashing, from damage that would permit water leakage to building interior.
B. Provide scuppers and downspouts to direct water from roof of buildings.

### 1.05 QUALITY ASSURANCE

A. Applicator: Company specializing in sheet metal flashing work with three years minimum experience.

### 1.06 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01300.
B. Describe material profile, joining pattern, jointing details, fastening methods, and installation details.
C. Submit manufacturer's installation instructions under provisions of Section 01300.
D. Submit samples under provisions of Section 01300.

## 1.07 STORAGE AND HANDLING

A. Store products under provisions of Section 01600.
B. Describe material profile, jointing pattern, jointing details, fastening methods, and installation details.
C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

# PART 2 PRODUCTS

## 2.01 PRODUCTS

A. Fasteners: Galvanized steel: ASTM A525, G90; 22 gage core steel, mill phoshitized for painting.
B. Underlayment: ASTM D266; No. 15 asphalt saturated roofing felt placed on top of roof membrane and strip in flashing.
C. Protective Backing Paint: Bituminous.
D. Butyl Tape: Provide at all fasteners in concealed locations.
E. Sealant: Type specified in Section 07900 and recommended by manufactures of various products.
F. Bedding Compound: Rubber- asphalt.
G. Plastic Cement: ASTM B4586, Type II- Asphaltic base Cement.
H. Reglets: Surface mounted galvanized steel.
I. Solder: ANSI/ASTM B32; 50/50 type.
J. Flux: FS 0-F-506.

# PART 3 EXECUTION

## 3.01 INSPECTION

A. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place and nailing strips located.
B. Verify membrane termination and base flashings are in place, sealed, and secure.
C. Beginning of installation means acceptance of existing conditions.

## 3.02 PREPARATION

A. Field measure site conditions prior to fabricating work.
B. Install surface mounted reglets true to line and levels.
C. Insert flashings into reglets to from tight fit. Secure in place in accordance with SMASNA guidelines for particular type of flashing. Seal flashing into reglet with sealant.
D. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Architect.
E. Place butyl tape behind all metal flashings at location through which fasteners are placed.
F. Apply plastic cement compound between metal flashing and felt flashings.
G. Fit flashing tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

## 3.03 INSTALLATION

A. Conform to drawing details included in SMACNA and NRCA manuals.

END OF SECTION

**SECTION 07900**

**BUILDING SEALANTS**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Exterior sealants and sealants for moving joints, except for joints in those systems listed under Related Work.

B. Interior sealants and caulking.

### 1.2 RELATED WORK

A. Section 02520 – Concrete Paving: site concrete paving expansion joint sealant

B. Section 04200 – Unit Masonry: masonry control and expansion joints

C. Division 7 – Roofing Sections: Sealants used in conjunction with roofing.

D. Section 07270 – Firestopping: firestopping penetrations

E. Section 07620 – Sheet Metal Flashing, Gutters, Downspouts and Trim: Sealants used in conjunction with metal items.

F. Section 08800 – Glazing Systems: glazing sealants

G. Section 09250 – Gypsum Board assemblies: acoustical sealants

H. Division 15 – Mechanical Sections

### 1.3 REFERENCES

A. ASTM International (ASTM)
   1. C717, Standard Terminology of Building seals and Sealants
   2. C793, Standard Test Method for Effects of Accelerated Weathering on Elastomeric Joint Sealants
   3. C794, Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
   4. C834, Standard Specification for Latex Sealants
   5. C920, Standard Specification for Elastomeric Joint Sealants
   6. C1193, Standard Guide for Use of Joint Sealants

B. Sealant, Waterproofing and Restoration Institute (SWRI)
   1. The Processional's Guide

### 1.4 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.

2. Manufacturer's installation instructions

B. Sample: On site sample for Architect's approval of colors.

C. Certification: Manufacturer's affidavit that materials used in Project contain no asbestos.

## 1.5 QUALITY ASSURANCE

A. Installer Qualifications: experienced in building sealant installation whose work has resulted in sealant installations with a record of successful performance.

B. Source Limitations: unless specifically indicated, obtain each type of building sealant through one source from a single manufacturer.

C. Pre-construction Field Adhesive Testing: Prior to installation of building sealants, field test their adhesion to joint substrates in accordance with manufacturer's instructions. Perform test in locations indicated by Architect. Perform test for each type of building sealant and each substrate as required by Architect. If required by Architect, arrange for tests to be performed with sealant manufacturer's representative present. Follow-up review by Architect and manufacturer may be required to observe sealant performance over time and may result in re-application of sealant or replacement.

D. Cleaning: Façade sealants that have collected dirt at the time of Substantial Completion shall be cleaned over the entire façade prior to acceptance by the Owner. 11 months after final completion of the building, if the sealant joints show dirt, they shall again be cleaned over the entire façade.

## 1.6 PROJECT CONDITONS

A. Environmental Conditions: Do not proceed with installation of sealants when joint substrates are wet or when ambient temperature conditions are above limits permitted by sealant manufacturers or are below 40 degree F.

B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by sealant manufacturer for applications indicated.

C. Joint-Substrate Conditions: Do not proceed with installation of sealants until contaminates which may interfere with adhesion are removed from substrates.

## 1.7 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requirements.

B. In addition, refer to information above concerning Field Adhesive Testing.

## 1.8 WARRANTY

A. Warrant the work specified herein for two (2) years against becoming unserviceable or causing and objectionable appearance resulting from either defective or nonconforming materials and workmanship.

B. Defects shall include, but not be limited to:
1. Leaking
2. Cracking, splitting or releasing from substrate

3. Deterioration or color change

## PART 2 – PRODUCTS

### 2.1 APPROVED MANUFACTURERS

A. Specifications are based on the products or materials of the named manufacturer, otherwise selection may be made from any manufacturer listed below whose products meet or exceed the specifications. Other manufacturers must have a minimum of five (5) years experience manufacturing the products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
   1. Typical Sealants:
      a. Bostik
      b. Pecora, Inc.
      c. Sonneborn
      d. Sika
      e. Tremco Incorporated
   2. Silicone Sealants at Appliances:
      a. Pecora, Inc.
      b. General Electric Co.
      c. Dow Corning

### 2.2 MATERIALS

A. Caulking for Exposed Non-Working Interior Locations:
   1. Type: Acrylic Latex, conforming to ASTM C834; single component, paintable.
   2. Applications: Use for interior wall and ceiling joints, joints between door and window frames and wall surfaces, and other interior non-traffic-bearing joints for which no other type of sealant is indicated.

B. Sealant for Working Joints and Exposed Vertical Exterior Locations:
   1. Type: Polyurethane, conforming to ASTM C920, Type M, Grade NS, Class 25; multi-component, non-sagging.
   2. Applications: Use for:
      a. Control, expansion, and soft joint masonry. Refer to drawings and Section 04200, Unit Masonry for specific locations. Provide full sealant joints at building expansion joints.
      b. Joints between concrete and other materials.
      c. Joints between metal frames and other materials.
      d. Other exterior non-0traffic bearing joints for which no other type of sealant is indicated.

C. Sealant for Exposed Exterior Traffic-bearing Locations:
   1. As specified in section 02520, Concrete Paving

D. Acoustical Sealant:
   1. As specified in Section 09250, Gypsum Board Assemblies

E. Rubber Sealant:
   1. Type: Butyl sealant, conforming to ASTM C920, Type NT, Grade NS, Class 12-1/2; single component, solvent release, non-skinning, non-sagging.
   2. Movement Capability: Plus and minus 12-1/2 percent
   3. Service Temperature range: -13 to 180 degree F

F. Sealant at Sanitary Locations:
   1. Type: Single component, silicone sealant conforming to ASTM C920, Type S, Grade NS, Class 25, mildew resistant, non-yellowing.
   2. Application: Use for joints between plumbing fixtures and floor and wall surfaces, and joints between kitchen and bathroom counter tops and wall surfaces, unless indicated otherwise. Use at all Kitchen appliances.
   3. See Section 09310, Ceramic Tile for sealant at tile surfaces.
   4. Approved Product/Manufacturer: Sanitary SCS1700 Sealant manufactured by General Electric Company, Pecora Corp., Dow Corning, or Architect approved equal.

G. Primers, Cleaners, Top Coats: Use only materials listed as suitable in resistance to staining, compatibility and durability before proceeding.

H. Expanded Polysthylene Joint Filler: Provide flexible, compressible, closed-cell, polyethylene of not less than 10 psi compression deflection (25 percent); except provide higher compression deflection strength as many be necessary to withstand installation forces and provide proper support for sealants, surface water absorption of not more than 0.1 pounds per square foot, as manufactured by Sonneborn, or pre-approved equal.

I. Sealant Backer Rod: Provide compressible rod stack of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable, non-absorptive material as recommended by sealant manufacturer for back-up of and compatibility with sealant. Where used with hot-applied sealant, provide heat-resistant type, which will not be deteriorated by sealant application temperature as indicated.

J. Bond Breaker Tape: Provide polyethylene tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape where applicable.

## PART 3 – EXECUTION

### 3.1 APPLICATION

A. Temperatures: Do not install sealants when air temperature is under 40 degrees F. Sealants may be warmed to ease installation when recommended by the manufacturer.

B. Tooling: Toll exposed joints to a slightly concave surface using slicking materials recommended by the manufacturer. The tooling procedure shall press sealant against the sides of the groove. No materials shall be left “feathered” out or smeared on the abutting materials. If necessary, protect adjacent surfaces with tape. Completed joints shall have a uniform professional appearance. Use an anti-tack compound on sealant that does not set up fast enough to avoid dust collection.

C. Sealant Back-Up: Provide back-up filler where groove depth is too great to fill with sealant. Review joint design with Architect.

D. Compressive Filler: Seal vertical expansion joints with fillers. Provide compressible filler twice the width of the joint and with a depth of 1-1/2 times the compressed width. Lap ends 2 inch minimum.

E. Seal ends together in such a manner to allow natural drainage. Install filler by compressing material and sliding into joint. Align filler on one face of the joint before it expands to the full joint width.

**END OF SECTION**

**SECTION 08100**

**HOLLOW METAL DOORS AND FRAMES**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Provide items shown on the drawings and specified, including, but not limited to the following:
   1. Standard and fire rated steel doors
   2. Steel frames for doors, sidelites, transoms, and windows
   3. Louvers and vision lites in steel doors, if shown or required
   4. Sound rated steel doors
   5. Thermally rated steel doors

### 1.2 RELATED WORK

A. Section 04200 – Unit Masonry

B. Section 05410 – Light Gauge Steel Framing

C. Section 05500 – Miscellaneous Metals

D. Section 08213 – Plastic Laminate Faced Wood Doors

E. Section 08710 – Finish Hardware

F. Section 08800 – Glazed Systems: Glazing in doors, sidelites, transoms, and windows

G. Section 09900 – Painting and Staining

### 1.3 REFERENCES

A. American National Standards Institute (ANSI)
   1. A115.IG, Installation Guide for Doors and Hardware
   2. A224.1, Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors & Frames
   3. A250.8, Recommended Specifications for Standard Steel Doors and Frames. (Formerly SDI-100)
   4. A250.11, Recommended Erection Instructions for Steel Frames (Formerly SDI-105).

B. ASTM International (ASTM)
   1. A653, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
   2. A924, Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
   3. A1008, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
   4. A1011, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon,

Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
5. C1363 – Standard Test Method for the Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus
6. E413 – Standard Classification for Rating Sound Insulation
7. E2074, Standard Test Method for Fire Tests of Door Assemblies (Formerly A152)

C. Federal Specification (Fed Spec)
1. Fed Spec C578 Bead Fusion Test

D. Hollow Metal Manufacturers Association (HMMA)
1. HMMA 802 – Manufacturing of Hollow Metal Doors and Frames.
2. HMMA 810 – Hollow Metal Doors
3. HMMA 830 – Hardware Preparation and Locations for Hollow Metal Doors and Frames
4. HMMA 840 – Installation and Storage of Hollow Metal Doors and Frames
5. HMMA 850 – Fire Rated Hollow Metal Doors & Frames
6. HMMA 890 – Technical summary of Hollow Metal by HMMA

E. National Fire Protection Association (NFPA)
1. 80, Fire Doors and Fire Windows
2. 252, Fire Tests of Door Assemblies

F. Steel Door Institute
1. Technical Data Series

G. Underwriters Laboratories Inc. (UL)
1. Building Materials Directory
2. Listing and Labeling
3. 10B and 10C, Fire Tests of Door Assemblies
4. 1784, Air Leakage Tests of Door Assemblies

H. Intertek Testing, Services (Warnock Hersey, Inc. (WHI))
1. Listing and Labeling

## 1.4 SUBMITTALS

A. Product Data:
1. Manufacturer's standard details and catalog data demonstrating compliance with specifications and referenced standards.
2. Manufacturer's installation instructions.

B. Shop Drawings:
1. Indicate complete schedule in detail for each steel door and frame using the same reference number for details and openings as those on the Contact Drawings. If any door is not by the steel door manufacturer only the door opening number should be shown along with the type of door (wood, plastic laminate faced, etc.).
2. Show details of construction, installation, connections, anchors, hardware reinforcement, hardware preparation, louvers, and floor and threshold clearances.

C. Samples:

1. 12 inch x 12 inch sample of a fire-rated and non-rated door, cut from corner of door, showing door construction.
2. 12 inch x 12 inch sample of each type of door louver specified or required, showing louver construction.
3. 6 inch long sample of a fire-rated, non-rated frame, and each type of glass stop specified or required, showing corner and construction.

D. Certificates:
1. Manufacturer's certification that oversized openings are in compliance with specifications.

## 1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: If other than a manufacturer listed under Paragraph 2.1 is proposed for use on the Project, it shall be a company specializing in the manufacturer of steel doors and frames of the type specified for this Project with a minimum of five (5) years experience.

B. All steel doors and frames shall be by a single manufacturer.

## 1.6 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies:
1. Fire-Rated Door, Panel, Frame, and Fire Window Construction: Shall conform to ASTM E2074, NFPA 252, or UL 10B, as applicable, and acceptable to the code authorities having jurisdiction.
2. Fire-Rated Door Construction:
   a. Not withstanding any other requirements of this Specification, provide gauge of metal, method of construction, hardware preparation, reinforcement, and placement, glass opening size, and other specifics required to obtain the specified or required label. The label shall contain the fire resistance rating (20 minute, 45 minute, 1 hour, 1-1/2 hour, 3 hour, etc.) and the designation (A, B, C, D, or E). Doors with "B" Label shall be 1-1.2 hour.
   b. Fire-rated doors used in a stairway enclosure, shall be so constructed so that the maximum transmitted temperature shall not exceed 450 degrees F above ambient temperature at the end of 30 minutes of the Standard Fire Exposure Test and Shall be so noted on the label.
3. Fire-Rated Openings: Conform to NFPA 80 for fire-rated class shown or required by code authorities having jurisdiction.
   a. Units shall be identical to assemblies whose fire resistance characteristics have been determined in accordance with requirements specified under Paragraph C, 01, above, and shall be labeled and listed by UL, WHI, or other inspection and testing agency acceptable to the code authorities having jurisdiction.
   b. Fire-rated steel doors, panels, frames, and fire windows shall bear permanent labels attesting to fire resistance. At stairway enclosures, provide units listed for 450 degree F maximum temperature rise rating for 20 minutes of exposure.
   c. Oversized openings shall be constructed in accordance with all applicable requirements for labeled door construction.
   d. Fire rated door assemblies with gaps in excess of 1/8 inch between door and frame will not comply with NFPA 80.

e. Locate label on hinge side of doors and frames so that when door is closed, label is not visible.
f. Caution shall be taken to ensure that labels are not removed, damaged or painted over.
g. Glass panes shall not exceed sizes allowed whether indicated or not on the drawings.

**1.7 PRE-INSTALLATION CONFERENCE**

A. Refer to Section 01110 – Notification of Architect Requirements.

**1.8 COORDINATION**

A. Coordinate the Work of this Section with work in which hollow metal work is installed.

B. Coordinate hardware installation with opening construction. Finish hardware is specified in Section 08710.

C. Coordinate doors, frames, and windows with glazing specified in Section 08800.

D. Coordinate doors and frames with painting specified in Section 09900.

**1.9 DELIVERY, STORAGE AND HANDLING**

A. Deliver and store products in accordance with manufacturer's instructions, and as follows:

B. Deliver materials to allow for minimum storage time at the project site. Coordinate delivery with the scheduled time of installation.

C. Protect products for moisture, construction traffic, and damage.
1. Store under cover in a clean, dry place, protected from weather and abuse.
2. Store in a manner that will prevent rust or damage.
3. Store doors in a vertical position, spaced with blocking to permit air circulation.
4. Do not use non-vented plastic or canvas shelters.
5. Should containers or wrappers become wet, remove immediately.

**1.10 WARRANTY**

A. Warrant the work specified herein for one (1) year against becoming unserviceable or causing an objectionable appearance resulting from either defective or non-conforming materials and workmanship.

B. Defects Shall include, but not be limited to:
1. Use of incorrect materials in opening
2. Incorrect labeled components installed within opening
3. Noisy, rough or difficult operation
4. Failure to meet specified quality assurance requirements

**PART 2 – PRODUCTS**

**2.1 APPROVED MANUFACTURERS**

A. Manufacturers listed below whose products meet or exceed the specifications are approved for use on the Project. Other manufacturers must comply with Paragraph 1.5, A, Manufacturer Qualifications, must manufacture equivalent products to those specified and comply with requirements of Division 1 regarding substitutions to be considered.
   1. Amweld Building Products, Inc., Garrettsville, OH; (330) 527-5122
   2. American Door Products, Houston, TX; (713) 681-8047 (Pearland Industries, Inc.)
   3. CECO Door Products, Brentwood, TN; (615) 661-5030
   4. Curries Company, Mason City, IA; (515) 423-1334
   5. Deansteel Mfg. Co., San Antonio, TX; (210) 226-8271
   6. Door Pro Systems, Inc., Houston, TX; (713) 462-0860
   7. P-W Metal Products, Inc., Garland, TX; (214) 487-0454
   8. Republic Builders Products Company, McKenzie, TN; (800) 733-3667
   9. Rocky Mountain Metals, Inc., Raton, NM; (505) 445-2756
   10. Steelcraft Mfg. Co., Cincinnati, OH; (513) 745-6400

## 2.2 MATERIALS, GENERAL

A. Steel requirements, all frames to be manufactured of commercial quality, stretcher leveled flatness, cold rolled steel per ASTM-A1008 general requirements. Internal reinforcing may be manufactured of hot rolled pickled and oiled steel per ASTM-A1011.

B. Exterior frames and interior frames where shown on drawings or required in damp, moist, humid, and wet areas, i.e., toilets, locker rooms, showers, etc., to be manufactured of commercial quality, stretcher leveled flatness, cold rolled steel and galvannealed to 'A-60' minimum coating weight standard per ASTM-A653 and A924, with coating weight of not less than 0.60 ounce per square foot (0.30 ounce per square foot per side).

## 2.3 FRAME FABRICATION

A. Minimum Gauges:
   1. Interior Openings:
      a. 4 feet-0 inches or Less in Width: 16 gauge
      b. Over 4 feet-0 inches in Width: 14 gauge

B. Design and Construction:
   1. Frames shall be custom made, welded units with integral trim of sizes and shapes shown on approved shop drawings. Hinge jambs that butt adjacent 90 degree walls shall have at least four (4) inch wide frame face to assure the door trim will not strike the wall prior to the door opening at least 90 degrees. Frame profile shall match wall thickness where practical, i.e., 4-3/4 inch at 4 inch CMU, 6-3/4 inch at 6 inch CMU, and 8-3/4 inch at 8 inch CMU. At masonry wall openings, fabricate frames to suite masonry opening with 2 inch head member.
   2. Frames shall be strong and rigid, neat in appearance, square, true and free of defects, warp and buckle. Molded members shall be clean cut, straight and of uniform profile throughout their length.
   3. Jamb depths, trim, profile and backbends shall be as shown on approved shop drawings.
   4. Corner joints, including face and inside corners, shall have contact edges closed tight, with trim faces mitered and continuously welded, and stops butted. The use of gussets shall not be permitted. Face of frame shall be ground smooth. Knockdown (KD) frames are not permitted.
   5. Minimum depth of stops shall be 5/8 inch, except at fire windows where minimum depth of stops shall be 3/4 inch.

6. Frames for multiple openings shall have mullion and rail members which are closed tubular shapes having no visible seams or joints. Joints between faces of abutting members shall be securely welded and finished smooth. Mullions shall be key locked removable type. Keys shall be master keyed to Owner's Best system.
7. Hardware Reinforcements:
    a. Frames shall be mortised, reinforced, drilled and tapped at factory for fully template mortised hardware in accordance with approved hardware schedule and templates provided by Section 08710. Where surface-mounted hardware is to be applied, frames shall have reinforcing plates only.
    b. Minimum thickness of hardware reinforcing plates shall be as follows:
        1) Hinge and pivot reinforcements (1-1/4 inch x 10 inch minimum size): 7 gauge
        2) Strike reinforcements: 12 gauge
        3) Flush bolt reinforcements: 12 gauge
        4) Closer reinforcements: 12 gauge
        5) Reinforcements for surface-mounted hardware, hold-open arms, surface panic devices: 12 gauge
8. Floor Anchors: Minimum 14 gauge, securely welded inside each jamb, with holes for floor anchorage.
9. Jamb Anchors:
    a. Frames for installation in masonry walls shall be provided with adjustable jamb anchors of the T-Strap type. Anchors shall be not less than 16 gauge steel. The number of anchors provided at each jamb shall be as follows:
        1) Frames up to 7 feet-6 inch height – Three (3) anchors
        2) Frames 7 feet-6 inch to 8 feet-0 inch height – Four (4) anchors
        3) Frames over 8 feet-0 inch height – One (1) anchor for each 2 feet or fraction thereof in height.
    b. Frames for installation in wood or meal stud partitions shall be provided with steel anchors of suitable approved design, not less than 16 gauge thickness, securely welded inside each jamb as follows:
        1) Frames up to 7 feet-6 inch height – Four (4) anchors
        2) Frames 7 feet-6 inch to 8 feet-0 inch height – Five (5) anchors
        3) Frames over 8 feet-0 inch height – Four (4) anchors plus one (1) additional for each 2 feet or fraction thereof over 8 feet-0 inches.
    c. Frames to be anchored to previously placed councrete, masonry or structural steel shall be provided with anchors of suitable design as shown on approved shop drawings.
10. Dust Cover Boxes: Shall be of not less than 26 gauge steel and shall be provided at all mortised hardware items. Eight (8) inch CMU walls with face brick shall have dual offset jamb anchors.
11. Steel Spreader: Shall be provided on all frames, temporarily attached to bottoms of both jambs for bracing during shipping and handling.
12. Loose Glazing Stops: Shall be of cold rolled steel, not less than 20 gauge, butted at corner joints and secured to the frame with countersunk cadmium or zinc-plated screws. Loose stops at exterior frames shall be placed on the exterior side of the frames, unless otherwise shown.
13. At sound rated door openings and at masonry openings, coat inside of frame profile with bituminous coating to minimum thickness of 1/16 inch.

C. Frame Color: Field painted under Section 09900 to match face of door.

## 2.4 DOOR FABRICATION

A. Minimum Gauges:
   1. Interior Doors: 0.053 inch or 18 gauge
   2. Exterior Doors: 0.042 inch or 16 gauge

B. Design and Construction:
   1. Types: Doors shall be custom fabricated, of types and sizes shown on approved shop drawings, and shall be fully welded seamless construction with no visible seams or joints on faces or vertical edges.
   2. Thickness: Shall be 1-3/4 inch, unless specifically noted or shown otherwise.
   3. Fabrication:
      a. Doors shall be strong, rigid and neat in appearance, free from warpage and buckle.
      b. Corner bends shall be true and straight and of minimum radius for gage of metal used.
      c. Provide 22 gauge steel stiffeners spaced maximum six (6) inches on center and extending full height of door.
      d. Fill interior with noncombustible fiberglass insulation. Use mineral board filler as required for labeled doors.
      e. Faces shall be joined at vertical edges of door by a continuous weld extending full height of door. Welds shall be ground, filled and dressed smooth to provide a smooth flush surface.
      f. Top and bottom edges of doors shall be closed with a continuous recessed steel channel not less than 16 gauge, extending full width of door and spot weld to both faces. Exterior doors shall have an additional flush closing channel at top and bottom edges. Openings shall be provided in the bottom closure channel at top and bottom edges. Openings shall be provided in the bottom closure of exterior doors to permit the escape of entrapped moisture.
      g. Doors within in wet or humid areas shall have a top cap and solid foam interior core to prevent internal moisture accumulation.
      h. Edge profile shall be provided on both vertical edges of door as gollows:
         1) Single-Acting Swing Doors: Beveled 1/8 inch in 2 inches.
      i. Hardware Reinforcements:
         1) Doors shall be mortised, reinforced, drilled and tapped at factory for fully template hardware, in accordance with the approved hardware schedule and templates provided by Section 08710. Where surface-mounted hardware is to be applied, doors shall have reinforcing plates only.
         2) Minimum gauges for hardware reinforcing plates shall be as follows:
            a) Hinge & pivot reinforcements: 7 gauge
            b) Reinforcements for lock face, flush bolts, concealed holders, concealed on surface-mounted closers: 12 gauge

C. Finish:
   1. Shop paint Steel (whether galvanized or ungalvanized) stops and accessories as follows:
      a. Clean surfaces free of mill scale, rust, oil, grease, dirt and other foreign matter.
      b. Chemically treat surfaces and apply one (1) coat of an approved backed-on rust-inhibitive primer paint to provide a minimum 0.5 mil dry film thickness.

2 Field painted under Section 09900.

## 2.5 LABELED DOORS AND FRAMES

A. Labeled doors and frames shall be provided for openings requiring fire protection ratings as scheduled and to comply with NFPA 80. Such doors and frames shall be constructed as tested and approved by UL, WHI, or other nationally recognized testing agency having a factory inspection service and approved by code authorities having jurisdiction and shall bear the appropriate permanent label.

B. If any door or frame scheduled to be fire-rated cannot qualify for appropriate labeling because of its size, design, hardware or other reason; the Architect shall be so advised before fabrication work on that item is started.

## PART 3 – EXECUTION

## 3.1 INSTALALTION

A. Separate dissimilar metal. Protect against galvanic action.

B. Frames:
1. Anchorage and Connections: Secure to adjacent construction. Where practical, interior door frames shall be flush with the pull side wall to minimize or eliminate the reveal and allow full 180 degree door swing.
2. Install frames in accordance with manufacturer's instructions and install labeled frames in accordance with NFPA 80.
3. Frame Spreader Bars: Leave intact until frames are set perfectly square and plumb and anchors and securely attached.
4. Remove hardware, with the exception of prime-coated items, tag box, and reinstall after finish paint work is completed. Do not remove or paint over labels on labeled frames.

C. Doors:
1. Install hardware in accordance with hardware manufacturer's templates and instructions.
2. Install doors in accordance with manufacturer's instructions and install labeled doors in accordance with NFPA 80.
3. Adjust operable parts for correct function.
4. Remove hardware, with the exception of prime-coated items, tag, box, and reinstall after finish paint work is completed. Do not remove or paint over labels on labeled doors.

## 3.2 ADJUST AND CLEAN

A. Adjust doors for proper operation, free from binding or other defects.

B. Clean and restore soiled surfaces.

C. Remove scraps and debris, and leave site in clean condition.

**END OF SECTION**

**SECTION 08300**

**SPECIAL DOORS**

## PART 1 GENERAL

### 1.1 DESCRIPTION:

A. Work Included: Special doors required for this work include but are not limited to, roll-up and sliding wire mesh doors.

### 1.2 QUALITY ASSURANCE:

A. Qualification of Installers: Use only personnel thoroughly trained and experienced in installation of the selected products and who are completely familiar with the requirements of this work.

B. Manufacturer's Certification: Prior to start of installation, secure a visit to job site by the manufacturer's representative who shall inspect and certify that:

1. Openings in which special doors are to be installed are suitable for that installations.
2. Installed doors comply in all respects with requirements of these specifications.

C. Acceptable Manufacturers: Product description is based upon the designated manufacturer. Other manufacturers as indicated are acceptable provided they provide all the listed design criteria.

### 1.3 SUBMITTALS:

A. Submit shop drawings as required by Section 01340 before any special doors are delivered to the job site.

### 1.4 PRODUCT HANDLING:

A. Protection: Protect special doors, the installed work and materials of installation.

B. Replacements: In event or damage, make all repairs and replacements necessary to Architect's approval and at no additional cost to Owner.

## PART 2 PRODUCTS

### 2.2 SLIDING WIRE MESH DOORS:

A. Description:

1. Mesh
   a. Thickness: 10ga. (.135)
   b. Design: 2 1/8" x 1 1/8" (center to center) rectangular woven wire (2"x1"actual opening)
2. Panels
   a. Frame: 1 1/4" x 1 1/4" x 1/8" Angle
   b. Fabrication: Mesh is securely welded to frame with flat steel stiffeners welded to frame behind mesh panels longer than 3'-6".
   c. 12'-0"w x 5'-0"h maximum size
3. Doors
   a. Frame: 1 1/4" x 1 1/4" x 1/8" Angle
   b. Fabrication: Mesh is securely welded to frame with flat steel stiffeners welded to frame for extra strength where needed.
   c. Complete with two door posts, two 4 wheel trolley trucks, 16 gauge track, and all hardware.
4. Post
   a. Material: 2" x 2" x #14ga. Square Tubing
   b. Fabrication: 1/4" x 2" x 7" plate welded at base of post.
5. Hardware
   a. Shall be 3/8" standard thread grade two plated for panel connections.

b. Door hardware shall be ¼" x 1" self drilling screws.
c. 3/8" floor anchors and all other hardware furnished with each job.

6. Finish
   a. Architect to select from full range of available optional in-stock colors.

B. Manufacturer:
   1. **WireCrafters**, 6208 Strawberry Lane, Louisville, KY 40214
      **Phone:** 877-924-9473 **Fax:** 502-361-3857 **Email:** info@wirecrafters.com

   2. Substitutions permitted by Section 01600

## PART 3 EXECUTION

### 3.1 SURFACE CONDITION:

A. Inspection: Prior to installation, inspect installed work and verify that conditions are proper to commerce installation.

B. Discrepancies: Do not proceed with installation until all discrepancies have been fully resolved.

### 3.2 INSTALLATION:

A. Install in accordance with pertinent codes, regulations, original design, approved shop drawings and manufacturers current recommendations.

B. Anchor all components firmly into position for long life under hard use.

### 3.3 TOUCHING UP:

A. Touch up all scuffs and abrasions in priming coat.

### 3.4 INSTRUCTIONS:

A. Instruct Owner's maintenance and operation personnel in operation and maintenance of all special doors.

END OF SECTION

SECTION 08360
SECTIONAL OVERHEAD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Glazed Aluminum Sectional Overhead Doors

B. Electric Operators and Controls.
C.
D. Operating Hardware, tracks, and support.

1.2 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Prepared opening in concrete. Execution requirements for placement of anchors in concrete wall construction.

B. Section 04810 - Unit Masonry Assemblies: Prepared opening in masonry. Execution requirements for placement of anchors in masonry wall construction.

C. Section 05500 - Metal Fabrications: Steel frame and supports.

D. Section 06114 - Wood Blocking and Curbing: Rough wood framing and blocking for door opening.

E. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.

F. Section 08710 - Door Hardware: Cylinder locks.

G. Section 11150 – Parking Control Equipment: Remote door control.

H. Section 16130 - Raceway and Boxes: Empty conduit from control station to door operator.

I. Section 16150 - Wiring Connections: Electrical service to door operator.

1.3 REFERENCES

A. ANSI/DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code.
   1. Design pressure of 30 lb/sq ft

B. Wiring Connections: Requirements for electrical characteristics.
   1. 115 volts, single phase, 60 Hz.

C. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

E. Operation and Maintenance Data.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.

B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.

C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened labeled packaging until ready for installation.

B. Protect materials from exposure to moisture until ready for installation.

C. Store materials in a dry, ventilated weather tight location.

1.8 PROJECT CONDITIONS

A. Pre-Installation Conference: Convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Overhead Door Corp., 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: sales@overheaddoor.com.

A. Acceptable Manufacturer: Raynor, located at: 1101 East River Rd. P. O. Box 448 ; Dixon, IL 61021-0448; Toll Free Tel: 800-4-RAYNOR; Tel: 815-288-1431; Fax: 888-598-4790; Email: request info; Web: www.raynor.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 GLAZED ALUMINUM SECTIONAL OVERHEAD DOORS

A. Glazed Sectional Overhead Doors: 521 Series Aluminum Doors by Overhead Door Corporation, or AV200 Series by Raynor

1. Door Assembly: Stile and rail assembly secured with 1/4 inch (6 mm) diameter through rods.
   a. Panel Thickness: 1-3/4 inches (44 mm).
   b. Center Stile Width: 2-11/16 inches (68 mm)
   c. End Stile Width: 3-5/16 inches (84 mm)
   d. Intermediate Rail Pair Width: 3-11/16 inches (94 mm).
   e. Top Rail Width:
      1) 2-3/8 inches (60 mm).
      2) 3-3/4 inches (95 mm).
   f. Bottom Rail Width:
      1) 3-3/4 inches (95 mm).
      2) 4-1/2 inches (114 mm).
   g. Aluminum Panels: 0.050 inch (1.3 mm) thick, aluminum.
   h. Stiles and Rails: 6063 - T6 aluminum.
   i. Springs:
      1) 100,000 cycles.
   j. Glazing:
      1) 1/4 inch (6 mm) Low E glazing.
2. Finish and Color:
   a. Anodized Finish: Clear anodized.
3. Windload Design: Provide to meet the Design/Performance requirements specified.
4. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
5. Lock: Interior galvanized single unit.
6. Weatherstripping:
   a. Flexible bulb-type strip at bottom section.
   b. Flexible Jamb seals.
   c. Flexible Header seal.
7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
8. Manual Operation: Chain hoist.
9. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
   a. Entrapment Protection: Required for momentary contact, includes radio control operation.
      1) Electric sensing edge monitored to meet UL 325/2010.
      2) Photoelectric sensors monitored to meet UL 325/2010.
   b. Operator Controls:
      1) Push-button and key operated control stations with open, close, and stop buttons.
      2) Flush mounting.
      3) Interior location.
   c. Special Operation:
      1) Radio control operation.

PART 3 EXECUTION

## 3.1 EXAMINATION

A. Do not begin installation until openings have been properly prepared.

B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

C. Verify electric power is available and of correct characteristics.

D. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

## 3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

## 3.3 INSTALLATION

A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.

B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.

C. Anchor assembly to wall construction and building framing without distortion or stress.

D. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

E. Fit and align door assembly including hardware.

F. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

## 3.4 CLEANING AND ADJUSTING

A. Adjust door assembly to smooth operation and in full contact with weather stripping.

B. Clean doors, frames and glass.

C. Remove temporary labels and visible markings.

## 3.5 PROTECTION

A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

B. Protect installed products until completion of project.

C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

**END OF SECTION**

SECTION 08625

TUBULAR DAYLIGHTING DEVICE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Tubular daylighting device, consisting of roof dome, reflective tube, and diffuser assembly; configuration as indicated on the drawings.

1.2 RELATED SECTIONS

A. Section 07311 - Asphalt Shingles: Flashing of skylight base.

B. Section 07320 - Roof Tiles: Flashing of skylight base.

C. Section 07600 - Flashing: Metal flashings.

D. Section 07611 – Prefabricated Metal Building Roof Curbs

E. Section 08620 - Unit Skylights: Skylights without reflective tube.

F. Section 15810 - Ducts: Fan vent duct and connections.

G. Section 16150 - Equipment Wiring: Electrical connections.

1.3 REFERENCES

A. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2008a.

C. ASTM A 463/A 463M - Standard Specification for Steel Sheet, Aluminum Coated, by the Hot Dip Process; 2006.

D. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized), by the Hot Dip Process; 2007.

E. ASTM E 283 - Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004.

F. ASTM E 308 - Standard Practice for Computing the Colors of Objects by Using the CIE System; 2006.

G. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors; 2002.

H. ASTM E 547 - Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain walls by Cyclic Air Pressure Difference; 2000.

I. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain

Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

J. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricane.

K. ASTM D 635 - Test Method for Rate of Burning and/or Extent of Time of Burning of Self-Supporting Plastics in a Horizontal Position; 2006.

L. ASTM D-1929 - Test Method for Ignition Properties of Plastics; 1996 (2001).

M. UL 181 - Factory Made Air Ducts and Air Connectors

N. ICC AC-16 - Acceptance Criteria for Plastic Skylights; 2008.

O. Florida Building Code TAS 201 – Impact Test Procedures.

P. Florida Building Code TAS 202 – Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading.

Q. Florida Building Code TAS 203 – Criteria for Testing Products Subject to Cyclic Wind Pressure Loading

1.4 PERFORMANCE REQUIREMENTS

A. Completed tubular daylighting device assemblies shall be capable of meeting the following performance requirements:
   1. Air Infiltration Test: Air infiltration will not exceed 0.30 cfm/sf aperture with a pressure delta of 1.57 psf across the tube when tested in accordance with ASTM E 283.
   2. Water Resistance Test: No uncontrolled water leakage at 10.5 psf pressure differential with water rate of 5 gallons/hour/sf when tested in accordance with ASTM E 547.
   3. Uniform Load Test:
      a. No breakage, permanent damage to fasteners, hardware parts, or damage to make daylighting system inoperable or cause excessive permanent deflection of any section when tested at a Positive Load of 150 psf (7.18 kPa) or Negative Load of 70 psf (3.35 kPa).
      b. All units shall be tested with a safety factor of (3) for positive pressure and (2) for negative pressure, acting normal to plane of roof in accordance with ASTM E 330.
   4. Hurricane Resistance:
      a. Meets Florida Building Code TAS, 201, TAS, 202 and TAS 203 for Impact and non impact components.
      b. Meets ASTM E 1886 and ASTM E1996 for missile and cyclic pressure differential testing.
   5. Fire Testing:
      a. When used with the Dome Edge Protection Band, all domes meet fire rating requirements as described in the 2006 International Building Code.
      b. Self-Ignition Temperature - Greater than 650 degrees F per ASTM D-1929.
      c. Smoke Density - Rating no greater than 450 per ASTM Standard E 84 in way intended for use. Classification C.
      d. Rate of Burn and/or Extent - Maximum Burning Rate: 2.5 inches/min

(62 mm/min) Classification CC-2 per ASTM D 635.

e. Rate of Burn and/or Extent - Maximum Burn Extent: 1 inch (25 mm) Classification CC-1 per ASTM D 635.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings. Submit shop drawings showing layout, profiles and product components, including anchorage, flashings and accessories.

D. Verification Samples: As requested by Architect.

E. Test Reports: Independent testing agency or evaluation service reports verifying compliance with specified performance requirements.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engaged in manufacture of tubular daylighting devices for minimum 15 years.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

A. Daylighting Device: Manufacturer's standard warranty for 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Solatube International, Inc., which is located at: 2210 Oak Ridge Way ; Vista, CA 92081; Toll Free Tel: 888-765-2882; Tel: 760-477-1120; Email: request info (commsales@solatube.com); Web: www.solatube.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 TUBULAR DAYLIGHTING DEVICES

A. Tubular Daylighting Devices General : Transparent roof-mounted skylight dome and self-flashing curb, reflective tube, and ceiling level diffuser assembly,

transferring sunlight to interior spaces; complying with ICC AC-16.

B. Skyvault Series: Solatube Model SM74 DS Open Ceiling Ceiling, 28.5 inch and 290 DS Penetrating Ceiling 14 inch Daylighting System:
   1. Roof Dome Assembly: Transparent, UV and impact resistant dome with flashing base supporting dome and top of tube.
      a. Outer Dome Glazing: Type DP, 0.125 inch (3.2 mm) minimum thickness injection molded acrylic classified as CC2 material; UV inhibititing (100 percent UV C, 100 percent UV B and 98.5 percent UV C), impact modified acrylic blend.
      b. Raybender 3000 (for 290 DS): Variable prism optic molded into outer dome to capture low angle sunlight and limit high angle sunlight.
      c. Inner Dome Glazing: Type DPP, 0.115 inch (3 mm) minimum thickness polycarbonate classified as CC1 material.
      d. Seals:
         1) Inner Dome Seal: Adhesive back closed cell foam seal 0.125 inch (3.2 mm) or 0.188 inch (4.8 mm) tall by 0.375 inch (9.5 mm) wide.
         2) Dome Assembly Seal: Adhesive backed pile weather-strip, 0.350 inch (8.9 mm) tall by 0.187 inch (4.8 mm) wide.
   2. Curb Cap Flashing Base: One piece, seamless, leak-proof flashing and base support for dome and top of tube and cap flashing. Fabricated of galvanized steel, conforming to ASTM A 653/A 653M or ASTM A 463/A 463M or ASTM A792/A 792M, with a thickness of 0.0276 inch (0.7 mm) plus or minus .004 inch (.01 mm).
      a. Base Style: Type FC, Curb-cap, with inside dimensions of 35.5 inches by 35.5 inches (902 mm by 902 mm) to cover curb specified in Section 07600.
      b. Insulation: Nominal 1-inch thick thermal isolation pad to reduce thermal conduction between curb-cap and tubing and thermal convection between room air and curb-cap. Rated R-6 (OFxft2xhr/Btu) Insulation is Polyisocyanurate foam utilizing CFC, HCFC, & HFC free blowing agent. Type-1 Class-1 per ASTM C1289; Passes UL 1715 (15-minute thermal barrier per IBC 2603.4); Attic ventilation may be required per IBC 1203.2
      c. Curb Seal: Includes a double bead of adhesive backed closed cell foam seal 0.188 inch (4.8mm) tall by 0.375 inch (9.5mm) wide to reduce air infiltration.
   3. Dome Seal: Adhesive backed weatherstrip 0.63 inch (16 mm) tall by 0.28 inch (7 mm).
   4. Reflective Tubes: Aluminum sheet, thickness 0.018 inch (0.5 mm).
      a. General:
         1) Interior Finish: Spectralight Infinity high reflectance specular finish on exposed reflective surface. Specular reflectance for visible spectrum (400 nm to 760 nm) greater than 99 percent. Total solar spectrum reflectance (400 nm to 2500 nm) less than 80.2 percent.
         2) Color: a* and b* (defined by CIE L*a*b* color model) shall not exceed plus 2 or be less than minus 2 as determined in accordance to ÅSTM E 308.
      b. Top Tube Angle Adapter and Bottom Top Tube Angle Adapter Kit, Type AK:
         1) Reflective 45 degree adjustable top and bottom angle adapters (one each), 16 inches (406 mm) long
      c. Extension Tube:
         1) Reflective extension tube, Type EXX, Notched for Open Ceiling diffuser attachment, 24 inches (610 mm) long

5. Diffuser Assemblies for Tubes Penetrating Ceilings: Solatube Model 290 DS. Ceiling mounted box transitioning from round tube to round ceiling diffuser assembly, supporting light transmitting surface at bottom termination of tube; 14" round to fit hard ceilings.
   a. Lens: Type L1 OptiView Fresnel lens design to maximize light output and diffusion with extruded aluminum frame and EPDM foam seal to minimize condensation and bug, dirt and air infiltration per ASTM E 283. Visible Light Transmission shall be greater than 90 percent at 0.022 inch (0.6 mm) thick. Classified as CC2.

6a Diffuser Assembly for Tubes in Opening Ceiling Condition: Solatube Model M74 DS. Amplifier tube mounted to bottom extension tubes. Bottom of diffuser to be mounted no less than 20 feet above the finish floor below to meet 20 foot minimum clearance.
   a. Lens: Type L2, Prismatic lens designed to maximize light output and diffusion. Visible Light Transmission shall be greater than 90 percent at 0.100 inch (2.5 mm) thick. Classified as CC2.
   b. Diffuser Seal: "L" shaped EPDM closed cell foam, , 0.86 in (21.8 mm) wide by 1.37 in (34.8mm) tall by 0.16 in (4.1 mm) thick to minimize condensation and bug, dirt and air infiltration per ASTM E 283.

6. Catalog Number: SM74 DS-0-DPP-SG-FC-E1-A-L2 (21 inch dome)
   290 DS-DA-FCM-EXX-L1-I-SW (14 inch dome)

2.3 ACCESSORIES

A. Fasteners: Same material as metals being fastened, non-magnetic steel, non-corrosive metal of type recommended by manufacturer, or injection molded nylon.

B. Suspension Wire: Steel, annealed, galvanized finish, size and type for application and ceiling system requirement.

C. Sealant: Polyurethane or copolymer based elastomeric sealant as provided or recommended by manufacturer.

D. Local Dimmer Control utilizing a butterfly baffle design of Spectralight Infinity reflective material to minimize shadowing when in use. Provided with dimmer switch and cable.

   1. Daylight Dimmer: Type D Electro-mechanically actuated daylight valve; for universal input voltages ranging between 90 and 277 V at 50 or 60 Hz; Maximum current draw of 50 ma per unit; controlled by low voltage, series Type T02: circuited, 4 conductor, 22 gauge cable; providing daylight output between 2 and 100 percent.
   2. Switch: Type SW, Manufacturer-specific low voltage DC DP/DT switch (white) required to operate Daylight Dimmer. Note: A maximum of 10 units can be connected to one switch.
   3. Cable: Type CA, Two conductor, 22 gauge, low voltage cable (500 ft.) for multiple unit DC connections.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION

A. Install in accordance with manufacturer's printed instructions.

B. After installation of first unit, field test to determine adequacy of installation. Conduct water test in presence of Owner, Architect, or Contractor, or their designated representative. Correct if needed before proceeding with installation of subsequent units.

### 3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

S750 DS-C = SolaMaster® Series Solatube 750 DS-C Closed Ceiling (21 in/530 mm Daylighting System)
DPI = Polycarbonate Inner Dome (Required for High Velocity Wind Zones)
FC = Curb Cap (Curb By Others)
AK = 16” Top Tube Angle Adapter and 16” Bottom Tube Angle Adapter Kit
EXX = Total Run Length to be Determined by Bidding Contractor
L1 = OptiView Diffuser

# SECTION 08 71 00

# FINISH HARDWARE

## PART 1 - GENERAL

### 1.01 DESCRIPTION OF WORK

A. Work under this section comprises of furnishing hardware specified herein and noted on drawings for a complete and operational system, including any electrified hardware components, systems, controls and hardware for aluminum entrance doors. Any door shown on the drawing and not specifically referenced in the hardware sets shall be provided with identical hardware as specified on other similar openings and shall be included in the General Contractor's base bid. All fire rated door shall be provided with fire rated hardware as required by local code Authority as part of the General Contractor's base bid. The hardware supplier shall verify all cylinder types specified for locking devices supplied as part of the door system with the door manufacturer and/or door supplies.

B. The General Contractor shall notify the Architect in writing of any discrepancies (five (5) days prior to bid date) that could and/or would result in hardware being supplied that is none functional, hardware specified and/or hardware that has not been specified that will result in any code violations and any door that is not covered in this specification. Failure of the General Contractor to address any such issue could be considered acceptance of the hardware specified and all discrepancies could be corrected at the General Contractor's expense.

C. Items include but are not limited to the following:

1. Hinges - Pivots
2. Flush Bolts
3. Exit Devices
4. Locksets and Cylinders
5. Push Plates - Pulls
6. Coordinators
7. Closers
8. Kick, Mop and Protection Plates
9. Stops, Wall Bumpers, Overhead Controls
10. Electrified Hold Open Devices
11. Thresholds, Seals and Door Bottoms
12. Silencers
13. Miscellaneous Trim and Accessories

### 1.02 RELATED DOCUMENTS, drawings and general provisions of contract, including General and Supplementary Conditions, and Division 1 Specification sections, apply to this section.

### 1.03 RELATED WORK specified elsewhere that should be examined for its effect upon this section:

A. Section 06 20 00 - Finish Carpentry
B. Section 08 11 13 – Steel Doors and Frames
C. Section 08 14 16 – Flush Wood Doors
D. Sections within 08 31 13 – Access Doors

E. Section within 08 41 13 – Aluminum Entrances, Storefront and Window Framing
F. Sections within 08 80 00 – Glass and Glazing
G. Sections within 09 91 00 - Painting
H. Division 26 - Electrical

1.04 REFERENCES SPECIFIED in this section subject to compliance as directed:

A. NFPA-80 - Standard for Fire Doors and Windows
B. NFPA-101 - Life Safety Code
C. ADA - The Americans with Disabilities Act - Title III - Public Accommodations
D. ANSI-A 117.1 - American National Standards Institute - Accessible and Usable Buildings and Facilities
E. ANSI-A 156.5 - American National Standards institute -Auxiliary Locks and Associated Products
F. UFAS - Uniform Federal Accessibility Standards
G. UL - Underwriter's Laboratories
H. WHI - Warnock Hersey International, Testing Services
I. State and Local Codes including Authority Having Jurisdiction
J. U.B.C.7-2-97 and UL10C
K. IBC-2012 – International Building Code
L. NFPA-70 International Electrical Code

1.05 SUBMITTALS

A. HARDWARE SCHEDULES submit copies of schedule in accordance with Division 1, General Requirements. Schedule to be in vertical format, listing each door opening, including: handing of opening, all hardware scheduled for opening or otherwise required to allow for proper function of door opening as intended, and finish of hardware. At doors with door closers or door controls include degree of door opening. Supply the schedules all Finish Hardware within two (2) weeks from date purchase order is received by the hardware supplier.

B. Submit manufacturer's cut/catalog sheets on all hardware items and any required special mounting instructions with the hardware schedule.

C. Certification of Compliance:

1. Submit any information necessary to indicate compliance to all of these specifications as required.
2. Submit a statement from the manufacturer that electronic hardware and systems being supplied comply with the operational descriptions exactly as specified.

D. Submit any samples necessary as required by the Architect.

E. Templates for finish hardware items to be sent to related door and frame suppliers within three (3) working days of receipt of approved hardware schedule.

F. Doors and Frames used in positive pressure opening assemblies shall meet U.B.C. 7-2-97 and UL10C in areas where this specification includes Seals for smoke door.

1.06 QUALITY ASSURANCE

A. Hardware supplier to be a qualified, Factory Authorized, direct distributor of the products to be furnished. In addition, the supplier to have in their regular employment an AHC or AHC /CDC and/or a person of equivalent experience (minimum fifteen (15) years in the industry) who will be made available at reasonable times to consult with the Architect/Contractor and/or the Building Owner regarding any matters affecting the finish hardware on this project.

B. All hardware used in labeled fire or smoke rated openings to be listed for those types of openings and bear the identifying label or mark indicating UL. (Underwriter's Laboratories) approved for fire. Exit devices in non-labeled openings to be listed for panic.

1.07 DELIVERY, HANDLING AND PACKAGING

A. Furnish all hardware with each unit clearly marked and numbered in accordance with the hardware schedule. Include door and item number for each.

B. Pack each item of hardware completes with all necessary parts and fasteners.

C. Properly wrap and cushion each item to prevent scratches and dents during delivery and storage.

1.08 SEQUENCING AND SCHEDULING

Any part of the finish hardware required by the frame or door manufacturers or other suppliers that is needed in order to produce doors or frames is to be sent to those suppliers in a timely manner, so as not to interrupt job progress.

1.09 WARRANTY

All finish hardware shall be supplied with a One- (1) year warranty against defects in materials and workmanship, commencing with substantial completion of the project except as follows:

1. All Closers are to have a ten- (10) year written warranty.
2. All Exit Devices (Grade 1) are to have a three- (3) year written warranty.
3. All Locksets (Grade 1) are to have a ten- (10) year written warranty.
4. All Continuous Hinges are to have a ten- (10) year written warranty.

PART 2 – PRODUCTS

2.01 FASTENERS

A. Furnish with finish hardware all necessary screws, bolts and other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use.

B. Furnish fastenings where necessary with expansion shields, toggle bolts and other anchors designated by the Architect according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer. All closers and exit devices on labeled wood doors shall be through-bolted if required by the door manufacturer. All thresholds shall be

fastened with wood screws and plastic anchors. Where specified in the hardware sets, security type fasteners of the type called for are to be supplied.

C. Design of all fastenings shall harmonize with the hardware as to material and finish.

D. All hardware shall be installed with the Manufacturers standard screws as provided. The use of any other type of fasteners shall not be permitted. The general contractor shall provide wood blocking in all stud walls specified and/or scheduled to receive wall stops, No Exception.

2.02 ENVIRONMENTAL CONCERN FOR PACKAGING

The hardware shall ship to the job site is to be packaged in biodegradable packs such as paper or cardboard boxes and wrapping.

2.03 HINGES

A. All hinges to be of one manufacturer as hereafter listed for continuity and consideration of warranty. Provide one of the following manufacturers Ives, Hager or Stanley.

B. Unless otherwise specified provide five-knuckle, heavy-duty, button tip, full mortise template type hinges with non-rising loose pins. Provide non-removable pins for out swinging doors at secured areas or as called for in this specification (Refer to 3.02 Hardware Sets).

C. Provide all out-swinging doors with non-removable pins or security studs as called for in 3.02 Hardware Sets. Furnish three (3) hinges up to 90 inches high and one (1) additional hinge for every 30 inches or fraction thereof.

D. Furnish three (3) hinges up to 90 inches high and one (1) additional hinge for every 30 inches or fraction thereof.

E. Provide size 4½” x 4½” for all 1¾” thick doors up to and including 36 inches wide. Doors over 1¾” through 2¼” thick, use 5” x 5” hinges. Doors over 36 inches use 5” x 4½” unless otherwise noted in 3.02 Hardware Sets.

F. Were required to clear the trim and/or to permit the doors to swing 180 degrees furnish hinges of sufficient throw.

G. Provide heavy weight hinges on all doors over 36 inches in width.

H. At labeled door’s steel or stainless steel, bearing-type hinges shall be provided. For all doors equipped with closers provide bearing-type hinges.

2.04 LOCK AND LOCK TRIM

A. All of the locksets, latch sets, and trim to be of one manufacturer as hereafter listed for continuity of design and consideration of warranty. Locksets specified are Schlage “ND” series with the Rhodes lever as specified.

B. Provide metal wrought box strike boxes and curved lip strikes with proper lip length to protect trim of the frame, but not to project more than 1/8 inch beyond frame trim or the inactive leaf of a pair of doors.

C. Mechanical Locks shall meet ANSI Operational Grade 1, Series 4000 as specified.

1. Hand of lock is to be field reversible or non-handed.
2. All lever trim is to be through-bolted through the door.
3. Provide all pairs of doors with a ¾" latch bolt throw.

2.05 CYLINDERS AND KEYING

A. Provide all exterior and interior locks or Exit Devices requiring cylinders keyed to the New Large Format Interchangeable Core Master Key System and which also complies with performance requirements of ANSI A156.5. All keys shall be of nickel silver material only. The hardware supplier shall meet with the General Contractor, the Architect and the Building Owner Representative at the project jobsite to determine all permanent keying requirements.

B. Cylinders shall be factory keyed and factory maintained as directed by the Building Owner Representative and the Architect. Provide three- (3) keys per cylinder and six- (6) master keys per master used.

C. Factory stamp all keys "Do not duplicate" and with key symbol as directed by the Building Owner Representative. Visual key control shall be provided on all permanent keys and cylinders.

D. Furnish all locks, cylinders and Exit devices with temporary keyed construction cores for the duration of construction. Provide ten (10) construction keys and two (2) construction control keys total. The general contractor shall within thirty (30) days of the installation of permanent cores return all construction cores to the hardware supplier for full credit.

2.06 EXIT DEVICES

A. All exit devices and trim, including electrified items, to be of one manufacturer as hereafter listed and in the hardware sets for continuity of design and consideration of warranty; electrified devices and trim to be the same series and design as mechanical devices and trim.

B. Exit Devices to be "UL" listed for life safety. All exit devices for labeled doors shall have "UL" label for "Fire Exit Hardware". All devices mounted on labeled wood doors are to be through-bolted or per the manufacturer's listing requirements. All devices shall conform to NFPA 80 and NFPA 101 requirements.

C. All exit devices to be of a heavy duty, chassis mounted design, with a one-piece removable covers, eliminating necessity of removing the device from the door for standard maintenance and keying requirements.

D. All trims to be through-bolted to the lock stile case. Lever design to be the same as specified with the lock sets.

E. Exit Devices shall be the modern push rail design. All exit devices shall be mounted with sex bolts.

F. All devices shall carry a three- (3) year warranty against manufacturing defects and workmanship. Exit devices shall be certified by an independent testing lab for a minimum of 1,000,000 cycles.

G. Furnish roller strikes for all rim and surface vertical rod exit devices. Internal springs shall be coil compression type. Furnish security dead latching for all active latch bolts. Latch bolts to have self lubricating coating to reduce friction and wear. Plated latch bolts not accepted.

H. All Exit Devices shall be field modifiable as incorporate an Electric Latch Retraction Feature without the purchase of new Panic Exit Hardware.

J. Exit Devices shall be the Von Duprin “99” series as specified, unless prior written approval is granted in compliance with the General Conditions of the project.

2.07 SURFACE MOUNTED DOOR CLOSERS

A. All closers for this project shall be the products of a single manufacturer for continuity of design and consideration of warranty. All door closers shall be mounted as to achieve the maximum degree of opening (trim permitting).

A. All closers to be heavy duty, surface-mounted, fully hydraulic, rack and pinion action with high strength cast iron cylinder to provide control throughout the entire door opening cycle.

C. Size all closers in accordance with the manufacturer’s recommendations at the factory.

D. All closers to have adjustable spring power sizes 1 or 2 through 4 or 6 and separate tamper resistant, brass, non-critical regulating screw valves for closing speed, latching speed and back-check control as a standard feature unless specified other wise.

E. All closer covers to be rectangular, full cover type of non-ferrous, non-corrosive material painted to match closer. Provide closer covers only if provided as a standard part of the door closer package.

F. Closers shall have heavy-duty arms. All closer arms shall be of sufficient length to accommodate the reveal depth and to insure proper installation. The hardware supplier shall provide any and all required brackets, spacers or filler plates as required by the manufacture for a proper and functional installation as part of their base bid.

G. Supply appropriate arm assembly for each closer so that closer body and arm are mounted on non-public side of door opening and on the interior side of exterior openings, except where required otherwise in the hardware sets.

1. All parallel arm mounted closers to be factory indexed to insure proper installation.

2. Furnish heavy-duty cold forged parallel arms for all parallel arm mounted closers.

H. Provide closers with special application and heavy-duty arms as specified in the hardware sets or as otherwise called for to insure a proper operating, long lasting opening. Drop plates and any additional mounting brackets required for the proper installation of the door closer shall be included in the hardware supplier's base bid.

I. Finish: Baked on Powder Coated finish shall match other hardware.

J. Provide and mount all door closers with sex bolts as provided by the manufacturer.

K. Closers shall be LCN 4040XP and 1461 FC series as specified unless prior written approval is granted in compliance with the General Conditions of the project.

2.08 DOOR STOPS AND HOLDERS

A. Door stops are to be furnished for every door leaf. Every door is to have a floor, wall, or an overhead stop.

B. Place doorstops in such a position that they permit maximum door swing, but do not present a hazard of obstruction. Furnish floor strikes for floor holders of proper height to engage holders of doors.

C. Where overhead stops and holders are specified, or otherwise required for proper door operation, they are to be heavy duty and of extruded brass, bronze or stainless steel with no plastic parts as specified**.** The General Contractor shall provide wood blocking in all stud walls specified and scheduled to receive wall stops.

D. Finish: Shall match other hardware where available.

E. Acceptable Products

1. Floor and wall stops as listed in hardware sets. Equivalent products as manufactured by Ives, ABH, Glynn Johnson and Trimco are acceptable.

2.09 PUSH PLATES, DOOR PULLS, AND KICKPLATES

A. All push plates, door pull, kick plates and other miscellaneous hardware as listed in hardware sets. Equivalent products as manufactured by Ives, Hager and Trimco are acceptable.

B. Kick plates to be 10 inches high and Mop plates to be 6 inches high, both by 2 inches or 1 inch less than door width (LDW) as specified. They are to be of 16 gauge thick base metal. For door with louvers or narrow bottom rails, kick plate height to be 1 inch less dimension shown from the bottom of the door to the bottom of the louver or glass.

C. Where required armor plates, edge guards and other protective hardware shall be supplied in sizes as scheduled in the hardware sets.

D. Finish: Same as other hardware where available.

2.10 FLUSH BOLTS AND COORDINATORS

A. Provide Flush bolts with Dust Proof Strikes as indicated in the individual hardware sets by Ives, Hager and Trimco are acceptable. Finish shall match the adjacent hardware.

2.11 THRESHOLDS AND SEALS

A. Provide materials and finishes as listed in hardware sets. National Guard Products has been specified to set a high level of quality, equivalent product by manufactured by Zero, and Pemko shall be acceptable. All thresholds must be in accordance with the requirements of the ADA and ANSI A117.1.

B. Provide thresholds with wood screws and plastic anchors. Supply all necessary anchoring devices for weather strip and sound seal.

C. Seals shall comply with requirements of U.B.C. 7-2-97 and UL10C. All thresholds, door bottoms and weather strip inserts shall be a silicone based product as specified in 3.02 Hardware Sets. Other materials used shall be rejected, unless originally specified.

D. Seals shall comply with the requirements of the Wood Door Manufacturer's certification requirements.

E. All thresholds shall be provided with none slip coating (SIA) as specified in the hardware sets.

2.12 FINISHES

A. Finishes for all hardware are as required in this specification and the hardware sets.

B. Special care is to be taken to make uniform the finish of all various manufactured items.

2.13 DOOR SILENCERS

A. Provide door silencers at all openings without gasket. Provide two- (2) each at pair of doors and three- (3) or four- (4) each for each single door (coordinate with the frame manufacturer).

2.14 PROPRIETARY PRODUCTS

A. References to specific products are used to establish quality standards of utility and performance. Unless otherwise approved provide only the specified product.

B. All other materials, not specifically described, but required for a complete and proper finish hardware installation, are to be selected by the Contractor, subject to the approval of the Architect and the Building Owner Representative.

B. Architect and the Building Owner Representative reserve the right to approve all the substitutions proposed for this specification. All requests for substitution to be made prior to bid in accordance with Division 1, General Requirements, and are to be in writing, hand delivered to the Architect. Two (2) copies of the manufacturer's brochures and a physical sample of each item in the appropriate design and finish shall accompany requests for substitution.

PART 3 - EXECUTION

3.01 INSTALLATION AND SERVICE ITEMS OF FINISH HARDWARE

A. All finish hardware shall be installed by an experienced finish hardware installer with at least ten (10) years experience after a pre-installation meeting between the contractor, hardware Manufacturers representative, the hardware supplier, the hollow metal supplier and the wood door supplier. The finish hardware installer shall be responsible for the proper installation and function of all doors and hardware.

B. The hardware supplier's office and/or warehouse shall be located within a one hundred twenty five (125) mile radius of the project site as to better service the general contractor and the Building Owner Representative during the course of this project.

C. Check hardware against the reviewed hardware schedule upon delivery. Store the hardware in a dry and secure location to protect against loss and damage.

D. Install finish hardware in accordance with approved hardware schedule and manufacturers' printed instructions. Pre-fit hardware before finish is applied to door; remove and reinstall after finish is complete and dry. Install and adjust hardware so that parts operate smoothly, close tightly, and do not rattle.

E. Mortise and cutting to be done neatly, and evidence of cutting to be concealed in the finished work. Protect all Finish hardware from scratching or other damage.

F. The hardware supplier, general contractor and hardware installer shall after three (3) months of the Building Owner acceptance of the facility perform an on site survey of the finish hardware. Any item of finish hardware found to be defective or out of adjustment shall be replaced or adjusted for the proper function and operation of the door assembly at the contractor's, supplier's and/or installer's expense. The hardware supplier shall provide a written report of any and all affected items to the Architect and the Building Owner (No Exceptions). The scheduled inspection date for the on site inspection and adjustment of finish hardware shall be provided to the Architect as a part of the general contractor and hardware supplies close-out documentation for this project.

3.02HARDWARE SETS
SPEXTRA: 87377

HARDWARE SET # 01

DOORS #
1/112

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 2 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 2 | EA | PANIC HARDWARE | 9949-L-996-06-SNB | 628 | VON |
| 2 | EA | CYLINDER | 20-059/20-079 AS REQUIRED | 626 | SCH |
| 2 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 2 | EA | SURFACE CLOSER | 4040XP SCUSH | 689 | LCN |
| 2 | EA | PA MOUNTING PLATE | 4040-18PA | 689 | LCN |
| 2 | EA | CUSH SHOE SUPPORT | 4040-30 | 689 | LCN |
| 2 | EA | BLADE STOP SPACER | 4040-61 | 689 | LCN |
| 2 | EA | DOOR BOTTOM | 1015AV-DOOR WIDTH | AL | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH<br>WEATHERSTRIP BY DOOR/FRAME MANUFACTURER | | NGP |

HARDWARE SET # 02 (ACCESS CONTROLLED)

DOORS #
2/100 3/102

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 1 | EA | PANIC HARDWARE | 99-L-996-06-SNB | 628 | VON |
| 1 | EA | CYLINDER | 20-059/20-079 AS REQUIRED | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 4040XP EDA TBSRT | 689 | LCN |
| 1 | EA | PA MOUNTING PLATE | 4040-18PA | 689 | LCN |
| 1 | EA | ELECTRIC STRIKE | 6111 FSE EB 24VDC | 630 | VON |
| 1 | EA | FLOOR STOP | FS18S | BLK | IVE |
| 1 | EA | DOOR BOTTOM | 1015AV-DOOR WIDTH | AL | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH<br>WEATHERSTRIP BY DOOR/FRAME MANUFACTURER | | NGP |

CARD READER AND POWER SUPPLY PROVIDED BY SECURITY CONTRACTOR.

HARDWARE SET # 03

DOORS #
7/118 8/118

EACH TO HAVE:

| | | | |
|---|---|---|---|
| | ALL HARDWARE | PROVIDED BY THE OVERHEAD DOOR MFG. | |

HARDWARE SET # 04

DOORS #
6/124

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | CYLINDER | 20-059/20-079 AS REQUIRED | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |

| | |
|---|---|
| BALANCE HARDWARE | PROVIDED BY THE WIRE MESH DOOR MFG. |

HARDWARE SET # 05

DOORS #
4/111

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 2 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 1 | SET | AUTO FLUSH BOLT | FB31P | 630 | IVE |
| 1 | EA | DUST PROOF STRIKE | DP1 | 626 | IVE |
| 1 | EA | PANIC HARDWARE | 9949-L-996-06-SNB | 628 | VON |
| 1 | EA | CYLINDER | 20-059/20-079 AS REQUIRED | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | COORDINATOR | 3092 | 689 | TRI |
| 2 | EA | SURFACE CLOSER | 4040XP HEDA TBSRT | 689 | LCN |
| 2 | EA | FLOOR STOP | FS18S | BLK | IVE |
| 1 | EA | DRIP CAP | 16A-FRAME HEADER PLUS 4" | 628 | NGP |
| 1 | EA | HEAD SEAL | 700S-LENGTH REQUIRED | AL | NGP |
| 2 | SET | JAMB SEAL | 162S-LENGTH REQUIRED | 628 | NGP |
| 1 | SET | ASTRAGAL | 9605A-DOOR HEIGHT | 628 | NGP |
| 2 | EA | DOOR BOTTOM | 1015AV-DOOR WIDTH | AL | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH | | NGP |

INSTALL DOORS WITH A MAXIMUM GAP OF 1/4" BETWEEN THE DOORS LEAFS. INSTALLATION OF HEAD SEAL MUST BE DONE BEFORE THE INSTALLATION OF THE SURFACE MOUNTED DOOR CLOSERS AND COORDINATOR.

HARDWARE SET # 06

DOORS #
5/118

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 1 | EA | PANIC HARDWARE | 99-L-996-06-SNB | 628 | VON |
| 1 | EA | CYLINDER | 20-059/20-079 AS REQUIRED | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 4040XP SCUSH | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | DRIP CAP | 16A-FRAME HEADER PLUS 4" | 628 | NGP |
| 1 | EA | HEAD SEAL | 700S-LENGTH REQUIRED | AL | NGP |
| 2 | SET | JAMB SEAL | 162S-LENGTH REQUIRED | 628 | NGP |
| 1 | EA | DOOR BOTTOM | 1015AV-DOOR WIDTH | AL | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH | | NGP |

INSTALLATION OF HEAD SEAL MUST BE DONE BEFORE THE INSTALLATION OF THE SURFACE MOUNTED DOOR CLOSER.

HARDWARE SET # 07

DOORS #
12/107 12/109 12/116 12/117

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | 652 | IVE |
| 1 | EA | PASSAGE SET | ND10S RHO | 626 | SCH |
| 1 | EA | INDICATOR DEADBOLT | B571 X (6) 61-510 | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | DOOR STOP | FS17 OR WS407CCV AS REQUIRED | 626 | IVE |
| 1 | EA | COAT AND HAT HOOK | 582 | 626 | IVE |
| 3 | EA | SILENCER | SR64 | GRY | IVE |

HARDWARE SET # 08

DOORS #
10/104 10/110 10/115

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 2 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 1 | SET | AUTO FLUSH BOLT | FB41P | 630 | IVE |
| 1 | EA | DUST PROOF STRIKE | DP2 | 626 | IVE |
| 1 | EA | CLASSROOM LOCK | ND70TD RHO 14-042 | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | COORDINATOR | 3092 | 689 | TRI |
| 2 | EA | SURFACE CLOSER | 1461 HDPA FC TBSRT | 689 | LCN |
| 2 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 2 | EA | WALL STOP | WS407CCV | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |
| 1 | SET | ASTRAGAL | 9605A-DOOR HEIGHT | 628 | NGP |

INSTALL DOORS WITH A MAXIMUM GAP OF 1/4" BETWEEN THE DOORS LEAFS.
180 DEGREE DOOR SWING REQUIRED.

HARDWARE SET # 09

DOORS #
9/101 9/103 9/105

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | 652 | IVE |
| 1 | EA | ENTRANCE LOCK | ND53TD RHO | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | WALL STOP | WS407CCV | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |

HARDWARE SET # 10A (ACCESS CONTROLLED)

DOORS #

11/106A

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | 652 | IVE |
| 1 | EA | CLASSROOM LOCK | ND70TD RHO | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | ELECTRIC STRIKE | 6211 FSE EB 24VDC | 630 | VON |
| 1 | EA | SURFACE CLOSER | 1461 FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | WALL STOP | WS407CCV | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |

CARD READER AND POWER SUPPLY PROVIDED BY SECURITY CONTRACTOR.

HARDWARE SET # 10B

DOORS #
11/106B

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | 652 | IVE |
| 1 | EA | PASSAGE SET | ND10S RHO | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | WALL STOP | WS407CCV | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |

HARDWARE SET # 11

DOORS #
13/108

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HINGE | 5BB1 4.5 X 4.5 | 652 | IVE |
| 1 | EA | CLASSROOM LOCK | ND70TD RHO | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | WALL STOP | WS407CCV | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |

HARDWARE SET # 12

DOORS #
15/114

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 1 | EA | FIRE EXIT HARDWARE | 99-L-F-996-06-SNB | 628 | VON |
| 1 | EA | CYLINDER | 20-059/20-079 AS REQUIRED | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 HDPA FC TBSRT | 689 | LCN |

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | WALL STOP | WS407CCV | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |
| 1 | EA | HEAD SEAL | 700S-LENGTH REQUIRED | AL | NGP |
| 2 | SET | JAMB SEAL | 162S-LENGTH REQUIRED | 628 | NGP |
| 1 | EA | DOOR SWEEP | 200SA-DOOR WIDTH | 628 | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH | | NGP |

INSTALLATION OF HEAD SEAL MUST BE DONE BEFORE THE INSTALLATION OF THE SURFACE MOUNTED DOOR CLOSER.
180 DEGREE SWING IS REQUIRED.

HARDWARE SET # 13

DOORS #
16/120

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HW HINGE | 5BB1HW 4.5 X 4.5 NRP | 652 | IVE |
| 1 | EA | CLASSROOM LOCK | ND70TD RHO | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 SCUSH FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |
| 1 | EA | DOOR SWEEP | 200SA-DOOR WIDTH | 628 | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH | | NGP |

INSTALL DOOR SWEEP ON THE PULL SIDE OF THE DOOR OPENING.

HARDWARE SET # 14

DOORS #
17/119

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 3 | EA | HW HINGE | 5BB1HW 4.5 X 4.5 NRP | 652 | IVE |
| 1 | EA | ENTRANCE LOCK | ND53TD RHO | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | SURFACE CLOSER | 1461 HDPA FC TBSRT | 689 | LCN |
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B4E | 630 | IVE |
| 1 | EA | DOOR STOP | FS17 OR WS407CCV AS REQUIRED | 626 | IVE |
| 1 | SET | SEAL | 2525B-HEAD & JAMBS | BRN | NGP |
| 1 | EA | HEAD SEAL | 700S-LENGTH REQUIRED | AL | NGP |
| 2 | SET | JAMB SEAL | 162S-LENGTH REQUIRED | 628 | NGP |
| 1 | EA | DOOR SWEEP | 200SA-DOOR WIDTH | 628 | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH | | NGP |

INSTALL DOOR SWEEP ON THE PULL SIDE OF THE DOOR OPENING.
INSTALLATION OF HEAD SEAL MUST BE DONE BEFORE THE INSTALLATION OF THE SURFACE MOUNTED DOOR CLOSER.
180 DEGREE SWING IS REQUIRED.

HARDWARE SET # 15

DOORS #
14/113

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | SURFACE TRACK | AS REQUIRED | | HEN |
| 4 | EA | HANGER | AS REQUIRED | | HEN |
| 2 | EA | FLUSH PULL | 1111A | 630 | TRI |
| 4 | EA | STOPS | AS REQUIRED | | HEN |
| 4 | EA | CARRIERS | AS REQUIRED | | HEN |

PROVIDE HENDERSON BARN DOOR TRACK SYSTEM RATED FOR DOOR WEIGHT.
INSTALL FLUSH PULLS ON LIVING ROOM SIDE OF DOOR.

HARDWARE SET # 16

DOORS #
18/125

EACH TO HAVE:

| | | | | | |
|---|---|---|---|---|---|
| 1 | EA | CONTINUOUS HINGE | 112HD-DOOR HEIGHT | 628 | IVE |
| 1 | EA | STOREROOM LOCK | ND80TD RHO | 626 | SCH |
| 1 | EA | FSIC CORE | 23-030-ICX VKC | 622 | SCH |
| 1 | EA | LOCK GUARD | LG12 | 630 | IVE |
| 1 | EA | OH STOP & HOLDER | 450F | 630 | GLY |
| 1 | EA | DRIP CAP | 16A-FRAME HEADER PLUS 4" | 628 | NGP |
| 1 | EA | HEAD SEAL | 700S-LENGTH REQUIRED | AL | NGP |
| 2 | SET | JAMB SEAL | 162S-LENGTH REQUIRED | 628 | NGP |
| 1 | EA | DOOR BOTTOM | 1015AV-DOOR WIDTH | AL | NGP |
| 1 | EA | THRESHOLD | 896S SIA-FRAME WIDTH | | NGP |

INSTALLATION OF HEAD SEAL MUST BE DONE BEFORE THE INSTALLATION OF THE SURFACE MOUNTED OVERHEAD STOP & HOLDER.

**END OF SECTION**

## SECTION 08730

## DOOR AND MISCELLANEOUS ACCESSORIES

### PART 1 GENERAL

### 1.01 DESCRIPTION

A. Work Included: Provide all weather-stripping, seal and thresholds required for a complete and operable facility and as required to meet current handicapped and safety regulations.

B. Related Work Described Elsewhere:

1. Installation on hollow metal doors Section 08100
2. Installation on wood doors Section 08210

### 1.02 QUALITY ASSURANCE

A. Installation: Use only personnel who are skilled in the work required.

B. Exit Openings: Regardless of typically types specified or detailed, provide only thresholds, stripping and seal units which do not interfere with or proper operation of doors at fire-rated openings and at emergency exit openings.

### 1.03 SUBMITTALS

A. Door Accessory Sets:

1. The submittals, and shall be in the form of “Door Accessory Sets” assigned to each of the various doors that are scheduled on the Door Schedule.
2. Make submittals and resubmits if necessary, in accordance with provisions of Section 01340 of these Specifications.

B. Manufacture’s Recommendations: Prior to Installation, deliver to installing personnel from manufacturer regarding installation methods.

### 1.04 PRODUCT HANDLING

A. Packaging:

1. Furnish door accessories with each unit clearly marked or numbered in accordance with door Schedule.
2. Pack each item complete with all necessary pieces and fasteners.

### PART 2 PRODUCTS

### 2.01 MANUFACTURES

A. Model numbers include for weather-stripping and sound seals are items manufactured by Zero Weather Stripping Co., Inc., unless otherwise noted, and are listed as a standard quality.

B. Equivalent items of the following manufacturers are acceptable:

1. Penko Mfg. Co.
2. Reese Enterprise, Inc.
3. National Guard Products, Inc.
4. A.J. Nay, Inc.

### 2.02 ACCESSORIES

A. Exterior Hollow Metal Door Thresholds:

1. Head and Jambs: Zero 1-19W, 34 B-S gauge bronze.
2. Still: Zero #37-J, 31 B—gauge bronze.

B. Sound Seals:

1. Threshold: Zero-663.
2. Sill: Zero #315.
3. Head and Jamb: Zero #3000.

## 2.03 OTHER MATERIALS

A. Materials, not specifically describe but required for a complete and proper installation of finish hardware, shall be new, first quality of their respective kinds, and subjected to approval of Architect.

## PART 3EXECUTION

## 3.01 INSTALLATION

A. Set units plumb and level, accurately centered at optimum location for maintaining a permanent seal.

B. Adjust doors, frames and hardware, if necessary, to achieve proper operations of seals and stripping.

C. Install thresholds with machines screw anchors and lead-shield at locations pre-drilled and evenly spaced in thresholds units.

D. At exterior doors, set thresholds in a bed of sealant. Do not plug drainage holes or weeps.

E. Install interior floor edge strip at finish floor material changes, where indicated on the drawings, and at doorways as required for finish surfaces.

END OF SECTION

# Door & Hardware Set Index

| Door # | Hardware Set # |
|---|---|
| 18/125 | 16 |
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| 15/114 | 12 |
| 16/120 | 13 |
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| 8/118 | 03 |
| 9/101 | 09 |
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| 9/105 | 09 |

**SECTION 09250**

**GYSUM WALLBOARD SYSTEMS**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Wood frame, metal wall and ceiling framing for gypsum board construction

B. Exterior Sheathing

C. Gypsum Board

D. Moisture Resistant Gypsum Board

E. Glass-Mat Gypsum Board

F. Abuse Gypsum Panels

G. Impact Resistant Gypsum Panels

H. Cement Tile Backer Board

I. Moisture Resistant Tile Backer Board

J. Taped, filled and sanded joint treatment

### 1.2 RELATED WORK

A. Section 06100 – Rough Carpentry

B. Section 07160 – Dampproofing Above Grade

C. Section 07210 – Building Insulation

D. Section 07270 – Firestopping and Fire Safing

E. Section 07900 – Building Sealants

F. Section 09310 – Ceramic Tile

G. Section 09900 – Painting and Staining

### 1.3 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
   2. Manufacturer's installation instructions.

B. Certification: Manufacturer's affidavit that materials used contains no asbestos.

## 1.4 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requirements

## 1.5 REFERENCES

A. ASTM International (ASTM)
1. C1396/C1396M, Standard Specification for Gypsum Wallboard
2. C645-08, Standard Specification for Nonstructural Steel Framing Members
3. C754-07, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
4. C840, Standard Specification for Application and Finishing of Gypsum Board
5. C954, Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84mm) to 0.112 in. (2.84 mm) in Thickness
6. C1002, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
7. C1047, Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base
8. C1177, Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
9. C1280, Standard Specification for Application of Gypsum Sheathing
10. D3273, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

B. Gypsum Association (GA)
1. 216, "Recommended Specification for the Application and Finishing of Gypsum Board"

C. Federal Specifications (FS)
1. SS-L-30

## 1.6 WARRANTY

A. Warrant the work specified for one (1) year against becoming unserviceable or causing an objectionable appearance resulting from either defective or nonconforming materials or workmanship.

B. In addition, provide warranty from the manufacturer for the following products:
1. Exterior sheathing weathering warranty covering in-place exposure damage to exterior sheathing for twelve (12) months.
2. Exterior sheathing warranty against manufacturing defects for five (5) years.
3. Abuse Resistant Panel weathering warranty covering in-place exposure damage to sheathing for six (6) months.
4. Abuse Resistant Panel warranty against manufacturing defects for five (5) years.
5. Glass-mat sheathing weathering warranty covering in-place exposure damage to sheathing for thee (3) months.
6. Glass-mat sheathing warranty against manufacturing defects for three (3) years.
7. Tile backer board warranty against manufacturing defects for 20 years.

## PART 2 – PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers listed whose products meet or exceed the specifications are approved for use on the Project. Where products are named in the specifications, they are considered basis of specification. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.

1. Gypsum Wallboard and related products and materials:
    a. CertainTeed
    b. G-P Gypsum Corporation (Georgia Pacific)
    c. James Hardie Building Products, Inc.
    d. National Gypsum Company (Gold Bond)
    e. Temple-Inland
    f. United States Gypsum Company (USG)
    g. Dietrich Metal Framing

### 2.2 MATERIALS

A. Drywall Suspension System (If shown or required): Pre-engineered drywall suspension system specially created to simplify the design and construction of flat drywall ceilings. Approved Product/Manufacturer: USG Drywall Suspension System manufactured by USG Interiors, Inc., or Architect approved equal.

C. Wall and Ceiling Materials:

1. Exterior Sheathing: ASTM C1177; 1/2 inch thick water resistant treated gypsum core, glass mats both front and back faced or embedded in core, weather resistant surface, zero flame spread, zero smoke developed. Approved Product/Manufacturer: “Dens-Glass Gold Exterior Guard” manufactured by Georgia-Pacific; “GlasRoc” manufactured by CertainTeed; “Securock” manufactured by USG. Use as exterior sheathing in metal stud framed construction behind face brick in cavity wall construction, and behind plaster.
2. Gypsum Wallboard:
    a. Wallboard: 5/8 inch thick, tapered-edged, conforming to ASTM C1396, Type X. Sizes shall be 4 feet-0 inches wide by longest practical length to minimize joints.
    b. Moisture Resistant: 5/8 inch thick, moisture resistant (MR), green faced, tapered-edged, conforming to ASTM C1396. Sizes shall be 4 feet-0 inches wide by longest practical length to minimize joints. Provide fire rated core where required to maintain fire rating of adjacent assembly.
3. Glass-Mat Gypsum Board: 5/8 inch thick, longest practical length, with long edges tapered. ASTM C1177, coated inorganic glass mat-faced, water-resistant treated gypsum core wallboard. Conforming to the physical properties of ASTM C1396 and ASTM C1177. Rating of ten (10) “No Mold Growth” as tested for four (4) weeks according to ASTM D3273. Approved Product/Manufacturer: “DensArmor Interior Guard Plus” manufactured by G-P Gypsum Corp., or Architect approved equal.
4. Abuse Resistant Gypsum Panel (Moderate Duty): 5/8 inch thick, Type X, with tapered edge, “DensArmor Plus Abuse Guard” manufactured by G-P Gypsum Corp., “Fiberock AR” manufactured by USG Corporation, “Hi-Abuse XP Wallboard” manufactured by National Gypsum Company, or approved equal. Use where abuse resistant gypsum wallboard is shown or scheduled.

5. Impact Resistant Gypsum Panel (Heavy Duty): 5/8 inch thick, Type X, with tapered edge, “DensArmor Plus Impact Resistant Panel” manufactured by G-P Gypsum Corp., “Fiberrock VHI” manufactured by USG Corporation, “Hi-Impact XP Wallboard” manufactured by National Gypsum Company, or approved equal. Use in stud framed stair enclosures.
6. Gypsum Shaft Liner: One (1) thick gypsum core for added fire resistance and multi-layered green paper facings that are treated to resist moisture penetration.
7. Tile Backer Board (Wet areas): 1/2 inch thick, “G-P Dens-Shield Tile Guard”, Bonsal “Util-A-Crete”, “USG Durock”, “Wonderboard”, “National Gypsum Permabase”, or Architect approved equal. Use as sheathing at shower areas and restrooms, or as scheduled on walls to receive ceramic tile in other wet areas. Use greatest width by longest practical length to minimize joints. Use joint reinforcement and fasteners in accordance with manufacturer’s printed instructions. For fiber and cement backer boards, provide waterproof membrane behind backer board per TCA W244. Coated glass-mat water-resistant gypsum board does not require waterproofing membrane per TCA W245.
8. Tile Backer Moisture Resistant Board (Dry areas): 1/2 inch thick, “Fiberock Brand ‘Aqua-Tough’ Gypsum Interior Panels” as manufactured by USG Corporation; “DensArmor Interior Guard Plus” manufactured by G_P Gypsum Corp, or Architect approved equal.
9. Channels: 16 gauge cold formed steel channels with hot dip galvanized finish. Size as indicated on drawings. Use for suspended ceilings and elsewhere as indicated.
10. Furring Channels: Standard 2-3/4 inches wide, 7/8 inch deep galvanized sheet metal furring channel.
11. Corner Beads: No. 28 gauge galvanized steel, 1-1/4 inch legs. Use at all exterior corners.
12. Joint Compound: Standard types manufactured by gypsum wallboard manufacturer for intended use. Fire rated type must be used on fireproof systems. Perlite and other additives not permitted.
13. Laminating Adhesives: Standard type manufactured or recommended by manufacturer of product to be laminated.
14. Acoustic Sealant: Single component, non-skinning, non-hardening synthetic rubber for use in the acoustical sealing of gypsum board partitions. STC rating as required by drawings in accordance with manufacturers instructions to achieve rating. Approved Products and Manufacturers: Tremco Acoustical Sealant manufactured by Tremco Sealant/Weatherproofing Division, Beachwood, OH; (800) 321-7906, or Architect approved equal.
15. Ceiling Hanger and Tie Wire: 0-gauge galvanized hanger wire and 16 gauge tie wire.
16. Screws: One (1) inch and 1-5/8 inch long self drilling, self tapping cadminum plated bugle head type. Comply with applicable reference standards.
17. Resilient Clips: Standard type for resilient installation in accordance with wallboard manufacturer’s recommendations.
18. Control Joints: Metal (USG #093/Dietrich 093 Control Joint) type with 1/4 inch open joint, perforated flanges for floating in place.
19. Wall Fixture Reinforcement: 6 inches, 14 gauge cold formed steel galvanized channels.
20. Glass-fiber Mesh Tape: minimum 2 inch wide self-adhering glass-fiber type, 10X10 threads per inch.
21. Silicone Joint Sealant: ASTM C920, Type S, grade NS, compatible with exterior sheathing tape and sheathing, instructed by tape and sheathing manufacturers for use with glass-fiber mesh sheathing tape and for covering exposed fasteners.

22. Waterproof membrane under cementitious/fiber tile backer board shall be minimum 15-pound building felt or 4-mil polyethylene film in accordance with ANSI A2.1.8.
23. Where indicated on drawings, Fry Reglet “F” Reveal, as manufactured by Fry Reglet Corporation Model Number FDM-625-75, shall be installed. Aluminum shall be extruded alloy 6063T5, with chemical conversion coating, clear anodized or other specified finish. Refer to finish section. All corners shall be mitered for a seamless appearance at all changes in direction.

## PART 3 – EXECUTION

### 3.1 EXTERIOR SHEATHING INSTALLATION

A. Furnish exterior sheathing where indicated on drawings and install sheathing in accordance with manufacturer’s instructions and applicable instructions in GA-253 and ASTM C1280, without openings, gaps, cracks, or holes.

B. Attach sheathing to metal framing with gold side out and with screws spaced eight (8) inches on center at perimeter where there are framing supports and eight (8) inches on center along intermediate framing in field.

B. Use maximum lengths possible to minimize number of joints.

C. Drive fasteners to bear tight against and flush with surface of sheathing. Do not countersink.

D. Locate fasteners minimum 3/8 inch from edges and ends of sheathing panels.

E. Apply continuous dampproofing as specified in Section 07160, Dampproofing Above Grade. Prep exterior sheathing per manufacturer’s instructions.

### 3.2 INTERIOR METAL FRAMING INSTALLATION

A. Steel Framing Installation Standard: Comply with ASTM C754

B. Floor Track: Attach to floor at 24 inches maximum centers with shoot-in pins or concrete nails.

C. Ceiling Track: Fasten at 24 inch intervals, staggered. Where shown or required to extend above ceiling, brace to the structure at intervals not exceeding 4 feet-0 inches.

D. Deflection Track (DT): Deflection track shall allow 1/2 inch movement. Do not fasten studs directly to Deflection Track. At fire rated walls, Contractor’s shall use the specified deflection track with firestop systems.

E. Drywall Suspension System: Use at gypsum drywall suspended ceilings, where shown or required.

F. Metal Studs:
1. Single lengths positioned vertically straight and plumb in the runners, spaced 16 inches on center, unless shown otherwise on drawings.

2. Anchor all studs located adjacent to door and window frames, partitions intersections and corners to runner flanges by positive screw engagement through each stud flange and runner flange.
3. Position all studs vertically with the open side facing in the same direction, engaging the floor and ceiling runners.
4. Use positive screw attachments with 3/8 inch or 1/2 inch Type “S” or “S-12” pan head screws through each stud flange and runner flange.

F. Wall Fixture Reinforcement: Provide solid bridging spanning between wall studs at all wall mounted fixtures, finish hardware, toilet partitions, accessories and equipment.

## 3.3 WALLBOARD INSTALLATION

A. Apply all ceiling boards first as described below. Cut boards so that they slip easily into place. Butt all joints loosely. Never force panels into position. Place tapered or wrapped edges next to one another.

B. Select the maximum practical length to minimize end joints. All end joints shall be neatly fitted and staggered. Joints on opposite sides of partition shall be so arranged as to occur on different studs.

C. Never place a butt end or a cut edge next to a tapered or rounded edge. Whenever possible, apply boards perpendicular to framing and in lengths that will span ceilings and walls without creating end (butt) joints. If butt joints do occur, stagger and locate them as fat from the center of walls and ceilings as possible.

D. Support all ends and edges of gypsum board on framing, except long edges at right angles to framing and where end joints are to be floated between frame members and back-blocked.

E. When fastening, apply hand pressure on panel next to fastener being driven to insure panel is in tight contact with framing member.

F. Install metal corner bead at external corners. Where length of the corner does not exceed standard stock lengths, use a single length.

G. Install gypsum board 1/2 inch above surface of slab to prevent wicking of moisture.

H. Install metal trim where indicated.

I. To insure level surfaces at joints, arrange board application so that the leading edge of each board is attached to the open or unsupported edge of a steel stud flange. To do this, all studs must be placed so that their flanges point in the same direction. Board application is then planned to advance in the direction opposite to flange direction.

J. The leading edge of gypsum board shall not be attached to the web edge of a flange.

K. Fasten wallboard at 12 inches on center except at the edges/joints which shall be at 8 inches on center

L. Edge-Grip Clips: Position clips on the back of the panels and drive prongs into panel edges. Space clips 16 inches on center Screw-attach slip to framing, furring or wall surface.

M. Finishing:
   1. Apply at least two (2) coats of joint compound over beads, screw heads and trim, and each coat shall be feathered out onto panel faces.
   2. Float out and sand joints to make joints invisible when painted with non-texture paint.

N. Caulk around pipes, ducts, structure or similar items which penetrate drywall systems.

O. Provide acoustical sealant at walls in accordance with manufacturer's instructions.

P. Control joints shall be located 30 feet-0 inches on center maximum and along building expansion joints, unless noted otherwise on drawings. Locations shall be reviewed with Architect prior to final placements.

## 3.4 TILE BACKER BOARD INSTALLATION – WET AREAS

A. Install tile backer on walls vertically or horizontally.

B. Coated Glass Mat Backer Boards: Install tile backer directly on metal stud framing system in showers and other wet areas in accordance with manufacturer's recommendations and TCA, Methods W245 at walls and B420 for shower installations.

C. Cementitious/Fiber Backer Boards: Install tile backer on approved waterproof membrane in showers and other wet areas in accordance with manufacturer's recommendations and TCA, Methods W245 at walls and B420 for shower installations.

D. Finishing:
   1. Substrate for tile: Apply clear silicone sealant to corners and board joints. Apply glass mesh joint tape over joints. Embed tape in setting material specified for tile finishes. Seal penetrations with setting material or silicone sealant. Allow joints and penetrations to dry prior to installing tile systems.

## 3.5 TILE BACKER BOARD INSTALLATION – DRY AREAS

A. Install tile backer on walls vertically or horizontally.

B. Install tile backer on walls in accordance with manufacturer's recommendations and TCA, Method W245.

C. Finishing:
   1. Substrate for tile: Apply glass mesh joint tape over joints. Embed tape in setting material specified for tile finishes. Allow joints to dry prior to installing tile systems.

## 3.6 GLASS MAT BOARD INSTALLATION

A. Install glass mat boards on walls vertically or horizontally.

B. Finishing: (As applicable)
   1. Substrate for paint and wall coverings, dry areas (untiled): Apply glass mesh joint tape over joints. Embed tape in setting-type joint compound specified. Apply skim coat of setting-type joint compound over surface of tile backer for smooth finish.

2. Substrate for high-humidity finish systems (untiled): Apply six (6) inch wide reinforcing fabric over joints. Embed fabric in ground coat. Skim-coat tile backer surface with ground coat for smooth finish. Apply in accordance with finish coat manufacturer's instructions.
3. Substrate for wet area, water reducible epoxy coating finish (untiled): Apply six (6) inch wide reinforcing fabric over joints. Embed fabric in ground coat. Skim-coat with ground coat and compatible primer. Apply epoxy coatings specified as finishing step with epoxy coating system specified.

**3.7 ABUSE GYPSUM PANEL**

A. Install in accordance with manufacturer's instructions.

B. Install at all stairs where gypsum wallboard is shown or scheduled.

**3.8 CEILING FRAMING INSTALLATION**

A. Main Runners: 9-gauge hanger wires shall be spaced not over 4 feet-0 inches in the direction of 1-1/2 inch main runner channels and not over 4 feet-0 inches in the direction of right angles to the main runner, and within 6 inches of the ends of main runners and of boundary walls, girders or similar interruptions of ceiling continuity. Do not hang wire supports from metal deck unless directed to do so by Architect or Structural Engineer. Main runners shall be spaced not over 4 feet-0 inches on center.

B. Cross tees shall be spaced in accordance with manufacturer's recommendations or in conformance with UL Fire Resistance Directory.

C. Furring Channels: Space 16 inches on center, and saddle-tie with two strands of 16-gauge tie wire to main runners or main support members. Do not let into or come in contact with abutting masonry walls. End splices shall be provided by nesting channels or studs no less than 8 inches and securely wire-tie.

D. Drywall Suspension System: Install where indicated in accordance with manufacturer's instructions.

E. Provide control joints in ceiling at maximum 30 feet on center and, if possible, to coincide with expansion joints in the roof above.

**3.9 CEILING BOARD INSTALLATION**

A. Apply gypsum board of maximum practical length with the long dimension at right angles to the furring channel and fastened with one (1) inch drywall screws spaced 12 inches on center in the field of the board and along abutting ends.

B. Align abutting end or edge joints over the web surface of the furring channel. Tie neatly and accurately with end joints staggered.

C. Install gypsum board ceiling panels in drywall suspension system.

**3.10 WORKMANSHIP**

A. Visual: Correct any nicks, bumps, out-of-level or out-of-plumb areas detectable to the naked eye.

B. Walls: 3/8 inch maximum deviation from vertical.

C. Bumps in Boards: Maximum 1/8 inch in 24 inches.

D. Corners: Maximum out-of-square 1/8 inch in 16 inches.

E. Float solid between corner beads less than 36 inches apart. Surfaces that appear concave are not acceptable.

F. Provide “J” mold and continuous 1/4 inch reveal wherever gypsum board directly butts other material or when end is exposed.

G. Float Control Joints flush with wall surface so that ceiling wall mold specified separately will align with wall surface flat and straight.

## 3.11 COMMENCEMENT RESTRICTIONS

A. Interior gypsum wallboard and ceiling board installation may not commence until all exterior damp-proofing and roofing are completed and roof top equipment is fully installed and flashed and exterior wall openings are protected.

**END OF SECTION**

**SECTION 09310**

**CERAMIC TILE**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Thin set glazed wall and floor tile, base and necessary trim shapes, mortar and grout, expansion joints, sealants, transition stripes, and accessories shown or required to complete work.

### 1.2 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
   2. Manufacturer's installation instructions.

B. Samples:
   1. Selection: Submit full range of colors, patterns, textures and finishes available for selection of tile and threshold.
   2. Approval:
      a. Submit Samples of selected tile mounted on 12 inch x 12 inch board indicating joint size and grout.

C. Certificates:
   1. Provide Master Grade Certificate as specified in ANSI A137.1.
   2. Manufacturer's affidavits that materials used contain no asbestos.

### 1.3 REFERENCES

A. American National Standards Institute (ANSI)
   1. Installation Specifications:
      a. A108.5, Ceramic Tile Installed with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
      b. A108.6, Ceramic Tile installed with Chemical-Resistant, Water-Cleanable Tile-Setting and Grouting Epoxy
      c. A108.10, Installation of Grout in Tilework
   2. Material Specifications:
      a. A118.4, Latex-Portland Cement Mortar
      b. A118.6, Ceramic Tile Grouts
      c. A136.1, Organic Adhesives for Installation of Ceramic Tile
      d. A137.1, Ceramic Tile

B. American Society for Testing and Materials (ASTM)
   1. C144, Standard Specification for Aggregate for Masonry Mortar
   2. C150, Standard Specification for Portland Cement
   3. C206, Standard Specification for Finishing Hydrated Lime

C. Tile Council of America, Inc. (TCA)
   1. 2008 Handbook for Ceramic Tile Installation

## 1.4 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requirements.

## PART 2 – PRODUCTS

## 2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers listed whose product meets or exceed the specifications may be used on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions in order to be considered.

1. Ceramic Tile:
   a. Dal-Tile, San Antonio, TX; (210) 342-9351
   b. American Olean Tile Co., Dallas, TX; (214) 398-1411
   c. Interceramic, USA, Garland, TX; (800) 496-8453
   d. U.S. Tile Co., Corona, CA; (800) 252-9548
   e. United States Ceramic Tile Co., East Sparta, OH; (800) 321-0684
2. Tile Setting and Grout Materials: Those manufactured by the approved tile manufacturers named above or any of the following as approved by the tile manufacturer for use with his tile and to suit application.
   a. ARDEX L.P., Aliquippa, PA; (724) 203-5000
   b. Custom Building Products, Seal Beach, CA; (562) 598-8808
   c. Laticrete International, Inc., Bethany, CT; (800) 243-4788
   d. Mapei Corporation, Deerfield Beach, FL; (888) 876-2734

## 2.2 INTERIOR TILES

A. Ceramic Tile:

1. Unglazed Ceramic Floor Tile:
   a. Type/Size: Non-glazed 1 inch by 1 inch porcelain mosaic tile, with cushion edge.
   b. Base: Cove type to match wall tile type and size.
   c. Colors: As selected by Architect from manufacturer's available colors, but for pricing purposes, Offerors may use25 percent from the fourth most expensive price group, 25 percent from the third most expensive price group, 25 percent from the second most expensive price group, 25 percent from the least expensive price group.
   d. Pattern: as selected by Architect from available random blends.

2. Glazed Ceramic Wall Tile:
   a. Type/Size: Bright or matte glazed 4-1/4 inch by 4-1/4 inch ceramic tile, with cushion edge.
   b. Shapes: Provide necessary trim shapes to terminate tile with a bull-nose edge and rounded external corners. Provide square internal vertical corners and ceiling – wall joints. Provide built-up cove base at showers as shown or required.
   c. Colors: As selected by Architect from manufacturer's available colors, but for pricing purposes, Offerors may use 40 percent from Price Group I, 20 percent from Price Group II, 20 percent from Price Group III, 20 percent from Price Group IV.
   d. Pattern(s): As shown on drawings, but subject to change.

3. Unglazed Ceramic Wall Tile:
   a. Type/Size: Non-glazed 2 inch by 1 inch porcelain mosaic tile, with cushion edge, brick joint.

b. Base: Cove type to match wall tile type and size and color.
c. Colors: As selected by Architect from all blend colors for unglazed ceramic tiles; Keystone by Daltile to be used as basis of design.
d. Pattern: as selected by Architect from available random blends.

B. Mortar Adhesive and Grout:
1. Portland Cement: ASTM C150, Type 1
2. Lime: ASTM C206, Type "S"
3. Sand: ASTM C144
4. Water: Potable
5. Bond Coat: Dry-set mortar conforming to ANSI A118.4
6. Organic adhesive: Comply with ANSI A136.1. Furnish current Certification of Conformance.
7. Grout (Typical except as wet areas and restroom floors):
a. As instructed by tile manufacturer
b. Color selected by Architect

C. Epoxy Grout (At wet areas and restroom floors): Use one (1) of the following 100 percent solids epoxy grout in accordance with ANSI A118.3. No substitutions. Color shall be as selected by Architect from manufacturer's full line of available colors:
1. ARDEX L.P., WA Epoxy Grout, Aliquippa, PA (724) 203-5000
2. Polyblend® Tile Grout with 100 percent Solids Epoxy manufactured by Custom Building Products, Seal Beach, CA; (562) 598-8808.
3. LATICRETE® SpectraLOCK PRO Stainless Grout manufactured by Laticrete International, Inc., Bethany, CT; (800) 243-4788.
4. Mapei Corporation, Deerfield Beach, FL; (888) 876-2734

D. Crack Isolation Membrane: Provide shower pan waterproofing in accordance with Section 07115.

## 2.3 THRESHOLDS

A. White Italian Marble thresholds shall be 1/2 inch thick by 2 inches wide by required length, with double 1/4 inch bevel.

## 2.4 EXPANSION JOINTS

A. Expansion Joint Filler: Flexible and compressible, closed-cell type, rounded at surface to contact sealant as instructed by sealant manufacturer to suit intended use.

B. Silicone compound sealant over filler. ASTM C920, Uses M and A, single component, mildew resistant. Sanded to match grout. Provide at all wall corners, ceilings, control joints and changes in materials, where floor tile abuts perimeter walls, curbs, columns, and pipes; and 24 feet to 36 feet elsewhere.

## 2.5 MISCELLANEOUS MATERIALS

A. Cement-based Floor Leveling Material: ARDEX K-15 Self-Leveling Underlayment Concrete manufactured by Ardex Engineered Cements, Aliquippa, PA; (724) 203-5000; or CX Self-Leveling Underlayment manufactured by BASF Chemrex Inc.; or equal. Gypsum-based products are prohibited.

B. Transition Strips: Of type and size recommended to suit application. Color shall be as selected by Architect from manufacturer's standard colors.

## 2.6 EXTRA TILE

A. Deliver one (1) unopened box of each type and color of wall and floor tile to the Owner in accordance with Section 01710, Closeout Procedures.

## PART 3 – EXECUTION

## 3.1 PREPARATION

A. Examination: Examine substrates for expansion joints and defects which may affect the work. Do not start work until defects have been corrected. Ensure that surfaces are:
   1. Dry, clean, free of oily or waxy films, free of curing compounds.
   2. Firm and level within specified tolerances.
   3. Minimum of 40 degrees and rising.

B. Tile contractor shall examine preparatory work by others and notify Architect of any imperfections which would affect a satisfactory completion of this tile work. Verify that slab is free of cracks, waxy or oily films, and is well cured. Absence of such notification shall constitute acceptance of responsibility by tile contractor.

## 3.2 INSTALLATION

A. Align joints (no staggering)

B. Set interior floor tile and grout in accordance with TCA F113 and shower floor in accordance with TCA B415. Set marble thresholds in accordance with TCA TR611 and manufacturer's instructions.

C. Set interior wall tile and grout in accordance with TCA W244 on tile backer cement board at wet areas, showers, and restrooms, TCA W243 on tile backer gypsum board at dry areas not exposed to water or moisture, and TCA W202 on concrete masonry unit (CMU) substrates.

D. Allow minimum of 24 hours after tile is set before grouting.

E. Lay out tile so that the minimum size tile used is 1/2 size.

F. Form internal angles square.

G. Install expansion joints in accordance with TCA publications EJ171.

H. Slope tile within three (3) foot diameter of diameter of a floor drain, unless otherwise noted.

I. Damp cure grout in accordance with manufacturer's recommendations. Clean all tile surfaces upon completion. Protect finish tile work from damage.

## 3.3 CLEANING AND PROTECTION

A. Clean work at completion of installation, remove excess grout from tile surfaces. Clean tile and grout surfaces prior to installation of plumbing fixtures.

B. Wipe all tile with a clean damp cloth, and buff lightly, leaving tile surfaces clean and ready to use.

C. Remove grout from adjacent finish surfaces.

D. Protect finished installation until final acceptance.

**END OF SECTION**

**SECTION 09510**

**ACOUSTICAL LAY-IN CEILING**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Suspension system (Grid) and accessories required to complete work.

B. Acoustical lay-in panels: standard, fire rated, and sag resistant.

C. Vinyl faced, sag resistant, scrubbable lay-in panels.

D. Hold down clips, spacing clips, moldings, and accessories required to complete work.

### 1.2 RELATED WORK

A. Section 09250 – Gypsum Wallboard Systems: Wallboard used as fire protection over light fixtures.

B. Division 15 – Mechanical: Air diffusers and mechanical items penetration ceiling.

C. Division 16 – Electrical: Lighting and electrical items penetrating ceiling.

### 1.3 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
   2. Manufacturer's installation instructions.

B. Samples:
   1. 6 inch by 12 inch sample of each ceiling panel.
   2. 12 inch long sample of each type grid and actual accessories.

### 1.4 PRE-INSTALLATIN CONFERENCE

A. Refer to Section 0110 – Notification of Architect Requirements.

### 1.5 REFERENCES

A. ASTM International (ASTM)
   1. A641, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
   2. B117, Standard Practice for Operating Salt Spray (Fog) Apparatus
   3. C423, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
   4. C635, Standard Specification for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
   5. C636, Standard Practice for Installation of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings

6. D3273, Standard Test Method for Resistance to growth of Mold on the surface of Interior ceilings in an Environmental Chamber
7. E84, Test Method for Surface Burning Characteristics of Building Materials
8. E413, Classification for Rating Sound Insulation
9. E1264, Standard Classification for Acoustical Ceiling Products.

B. Federal Specification (FS)
1. SS-S-118B, Sound Controlling (Acoustical) Tiles and Panels

C. Underwriters Laboratories (UL)
1. Assembly as specified or noted on drawings.

## 1.6 COORDINATION

A. Coordinate Work of this Section with work under Division 15, Mechanical for location of dampers in diffusers and other mechanical items penetrating ceiling and Division 16, Electrical for location of light fixtures and other electrical items penetrating ceiling.

## 1.7 WARRANTY

A. Standard ceiling Panels: warrant ceiling panels to be free from sagging, warping, shrinking, buckling, or delaminating as a result of manufacturing defects for a period of one (1) year from the date of Substantial Completion.

B. Sag Resistant ceiling Panels: warrant products to be free from sagging, warping, shrinking, buckling, or delaminating as a result of manufacturing defects for a period of ten (10) years from the date of Substantial Completion.

C. Standard Suspension System: Suspension systems shall be warranted to be free from defects in material or factory workmanship and shall not incur 50 percent red rust as defined by ASTM B117 test procedures for a period of ten (10) years from the date of Substantial Completion.

D. Suspension System/Ceiling Panels: Provide manufacturers standard 15 year warranty for suspension systems when used in combination with same manufacturers sag resistant ceiling panels. Ceiling panels to be free from sagging, warping, shrinking, buckling, or delaminating as a result of manufacturing defects. Suspension systems shall not incur 50 percent red rust as defined by ASTM B117 test during the period of the warranty.

# PART 2 – PRODUCTS

## 2.1 ACCEPTABLE MANUFACTURERS

A. Specifications are based on products of named manufacturers. Manufacturers listed whose product meets or exceeds the specifications may be used on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
1. Suspension System (Grid):
   a. Armstrong World Industries, Inc. (Basis of Specification)
   b. Certainteed (BPB Celotex)
   c. Chicago Metallic
   d. USG Interiors, Inc. (Donn)

2. Acoustical Lay-in Panels:
    a. Armstrong World Industries, Inc. (Basis of Specification)
    b. Certainteed (BPB Celotex/Capaul)
    c. Conwed Designscapes
    d. USG Interiors, Inc.

## 2.2 MATERIALS

A. Suspension System (Grid):
1. Type: ASTM C635, intermediate duty; exposed T; components die cut and interlocking.
2. Materials: Commercial quality cold rolled steel with galvanized coating.
3. Exposed Grid Surface Width: 15/16 inch
4. Grid Finish: White
5. Accessories:
    a. Perimeter moldings.
    b. Hold down clips
    c. Aluminum cap for use over steel grid in kitchen areas or where shown on drawings or required. White color.
6. Approved Product/Manufacturer:
    a. Fire Rated: Prelude XL 15/16 inch as manufactured by Armstrong World Industries, Inc. or Architect approved equal by acceptable manufacturers.
    b. Non-Rated: Prelude XL 15/16 inch as manufactured by Armstrong World Industries, Inc. or Architect approved equal by acceptable manufacturers.
7. Hanger Wire:
    a. Galvanized carbon steel in accordance with ASTM A641, soft temper, prestretched, with a yield stress load of at least three (3) times the design load, but not less than 12 gauge in diameter.

B. Lay-in Panels:
1. Type “A”: Standard
    a. Material: Wet-formed mineral fiber.
    b. Size: 24 inches by 24 inches by 5/8 inch thick
    c. Edge Detail: Square lay-in, trim edge
    d. NRC: 0.55 – 0.65 in accordance with ASTM E1264
    e. CAC: 30 – 35 in accordance with ASTM E1264
    f. Surface Finish: Factory applied white latex typical
    g. Flame Spread: Class A
    h. Fire Rating: Where indicated, provide UL Labeled for use in fire resistive assemblies in hourly rating required
    i. Pattern: Perforated medium texture, non-directional
    j. Accessories: Hold down clips as required for U.L. assembly
    k. Specified Product/Manufacturer: “Cortega Square Lay-In Panels” No. 770 or fire-rated No. 824 FireGuard as manufactured by Armstrong World Industries, Inc.; or Architect approved equal by listed manufacturer.
2. Type ”B”: Sag Resistant, Anti-microbial
    a. Material: Wet-formed mineral fiber
    b. Size: 24 inches by 24 inches by 5/8 inch thick
    c. Edge Detail: Square lay-in, trim edge
    d. NRC: 0.55 – 0.65 in accordance with ASTM E1264
    e. CAC: 30 – 35 in accordance with ASTM E1264
    f. Surface Finish: Factory applied latex typical. Architect to select color.
    g. Flame Spread: Class A

h. Fire Rating: Where indicated, provide UL Labeled for use in fire resistive assembles in hourly rating required.
i. Pattern: Perforated medium texture, non-directional
j. Mold/Mildew inhibitor: Manufactures anti-microbial treatment in accordance with ASTM D3273.
k. Accessories: Hold down clips as required for U.L. assembly.
l. Specified Product/Manufacturer: "Fine Fissured Square Lay-In Panels" No. 1728 or fire-rated No. 1831 FireGuard as manufactured by Armstrong World Industries, Inc.; or Architect approved equal by listed manufacturer.

3. Type "C": (At Kitchen areas in grid with aluminum cap): Sag resistant
a. Material: Vinyl-faced, Wet-formed mineral fiber
b. Size: 24 inches by 24 inches by 5/8 inch thick
c. Edge Detail: Square lay-in, trim edge
d. NRC: 0.10 – 0.15 minimum in accordance with ASTM E1264
e. CAC: 40 minimum in Accordance with ASTM E1264
f. Surface Finish: Scrubbable factory applied white vinyl plastic paint
g. Fire Resistance: Class A, UL labeled for use in fire resistive assemblies, where scheduled on drawings. One (1) hour fire rated roof/ceiling assembly.
h. Pattern: Non-perforated for use in commercial food service areas.
i. Mold/Mildew inhibitor: Manufactures anti-microbial treatment in accordance with ASTM D3273.
j. Approved Product/Manufacturer: "Clean Room VL" No. 868 as manufactured by Armstrong World Industries, Inc.; or Architect approved equal by listed manufacturer.

4. Type "E":
a. Material: Fiberglass
b. Edge Detail/Grid: Square Lay-In
c. Pattern: Fine texture
d. Dimensions: 24 inches by 24 inches by 1 inch thick
e. Surface Finish: Factory-applied vinyl latex paint on woven, glass cloth scrim/White
f. ASTM Classification: Type: XII Form: 2 Pattern: 5
g. Acoustics:
1) NRC: 0.95
2) CAC: Not Applicable
3) AC: 190
h. Fire Rating: Class A, UL labeled for use in fire resistive assemblies, as scheduled on drawings.
i. Light Reflectance: 0.83
j. Approved Products/Manufacturers: Painted Nubby Open Plan No. 3102 manufactured by Armstrong World Industries, Inc.; or Architect approved equal by listed manufacturers.

C. Accessories:
1. Shadow Molding: At all locations (whether detailed or not) where an acoustical lay-in ceiling abuts a gypsum board ceiling in the same plane, provide a "W" shaped reveal or "shadow" molding similar to USG No. MS 174.

**2.3 EXTRRA STOCK**

A. At completion of work, deliver and store at site as directed not less than three (3) unopened cartons of each type of acoustical ceiling materials and as directed not less

than two (2) unopened cartons of Type “C” acoustical ceiling material. One (1) unopened box of suspension system material.

## PART 3 – EXECUTION

### 3.1 PREPARATION

A. Insure that walls are flat and wall corners square. Commencing work shall be construed as acceptance of preceding work performed by others as suitable to receive Work of this Section.

B. Insure that wall control joints are flat and will not cause wall mould to misalign at those locations.

C. Coordinate all locations of cut panels with Architect in field prior to commencing work.

D. Do not install any ceiling panel until all above plumbing work, ceiling inspections and corrections have been completed.

### 3.2 SUSPENDED CEILING SYSTEMS

A. General: Install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer’s instructions and CISCA “Ceiling Systems Handbook.”

1. Standard for Installation of Ceiling Suspension Systems: comply w/ ASTM C636.

B. Install ceiling systems by skilled workmen in accordance with manufacturer’s printed instructions, the approved shop drawings and reflected ceiling plans. Exposed surfaces of acoustical units shall be level and flush, with all joints straight and true. Cutting and fitting around all items protruding through acoustical ceiling shall be done neatly. Edge moldings and runners shall have flush hairline joints, with all corners mitered. Pop rivets for joining members are not permitted.

C. Typically, unless indicated on the drawings, install system so that panels are centered in the space in both directions to limit small cut pieces to minimum of three (3) inches on any side, or so that light fixtures are centered above work areas. If conflicts arise, notify architect immediately for determination and proper locations.

D. Install main beam and cross tees in accordance with reflected ceiling plans. Suspend main beams from structure (but not bridging) above by means of 12 gauge galvanized wire, spaced at 4 feet –0 inches on center, both directions, wrapped tightly at least three (3) full turns. Do not hang wire supports from metal deck unless direct to do so by Architect and/or Structural Engineer. Powder actuated devices in metal deck are not permitted. Join cross tees to main beam with a positive interlock. Pop rivets will not be permitted for field splices.

E. Align beams or tees with angle molding at corners unless authorized by Architect.

F. At perimeter areas, secure angle molding to vertical surfaces, ends of tees to rest on bottom flange of molding. Attachment of cross tees to wall angles with pop rivets will not be permitted. Hanger wire at 45 degree approximately ten (10) inches long may be used to tie the grid to the wall above the ceiling to prevent eventual disengagement of the two (2) components.

G. Install lay-in panels with accessories and hold down clips as shown or required.

**END OF SECTION**

**SECTION 09650**

**RESILIENT BASE**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Resilient base adhesive attached in locations shown on drawings.

### 1.2 REFERENCES

A. ASTM International (ASTM)
   1. F1861, Standard Specification for Resilient Wall Base
   2. F1869, Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
   3. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. Or greater, Class 1.
   4. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

### 1.3 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
   2. Manufacturer's installation instructions.

B. Samples:
   1. Actual samples or color charts showing manufacturer's full range of colors for Architect's selection.
   2. 12 inch long piece of base material in each color selected for approval.

C. Certification: Manufacturer's affidavit that materials used in the Project contain no asbestos.

## PART 2 – PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers named first are basis of Specification. Manufacturers listed, whose product meets or exceeds the specifications are approved for use on the Project with Architect's approval. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.



### 2.2 MATERIALS – ALL MATERIALS MUST BE ASBESTOS FREE

A. Rubber Base:
   1. Quality Standard: ASTM F1861
   2. Material: Rubber, vulcanized, Type TS, Group I, Styles A and B. Vinyl base and Type TP are not acceptable
   3. Type: Topset cove; (rolls)
   4. Thickness: Full 0.125 (1/8) inch
   5. Color: As selected by Architect
   6. Height: Four (4) inches, unless indicated otherwise
   7. Approved Products/Manufacturers: Burke Mercer, Flexco, Nora Rubber Products, Roppe Corp., Mannington Commercial, or Architect approved equal

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B. Joining and Edge Finish Moldings:
   1. Usage: For use at flooring terminations with other flooring.
      a. Type: Tapered or bullnose edge, as required to provide juncture at edge of adjacent floor surfaces.
      b. Size: One (1) inch wide by 1/8 inch thick or as applicable to the type of flooring and condition.
      c. Material: Rubber or vinyl as recommended by flooring manufacturer to suit application.
      d. Color(s): As selected by Architect from manufacturer's available colors.
      e. Approved Manufacturers: Burke Mercer, Flexco, Johnsonite, Domco Tarkett, or Architect approved equal.

F. Adhesive:
   1. Tile: Clear set type adhesive; same brand as tile or as instructed and approved by tile manufacturer to suit application.
   2. Base: Rubber-based type; same brand as base or as recommended and approved by base manufacturer to suit application.

G. Other Materials: Provide other materials, not specifically described but required for a complete and proper installation.

**2.3 EXTRA STOCK**

A. Deliver to the Owner for his use:
   1. Four (4) percent or one (1) unopened carton of each color, type, and size base selected, whichever is greater.
   2. One (1) gallon container of each type adhesive used for flooring and base.

**PART 3 – EXECUTION**

**3.1 SURFACE CONDITIONS**

A. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

**3.2 PREPARATION**

A. Prepare concrete floors to receive flooring in accordance with ASTM F710.

B. Verify substrates are smooth, level, at required finish elevation, and without more than 1/8 inch in 10 feet-0 inch variation from level or slopes shown on the drawings.

C. Level substrates by grinding high spots or filling low spots with latex cementitious subfloor filler as required.

D. Broom clean or vacuum the surfaces to be covered, and inspect the substrates.

E. Verify substrates are smooth, level, at required finish elevation, and are ready to receive resilient tile flooring and base.

F. Bring discrepancies to the attention of the Architect and do not proceed until such discrepancies are corrected.

G. Conduct moisture test in accordance with ASTM F1869 – maximum allowable amount of moisture emission from floor is 3.0 pounds per 1,000 square feet in 24 hour period, and shall not exceed maximum allowable moisture content as allowed by flooring manufacturer.

H. Starting Work indicates acceptance of existing conditions.

**3.3 INSTALLATION**

A. General:

1. Install materials only after finishing operations, including painting, have been completed and after permanent heating and cooling system is operating.
2. Verify that moisture content of concrete slabs, building air temperature, and relative humidity are within the limits recommended by the manufacturers of the materials used.

B. Installing Base:
1. Install base where shown on the Drawings in accordance with manufacturer's instructions.
2. Use factory-preformed exterior corners, and factory preformed or job-mitered interior corners.

## 3.4 CLEANING AND PROTECTING

A. Remove excess adhesive and other blemishes from exposed surfaces, using neutral cleaner recommended by the manufacturer of the resilient materials.

**END OF SECTION**

**SECTION 09900**

**PAINTING AND STAINING**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Surface preparation and field application of paints and stains on interior substrates where shown or required.

B. Surface preparation and field application of paints and stains on exterior substrates where shown or required.

C. Surfaces not included, as applicable to the project, include, but are not limited to the following:
   1. Areas above finished ceiling or scheduled “unpainted” on the Finish Schedule of the drawings, except for those items within those spaces scheduled to painted.
   2. Exposed concrete, unless noted otherwise.
   3. Shop coat of paint on metal, except for damaged shop primer touch-up (unless noted otherwise).
   4. Structural steel and related items scheduled to receive sprayed fireproofing or encased in concrete.
   5. Face brick, unless otherwise noted.
   6. Natural stone.
   7. Aluminum and copper items, unless noted otherwise.
   8. Factory finished items other than prime painted to the field paint finished.
   9. Glass and glass masonry.
   10. Sealants of types which should not be painted and to which paint will not adhere.
   11. Plastic laminate items, such as doors, countertops, casework, etc.
   12. Acoustical ceiling and grid work, unless noted otherwise.
   13. Acoustical panels.
   14. Piping of copper, aluminum, and stainless steel.
   15. Stainless steel items.
   16. Ceramic or tile of any kind.
   17. Valves and controls.
   18. Sprinkler heads.
   19. Name plates on equipment.
   20. Fire rating labels, including those on fire rated doors and frames.
   21. Finish hardware, except that which is factory primed and designated as “BHMA 600”, if any, in Finish Hardware Section.
   22. Existing construction, unless noted otherwise.
   23. Materials not noted to be refinished or to receive a finish, except as noted, including, but not limited to the following:
       a. Roofing
       b. Asphalt paving, except for parking and lane striping, fire lane, and “wheel chair” handicapped access parking spaces.
       c. Concrete paving and curbs, except for parking and lane striping, fire lane, and “wheel chair” accessible parking spaces.
       d. Flooring, except those to receive game striping, or as noted.

24. Color coding of Mechanical Room pipes whether insulated or not: (Unless noted or directed otherwise)

## 1.2 REFERENCES

A. American Society for Testing and Materials (ASTM)
   1. D16, Standard Terminology for Paint, Related Coatings, Materials and Applications.

## 1.3 DEFINITIONS

A. Conform to definitions of terms in ASTM D16 in interpreting requirements of this Section.

## 1.4 SUBMITTALS

A. Material lists: Give the supplier's name, product name, number and generic description of each proposed product and its use. Provide product data sheets if so requested.

B. Samples: Submit full range of colors, patterns, textures and finishes available for selection, including the following:
   1. Color Chips: Provide complete duplicate sets of color chips for color selection.
   2. Small Applied Samples: Provide pieces of actual material on which paint will occur with minimum dry mil thickness of specified paint. Provide painted 12 inch x 12 inch actual gypsum wallboard samples with approved textures for Architect's approval. Approved samples will become standard for which all work will be judged.
   3. Sheen Samples: Provide full range of varying sheens when sheens are controllable by intermixing.

C. Installed Samples: Provide large size samples for approval. Approved samples may be left in place as part of the work.

D. One room and/or area, as selected by the Architect, shall be painted with materials specified or accepted and applied directly from container, unthinned. After acceptance by Architect, room and/or area shall be standard of quality of entire project.

E. Certification: Furnish a letter certifying that materials submitted are truly equivalent or better than those called out in the finish schedule.

## 1.5 RESPONSIBILITY OF COORDINATION

A. Coordinate the work specified herein with the following work:
   1. Provide information to preceding trades for proper preparation of substrate.
   2. Inspect substrate before proceeding to verify proper preparation.
   3. Notify Architect of any item to receive paint which may not be covered by a scheduled finish type. Architect will furnish appropriate specification.

## 1.6 QUALITY ASSURANCE

A. Materials:
   1. Delivery and Storage: Products shall be delivered to jobsite in unopened containers bearing manufacturer's labels intact and legible at time of use. Storage shall be in designated areas away from excessive heat and open flames

and in accordance with manufacturer's recommendations.

2. Quality or Grade:
   a. Paints and coatings shall be the manufacturer's highest professional quality material of types specified and shall be applied directly from containers in which material is purchased, except where thinning is recommended by manufacturer and approved by Architect to suit intended use, i.e. painting acoustical tile or panels without destroying their acoustical properties.
   b. Primers and other undercoat paints shall be those produced by same manufacturer as finish coats.
   c. Thinners shall be those recommended by paint manufacturer's printed instructions.
3. Equipment:
   a. Spray Equipment: Shall be the type recommended for the application and shall be maintained clean and in proper working order.
   b. Brushes, Rollers, etc.:
      1) Shall be new of the various sizes and types recommended for each application.
      2) Shall be properly cleaned and stored in accordance with manufacturer's instructions at the end of each days' use.
      3) Shall be replaced as often as necessary to attain the best finish quality in the Work.
4. Application:
   a. Applicator:
      1) Shall be person(s) or entity specializing in application of paints and coatings of types specified with minimum five (5) years experience.
      2) Shall provide Owner and Architect a notarized certification that paint used is as specified.
   b. Application:
      1) Shall not proceed on surfaces which are not suitable to be painted, until such surfaces have been corrected. Notify Architect in writing of which surfaces need to be corrected and their locations. Surfaces shall be corrected by the responsible trades. Surfaces not suitable for painting shall include, but not be limited to:
         a) Damaged surfaces
         b) Oily, greasy, dusty or excessively soiled surfaces
         c) Non-dressed welds which will be exposed to view
         d) Lack of touch-up where specified
         e) Rusted or excessively deteriorated shop-prime painted surfaces
      2) Number of coats of each of several finishes shall be in accordance with detailed specifications, which will produce first quality finish if properly applied. If number of coats specified fails to produce a finish acceptable to Architect, this Contractor shall apply additional coat or coats at his own expense until acceptable finish is achieved.

## 1.7 PRODUCT HANDLING

A. Store only approved materials at the jobsite, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.

B. Temperature in the storage area shall be between 40 degrees F and 110 degrees F. Open and mix all materials in the storage area.

C. Use all means necessary to protect materials before, during, and after application and to protect the installed work and materials of all other trades.

D. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

E. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 85 F (35 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

F. Do not paint in snow, rain, fog or mist, or when relative humidity exceeds 85 percent, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

**1.8 EXTRA STOCK**

A. Upon completion of the work of this section, deliver to the Owner, an extra stock equaling ten (10) percent or a minimum of one (1) gallon, whichever is greater, of each color, type, and gloss of paint used in the work, tightly sealing each container and clearly labeling contents and location where used.

**1.9 WARRANTY**

A. The undertaking of a painting subcontract will indicated that the subcontractor will warrant the work specified herein for two (2) years against becoming unserviceable or causing an objectionable appearance resulting from either defective or nonconforming materials and workmanship.

B. Defects shall include by not be limited to the following:
1. Discoloring noticeable by yellowing, streaking, blooming, changing color or darkening.
2. Mildewing
3. Peeling, cracking, blistering, alligatoring or releasing from the substrate
4. Chalking or dusting excessively
5. Changing sheen in or irregular fashion
6. Softening or becoming tacky
7. Bubbling

C. In the event of damage, immediately make all repairs and replacements necessary for approval of the Architect and at no additional cost to the Owner.

**PART 2 – PRODUCTS**

**2.1 ACCEPTABLE MANUFACTURERS**

A. All paint materials selected for coating systems for each type of surface shall be the

product of a single manufacturer and shall, as a system, have flame spread, fuel contribution, and smoke density test results less than 25.

B. Paint materials listed herein, unless otherwise designated in the “Painting Schedule”, are the products of The Sherwin-Williams Company, 101 Prospect Avenue N.W., Cleveland, OH 44115, (800) 321-8194 and require no further approval as to manufacturer or catalogue number.

C. Similar firstline material of the following manufacturers may be used subject to approval by the Architect for items indicated to be coated:
   1. Paints:
      a. Benjamin Moore & Co.
      b. Devoe Paint Company
      c. Fuller O’Brien Paints
      d. Martin-Senour Paints (Div. Of Sherwin Williams)
      e. Monarch Paint Company
      f. ICI Dulux Paints
      g. Pittsburgh Paints, PPG Industries, Inc., Professional & High Performance Coatings
      h. Porter Paints
      i. Pratt & Lambert Paints (Div. Of Sherwin Williams)
      j. Kelly-Moore Paint Co.
      k. Kwal Paint
      l. Tnemec Company Inc.
   2. Stains:
      a. Olympic Stains, PPG Industries, Inc., Professional & High Performance Coatings
      b. Samuel Cabot, Inc.
      c. The Sherwin-Williams Co.

## 2.2 MATERIALS

A. Paint and Coatings: Ready mixed, except for field catalyzed coatings; having good flow and brushing properties and consistent drying or curing behavior, free of sags and streaks.

B. Accessory Materials: Linseed oil, turpentine, paint thinners and other materials recommended by paint and coatings manufacturer as necessary to achieve finishes specified.

C. Patching and Surface Preparation: Latex fillers as recommended by paint and coatings manufacturer.

## 2.3 COLORS

A. Colors shall be as selected by Architect. Different colors may be selected for each room, and more than one (1) color may be selected in each room.

# PART 3 – EXECUTION

## 3.1 EXAMINATION

A. Verify that site environmental conditions are appropriate and substrates are in proper condition to receive Work of this Section.

B. Verify that shop applied primers are compatible with specified finish coats.

C. Measure moisture content of surfaces using an electronic moisture meter. Do not begin application of coatings unless moisture content of surfaces is below the following maximum values:
   1. Gypsum soffits: 12 percent
   2. Plaster: 12 percent
   3. Masonry surfaces: 12 percent
   4. Wood surfaces: 15 percent
   5. Vertical concrete surfaces: 12 percent
   6. Horizontal concrete surfaces: 8 percent

## 3.2 ITEMS TO RECEIVE PAINT

A. Generally, all new items that are normally painted in any typical building, including but not limited to the following list:
   1. All ferrous metal
   2. All exterior galvanized metal
   3. All exterior wood
   4. All interior wood
   5. All prime coated hardware
   6. All exposed conduit, outlet boxes and electrical cabinets, excluding those located in mechanical rooms.
   7. All exposed pipe, plumbing, and ductwork, including those located in mechanical rooms.
   8. All metal grilles, except aluminum, unless otherwise indicated.
   9. All exposed gypsum board surfaces, including all mechanical rooms
   10. All exposed concrete masonry units (CMU), including all mechanical rooms.
   11. Miscellaneous other items which normally require painting or are scheduled to be painted.
   12. Consult plans, finish schedule, details and specifications for other trades as all items usually field painted or finish will be considered as part of the Contract.
   13. All exposed mechanical equipment and electrical equipment.
   14. Mechanical Room piping whether insulated or not insulated.
   15. All spray applied fireproofing in Mechanical Rooms.
   16. All cementitious wood fiber decks and exposed structure scheduled or noted to receive paint. Protect exposed wood structure from overspray.

B. All work where a coat of material has been applied must be inspected and approved by Architect before application of succeeding specified coat, otherwise no credit for coat applied will be given. Notify Architect when a particular coat has been completed for inspection and approval. Apply coats of material in strict accordance with manufacturer's specifications except where requirements of these specifications are in excess of manufacturer's requirements. Paint all sight exposed pipe and plumbing only after all mechanical work and tests have been completed.

## 3.3 PREPARATION

A. General: Surface must be clean to insure adhesion. Remove oil and grease with paint thinner. Was off dirt with warm soapy water and rinse with clean water. Remove rust by wire brushing or sanding.

B. Wall surfaces must be dry before painting. Verify with moisture meter.

C. Unfinished Surfaces:
   1. Wood: Sand smooth and apply one (1) coat of Primer Undercoat. After primer has dried overnight, putty nail holes and cracks, then spot-prime putty with primer. Again, allow the primer to dry over-night, sand lightly and topcoat.
   2. Maonry and Concrete: Remove efflorescene or cement dust on masonry and concrete by etching with a 10 percent solution or muriatic (Hydrochloric) acid. Flush off surface after etching with clean water, and paint while still damp. On surface where muriatic acid cannot be used to neutralize the efflorescence, remove the efflorescence by sanding, scraping or wire brushing and apply a coat of Masonry Conditioner before painting. If efflorescence is not present, no primer is necessary on concrete and masonry surfaces. Fill voids and pores in concrete and haydite blocks with Latex Block Filler and allow to dry overnight before topcoating.
   3. Iron and Steel: Prime with Metal Primer and allow to dry overnight before topcoating.
   4. Galvanized Metal: Prime with galvanized metal primer and allow to dry overnight before topcoating.

## 3.4 APPLICATION

A. General: Surfaces to be finished must be clean, dry and free of dirt, oils, loose paint or any other contamination that would adversely affect adhesion, protective properties or appearance of the coating.

B. Paint Thickness: Provide the following minimum dry film thickness per coat unless noted otherwise:
   1. Enamels on Metal: 1 mil
   2. Latex Paints: 1 mil
   3. Metal Primers: 1.5 mils
   4. Undercoats: 1.5 mils
   5. Oil Paints: 1.5 mils
   6. Epoxy Coating: 2.0 mils

   Thickness test: Use observation gauge that measures “V” shape scratch.

C. Allow exterior paints to dry 72 hours between coats and interior paint to dry 24 hours between coats. Allow all enamels and varnishes to dry 24 hours between coats. If enamel and varnishes are tacky after 24 hours, allow additional time until finish is dry.

D. Leveling: Apply with proper consistency and quality so paint flows out to a level surface free of brush and roller marks, bubbles, dust, runs, sags, and holidays. Spread evenly.

E. Appearance: Uniform color, texture and sheen.

F. Neatness: Paint shall not be smeared, spattered or run over adjoining colors or materials. Cut-on lines shall be straight.

G. First coat shall be white, unless otherwise specified.

## 3.5 CLEANING AND PROTECTION

A. Keep project premises free of painting-related debris. Collect material that may constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Protect work adjacent to painting operations from paint spatters and spills. Immediately remove paint that falls on finished surfaces not scheduled to receive paint, using materials and techniques that will not damage affected surfaces.

## 3.6 SCHEDULE

A. The following is a schedule of typical painted items and does not specifically include every item that is to receive paint but should establish type and quality of finish for all items normally included in a complete paint job.

B. Exterior Surfaces: Note: Exterior surfaces are divided into two (2) different categories, based upon color and level or graffiti resistance required. System 1 will be used when standard earthtone colors or neutral colors are specified, and System 2 will be used when bright colors (primary reds, yellows, and oranges) are specified and/or when a graffiti resistant coating is required.

1. Galvanized Metal:
   a. Surface Preparation: Acid etch galvanized surfaced that have not weathered at least six (6) months prior to being painting operations.
   b. Primer: One (1) coat DTM Primer/Finish (B66W1)
   c. Finish: Two (2) coats DTM Acrylic Gloss (B66 Series)
2. Un-galvanized Metal:
   a. Primer: One (1) coat Kem Kromik Universal Primer (B50Z Series)
   b. Finish: Two (2) coats DTM Acrylic Gloss (B66W1)
3. Concrete and CMU:
   a. Primer: One (1) coat PrepRite Block Filler (B25W25)
   b. Finish: Two (2) coats A-100 Acrylic Gloss (A8 Series)
4. Wood (Includes plywood siding and wooden trim):
   a. Primer: One (1) coat A-100 Latex Wood Primer (B42W41)
   b. Finish: Two (2) coats A-100 Acrylic Gloss (A8 ser.)
5. Fiber-Cement Materials:
   a. Primer: One (1) coat Loxon Masonry Primer (A25W300)
   b. Finish: Two (2) coats A-100 Acrylic Gloss (A8 Series)
6. Parking Line and Driveway Paint: Setfast Waterbone Yellow (TM225) (meets Federal Specification (FS) TTP-1952-B)
7. All Piping in mechanical rooms shall be painted in their entirety, in the following colors:
   a. Gas lines: Orange
   b. Domestic cold water: White
   c. Domestic hot water: Pink
   d. Heating hot water: Red
   e. Condenser water: Green
   f. Chilled water: Blue

C. Interior Surfaces:

1. Galvanized Metal:
   a. Primer: One (1) coat DTM Acrylic Primer/Finish (B66W1)
   b. Finish: Two (2) coats ProClassic Waterborne Acrylic Gloss (B31 Series)
2. Gypsum Wallboard:
   a. Primer: One (1) coat PrepRite 200 Latex Primer (B28W200)
   b. Finish: Two (2) coats ProMar 200 Latex Eg-Shel (B20-200 Series)
3. Concrete and CMU: (Enamel)
   a. Primer: One (1) coat PrepRite Block Filler (AB25W25)
   b. Finish: Two (2) coats ProMar 200 Latex Semi-Gloss (B31-200 Series)
4. Wood: (Painted)

a. Primer: PrepRite Classic Latex Primer (B28W101)
b. Finish: ProClassic Waterborne Semi-Gloss (B31 Series)

5. Wood: (Stained)
   a. Stain: Wood Classics Interior Stain (A49-200 Series)
   b. Finish (First Coat): Wood Classics Polyurethane Varnish (A67 Series)
   c. Finish (Second Coat): Wood Classics Polyurethane Varnish (A67 Series)
6. Gypsum Wallboard: (Epoxy) – Classooms, Kitchens,Restrooms, etc.
   a. Primer: One (1) coat PrepRite 200 Latex Primer (B28W200)
   b. Finish: Two (2) coats Water-Based Catalyzed Epoxy (B70/B60)
7. CMU: (Epoxy) – Kitchens, bathrooms, etc.
   a. Primer: Two (2) coats Heavy Duty Block Filler (B42W46)
   b. Finish: Two (2) coats Water-Based Catalyzed Epoxy (B70/B60)

**END OF SECTION**

**SECTION 10101**

**MARKERBOARD AND TACKBOARD**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SUBMITTALS

A. Shop Drawings: Indicate sizes and layout, method of attachment, accessories, trim, details and finish.

B. Product Data: Manufacturer's specifications and other data needed to prove compliance with the specified requirement.

C. Manufacturer's installation instructions.

D. Samples: Include color charts showing manufacturer's full range of colors for Architect's selection.

### 1.2 WARRANTY

A. Warrant the Work specified herein against becoming unserviceable or causing an objectionable appearance resulting from either defective or nonconforming materials and workmanship for the following terms:
   1. Markerboards: Minimum of 50 years or for the life of the installation.
   2. Tackboards: Minimum five (5) years.

B. Defects shall include, but not be limited to, the following:
   1. Noticeable deterioration of finish.
   2. Writing surface delamination
   3. Fabric discoloration, tearing, or delamination
   4. Unit releasing from substrate

## PART 2 – PRODUCTS

### 2.1 APPROVED MANUFACTURERS

A. Manufacturers listed whose products meet or exceed the specifications are approved for use on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
   1. Aarco Products, Inc.
   2. ADP Lemco Incorporated, (Alinc)
   3. Best Rite Manufacturing
   4. Claridge Products and Equipment, Inc.
   5. Marsh Industries, Inc.
   6. Newline Products, Inc.
   7. Polyvision

B. Specifications are based on products of Claridge Products and Equipment, Inc., Harrison, AK (870) 743-2200

## 2.2 MATERIALS

A. Markerboards (MB):
1. Material: 24 gauge porcelain enamel steel similar to "Liquid Chalk Surfaces (LCS)" with the ability to use liquid chalk writing system markers and magnets, mounted on 3/8 inch hardboard core, with aluminum foil backing (1/2 inch total thickness).
2. Sizes: Four (4) feet high, unless noted otherwise x length shown on drawings. One (1) piece length through 16 feet.
3. Color: As selected by Architect from manufacturer's standard colors.
4. Accessories:
   a. Marker Trough: Similar to No. 371A marker trough with extended rear flange and endcaps under all markerboards.
   b. Edge Trim:
      1) Extruded aluminum snap on trim, similar to No. 273A
      2) Color: Dull satin anodized, natural.
   c. Map Rail: Similar to No. 275A across top of markerboard.
   d. Map Clips: Similar to No. 76M, four (4) per markerboard.
   e. Mounting clips: Similar to No. 277 concealed ground clips at top and sides.
   f. Flag Holder: No. 76 F.H.; provide two (2) per board.
5. Locations: As shown on drawings or required.

B. Tackboard (TB):
1. Vinyl plastic mounted on 1/4 inch resilient cork over 1/4 inch hardboard underlayment (1/2 inch total thickness).
2. Type: Similar to "Fabricork"
3. Color: As selected by Architect from manufacturer's standards
4. Accessories:
   a. Edge Trim:
      1) Extruded aluminum snap on trim, similar to No. 273A
      2) Color: Dull satin anodized, natural.
   b. Mounting clips: Similar to No. 277 concealed ground clips
5. Sizes/Locations: As shown on drawings or required.

# PART 3 – EXECUTION

## 3.1 INSTALLATION

A. Field assemble and install markerboards and tackboards in accordance with manufacturer's printed instructions.

B. Rigidly anchor to backup materials to withstand 200 plf load. Set without mastic on gypsum board partitions.

C. Install trim plumb with joints closely fitted and corners mitered. Secure trim with fasteners spaced 16 inches on centers maximum. Provide screws in lead shield on concrete and

masonry walls and direct attachment to studs or metal backing on drywall construction. Use concealed fasteners.

D. Markerboard: Secure marker trough to backup materials with concealed fasteners through rear flange. Slip markerboard into carrier slot. Then, install side and top ground clips and trim in accordance with manufacturer's printed instructions.

E. Provide all ground, brackets, anchors, trim, and accessories for a complete installation.

**END OF SECTION**

**SECTION 10400**

**IDENTIFYING DEVICES**

## PART 1 GENERAL

### 1.01 DESCRIPTION
A. Identifying devices required for this work includes building identification, site identification and room signage.

### 1.02 QUALITY ASSURANCE
A. For installation use only personnel who are skilled in the work required.

### 1.03 SUBMITTALS
A. Shop Drawings: Submit shop drawings in accordance with Section 01340.
B. Installation Methods: Submit two copies of manufacturer's recommended installation methods showing all requirements for blocking and bracing.

### 1.04 PRODUCT HANDLING
A. Protection: Protect identifying devices before, during and after installation; protect installed work of other trades.
B. Replacements: In the event of damage, make necessary replacements.

## PART 2 PRODUCTS

### 2.01 BUILDING IDENTIFICATION (BASE BID)
A. General: Provide one set of letter to identify building. Letters required: *San Carlos Community Resource Center (*8" caps, 6" lower case), *Hidalgo County Precinct No. 4* (4" caps, 3" lower case).
B. Materials:
1. Manufacturer: Southwell Co.
2. Type: Ribbon S-905
3. Size: 8"/6" and 4"/3"
4. Finish Color: Clear Satin Finish, with topcoat
5. Mounting Type: Projected Mount
C. Other Manufacturers: ARK Ramos Foundry and Manf. Co.

### 2.02 ROOM SIGNAGE
A. Allowance: Comply with ADA provisions. Refer to Section 01020.

### 2.03 SITE SIGNAGE
Not Used.

### 2.04 HANDICAPPED SIGNAGE/STREET SIGNAGE
A. Separate Contract (by others).

### 2.05 BUILDING PLAQUE
A. Aluminum plaque as per drawing on sheet 0.0 Mfr.: Southwell Co.

## PART 3 EXECUTION

### 3.01 SURFACE CONDITIONS
A. Inspection:
1. Inspect installed work of other trades and verify that such work is complete to a point where this work may commence.

2. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instructions.

B. Discrepancies:
   1. In event of discrepancy, notify Architect.
   2. Do not proceed with installation until discrepancies have been resolved.

**3.02 INSTALLATION**

A. Install where indicated, anchoring all components firmly in place in complete accordance with approved shop drawings and the manufacturer's recommendations.

B. Room signs to be mounted on wall surfaces on the strike side of doors at approximately 60 inches above the floor and within 8 inches from the outside edge of the doorframe.

C. Reserved parking sign and traffic signs shall be located in accordance with the latest requirements of Texas State Purchasing and General Services Commission Building and Property Services Division and the Texas Highway Department.

**END OF SECTION**

**SECTION 10800**

**TOILET ROOM ACCESSORIES**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SECTION INCLUDES

A. Toilet accessories; shower accessories; and utility room accessories.

### 1.2 RELATED SECTIONS

A. Section 06112 – Rough Carpentry

B. Section 09250 – Gypsum Board Assemblies

C. Section 09310 – Ceramic Tile

D. Division 16 - Electrical

### 1.3 OWNER FURNISHED CONTRACTOR INSTALLED ITEMS

A. Contractor shall furnish and install other items specified or shown on drawings.

### 1.4 SUBMITTALS

A. Product Data:
1. Manufacturer's specifications and technical data.
2. Manufacturer's installation instructions.
3. Manufacturer's operation and maintenance instructions of units specified.
4. Provide schedule of materials and installation locations.

B. Shop drawings: Indicate size, material and finish. Show locations, installation procedures. Include details of joints, attachments, fasteners, clearances, and mounting heights.

### 1.5 MINIMUM COMPLIANCE STANDARDS

A. Comply with ANSI A117.1 and Texas Accessibility Standards (TAS) and with referenced standards specified with each product or material.

### 1.6 QUALITY STANDARDS

A. Design, finish and keying of items shall be the same.

B. Furnish items from one (1) manufacturer only unless otherwise specified or directed by Architect.

### 1.7 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01110 – Notification of Architect Requriements.

## 1.8 COORDINATION

A. Coordinate the Work with placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

## 1.9 WARRANTY

A. Warrant the work specified herein for three (3) years, or provide manufacturer's standard warranty for specified products, against becoming unserviceable or causing an objectionable appearance resulting from either defective or non-conforming materials and workmanship.

B. Defects shall include, but not be limited to:
   1. Delamination or deterioration of finish
   2. Noisy, rough or difficult operation
   3. Failure to meet specified quality assurance requirements

# PART 2 – PRODUCTS

## 2.1 MANUFACTURERS

A. Manufacturers listed whose products meet or exceeds the specifications are approved for use on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
   1. A & J Washroom Accessories
   2. American Specialties, Inc. (ASI)
   3. Bobrick Washroom Equipment, Inc.
   4. Bradley Corp.
   5. Koala Bear Kare (Diaper Changing Station)

B. Specifications are based on products of Bobrick Washroom Equipment, Inc., (281) 362-7515

## 2.2 COMPONENTS

A. Accessories – General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Grind welded joints smooth.
   2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Stainless Steel:
   1. Stainless Steel Sheet: ASTM A666 Type 302 or 304
   2. Stainless Steel Tubing: ASTM A269, stainless steel
   3. Finish: No. 4 satin, unless otherwise specified
   4. Thickness: 22 US Stainless gauge minimum

C. Chromium Plating:
   1. Method: Over nickel
   2. Standard: ASTM C456, Type SC 2

D. Mirrors (Framed):
   1. Standard: FS DD-G-451-C, silvering quality No. 1 float or plate
   2. Thickness: 1/4 inch
   3. Backing: Electrolytic copper
   4. Protection: Padding and filler strips

E. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof

F. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

G. Backing: concealed backing to comply with local codes and as required for substrate conditions; or manufacturers standard mounting kits.

**2.3 FINISHING**

A. Stainless Steel: No. 4 satin brushed, typical on all accessories, unless otherwise noted.

B. Baked Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats vitreous enamel.

C. Chrome/Nickel Plating: satin finish

D. Shop Primed Ferrous Metals: Pretreat and clean, spray apply one coat primer and bake

E. Back paint components where contact is made with building finishes to prevent electrolysis

**PART 3 – EXECUTION**

**3.1 MOUNTING LOCATIONS**

A. Comply with ADA and TAS requirements. Refer to drawings. When not shown, submit supplier's recommendations for locations and mounting height before proceeding.

B. Contractor shall be responsible for supplying all opening, blocking, and other components necessary for installation of all toilet accessories.

C. Use approved theft-resistant type fasteners.

**3.2 SCHEDULE**

A. As a quality standard, Model Numbers shown which are not Owner furnished are products of Bobrick Washroom Equipment, Inc., unless noted otherwise.

<u>WASHROOM EQUIPMENT</u>

1. TA-1 – Soap Dispensers:
   a. Mounting: Surface
   b. Model No.: B-2112
   c. Locations: One (1) at each lavatory. Refer to drawings.
2. TA-2 – Mirrors:
   a. Mounting: Surface
   b. Model No.: B-290
   c. Size/Locations: 24 inches x 48 inches, unless shown otherwise. One (1) at each lavatory. Refer to drawings.
3. TA-3 – Toilet Paper Dispenser:
   a. Mounting: Surface
   b. Model No.: B-264
   c. Locations: One (1) at each water closet. Refer to drawings.
4. TA-4 – Paper Towel Dispenser:
   a. Model No.: Kimberly-Clark 09765

b. Locations: Refer to drawings

5. TA-5 – Grab Bars: (At Typical Accessible Toilet Stalls)
   a. Size/Finish: 1-1/2 inch diameter Satin Finish Stainless Steel
   b. Clearance: 1-1/2 inch between rail and wall
   c. Model No.: B-6806
   d. Mounting: Attach with concealed mounting. Mount parallel to floor
   e. Location: One (1) 36 inch behind toilet, and one (1) 42 inch long bar at side of toilet, at each accessible stall. Refer to drawings.
6. TA-7 – Sanitary Napkin Disposal:
   a. Mounting: Surface
   b. Model No.: B-270
   c. Locations: One (1) at each Women's toilet room and Area 'C' girls toilet rooms. Refer to drawings.
7. TA-8 – Mop and Broom Holder:
   a. Mounting: Surface
   b. Model No.: B-239 x 34
   c. Capacity: Four (4) hooks, three (3) mop holders
   d. Location: One (1) above mop sink at each custodial room whether indicated or not. Refer to drawings.
8. TA-9 – Grab Bars: (At Accessible Shower)
   a. Mounting: Surface
   b. Model No.: B-6861 modified (24 x 16)
   c. Location: One (1) at each accessible shower stall. Refer to drawings.
9. TA-10 – Folding Bench:
   a. Mounting: Surface, reversible
   b. Models: B-5181 (Use Bradley No. 9561 at elementary schools 15 inch seat height)
   c. Location: One (1) at each accessible shower stall
10. TA-11 – Clothes Hook:
    a. Mounting: Surface
    b. Model No.: B-6717; or equivalent
    c. Location: One (1) hook inside door at single toilet rooms unless noted otherwise.
    d. Toilet Partitions: Hook provided by toilet partition manufacturer included in standard hardware package in accordance with Toilet Partition Section; unless noted otherwise.
11. TA-12 – Shower Curtains, Rods and Hooks:
    a. Model Nos.:
       1) Rods: B-6047 (36 inches or as indicated)
       2) Curtains: 204-2 (42 inches x 72 inches or as required)
       3) Hooks: 204-1 (Seven (7) hooks per curtain or as required)
       4) Mounting/Location: One (1) at each accessible shower. Refer to drawings.
12. TA- 13 – Electric Hand Dryer
    a. Mounting: Surface Mounted
    b. Model No.: B-7120, White
    c. Voltage: 115 VAC, 15 amp, 1725 watts, 60 HZ

    d. Location: Refer to drawings
13. TA-15 – Grab Bars: (At Additional Accessible Toilet Stalls)
    a. Size/Finish: 1-1/2 inch diameter Satin Finish Stainless Steel
    b. Clearance: 1-1/2 inch between rail and wall
    c. Model No.: B-6806
    d. Mounting: Attach with concealed mounting. Mount parallel to floor
    e. Location: One (1) 36 inch at each side of toilet, at each accessible stall. Refer to drawings.

**END OF SECTION**

**SECTION 10950**

**FIRE EXTINGUISHER AND CABINETS**

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

## PART 1 – GENERAL

### 1.1 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications and technical data to indicate specification compliance.
   2. Manufacturer's installation instructions.

## PART 2 – PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

A. Specifications are based on the products of named manufacturers. Other listed manufacturers who produce products equivalent to those specified are approved for use on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing equivalent to those specified and comply with Division 1 requirements regarding substitutions to be considered.
   1. Larsen's Manufacturing Co.
   2. The Williams Bros. Corporation of America
   3. J. L. Industries, Inc.
   4. Potter-Roemer

### 2.2 MATERIALS

A. Fire Extinguisher Cabinets (FEC):
   1. Size: 24 inches x 9-1/2 inches x 6 inches inside tub dimension
   2. Type: Semi-recessed with 2-1/2 inch return trim rolled edge; ADA compliant
   3. Tub Construction: 22 gauge min. steel with standard baked acrylic enamel interior finish
   4. Door and Frame: 18 gauge min. 304 stainless steel door and frame with vertical decal lettering “FIRE EXTINGUISHER” in red color, unless directed otherwise by Architect
   5. Glazing: clear acrylic “Duo” vertical glazing panel
   6. Hardware: Continuous concealed piano hinge constructed of material which matches door and trim material. Satin finish pull handle with cam cylinder lock with safety pull designed to release upon firm pull on handle (Larsen's “Larsen-Loc”™, J. L. Industries “Saf-T-Lok”™; or equivalent)
   7. Bracket: Hook type; Larsen's #1007, or equal
   8. Finish of Exterior: #4 Stainless steel
   9. Fire rating: as occurs, provide fire rated cabinet, for one or two hour rated conditions as indicated or required by specific location. Cabinet shall be tested and approved by Warnock Hersey to ASTM E-814, and shall bear the Warnock Hersey label.

B. Fire Extinguisher (F.E.):
   1. Models/Types:

a. Multipurpose dry chemical with 10 lbs. Capacity and UL 4A-60B: C rating

b. Multipurpose dry chemical with 5 lbs. Capacity and UL 2A-10B: C rating conforming to MP5 Series

2. Mounting: Provide eye brackets for direct wall mounting to hook and for mounting in Fire Extinguisher cabinets. Refer to drawings for location and quantity.

3. Provide initial inspection tag for each extinguisher.

**PART 3 – EXECUTION**

**3.1 INSTALLATION**

A. Install fire extinguisher cabinets in openings prepared by others in accordance with manufacturer's printed instructions.

B. Install fire extinguisher cabinets in locations required by governing code and as directed by Owner.

**END OF SECTION**

# Hidalgo County Precinct No. 4
# Linn - San Manuel Emergency Services Facility
San Manuel, Texas

County of Hidalgo
2014-067-04-02-MSS-Hidalgo County Precinct No. 4
"Construction of the Linn – San Manuel Emergency Services Facility

Mata + Garcia Architects LLP
1314 Ivy Avenue
McAllen, Texas 78501
Tel: 956.631.1945
Fax: 956.631.1968

Sigma HN Engineers, PLLC

701 South 15th Street
McAllen, Texas 78501
Tel: 956.332.3206
Fax: 956.687.5561

Chanin Engineering
400 Nolana, Suite D
McAllen, Texas 78504
Tel: 956.687.9421
Fax: 956.687.3211

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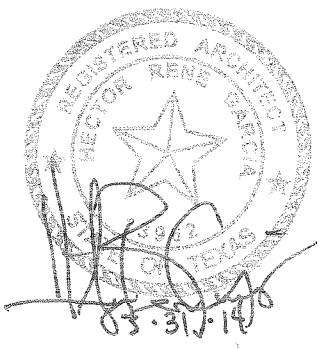


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Volume 2
SET NO. _____

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SECTION 13851-FIRE ALARM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes fire alarm systems with manual stations, detectors, signal equipment, controls, and devices.

B. Related Sections include the following:

1. Division 8 Section "Hardware" for door closers/holders/smoke detectors, electric door locks, and release devices that interface with fire alarm systems.

1.3 DEFINITIONS

A. FACP: Fire alarm control panel.

B. LED: Light-emitting diode.

C. Definitions in NFPA 72 apply to fire alarm terms used in this Section.

1.4 SYSTEM DESCRIPTION

A. General: Noncoded, addressable-analog system with manual and automatic alarm initiation; automatic sensitivity control of certain smoke detectors; and multiplexed signal transmission dedicated to fire alarm service only.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show details of graphic annunciator.

1. Wiring Diagrams: Detail wiring and differentiate between manufacturer-installed and field-installed wiring. Include diagrams for equipment and for system with all terminals and interconnections identified.

2. Battery: Sizing calculations.

3. Floor Plans: Indicate final outlet locations and routings of raceway connections.

4. Device Address List: Coordinate with final system programming.

5. System Operation Description: Detailed description for this Project, including method of operation and supervision of each type of circuit and sequence of operations for manually and automatically initiated system inputs and outputs. Manufacturer's standard descriptions for generic systems are not acceptable.

C. Coordination Drawings: Plans, sections, and elevations drawn to scale and coordinating installation of smoke detectors in ducts and access to them. Show the following near each duct smoke provision of detector installation:

1. Size and location of ducts, including lining.

2. Size and location of piping.

3. Size and arrangement of structural elements.

4. Size and location of duct smoke detector, including air-sampling elements.

D. Operating Instructions: For mounting at the FACP.

E. Product Certificates: Signed by manufacturers of system components certifying that products furnished comply with requirements.

F. Installer Certificates: Signed by manufacturer certifying that installers comply with requirements.

G. Field Test Reports: Indicate and interpret test results for compliance with performance requirements. Comply with NFPA 72.

H. Maintenance Data: For fire alarm systems to include in maintenance manuals specified in Division 1. Comply with NFPA 72.

I. Submissions to Authorities Having Jurisdiction: In addition to distribution requirements for Submittals specified in Division 1 Section "Submittals," make an identical submission to authorities having jurisdiction. Include copies of annotated Contract Drawings as needed to depict component locations to facilitate review. Resubmit if required to make clarifications or revisions to obtain approval. On receipt of comments from authorities having jurisdiction, submit them to Architect for review.

J. Certificate of Completion: Comply with NFPA 72.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is an authorized representative of the FACP manufacturer for both installation and maintenance of units required for this Project.

B. Manufacturer Qualifications: A firm experienced in manufacturing systems similar to those indicated for this Project and with a record of successful in-service performance.

C. Source Limitations: Obtain fire alarm system components through one source from a single manufacturer.

D. Compliance with Local Requirements: Comply with applicable building code, local ordinances and regulations, and requirements of authorities having jurisdiction.

E. Comply with NFPA 72.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps for Remote Indicating Lamp Units: Quantity equal to 10 percent of amount installed, but not less than one unit.

2. Lamps for Strobe Units: Quantity equal to 10 percent of amount installed, but not less than one unit.

3. Smoke Detectors: Quantity equal to 10 percent of amount of each type installed, but not less than one unit of each type.

4. Detector Bases: Quantity equal to 2 percent of amount of each type installed, but not less than one unit of each type.

5. Keys and Tools: One extra set for access to locked and tamper proofed components.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Edwards Systems Technology; Unit of General Signal.

2. Honeywell, Inc.

3. Notifier; Div. of Pittway Corp.

4. Silent Knight

2.2 FUNCTIONAL DESCRIPTION OF SYSTEM

A. Control of System: By the FACP.

B. System Supervision: Automatically detect and report open circuits, shorts, and grounds of wiring for initiating device, signaling line, and notification-appliance circuits.

C. Priority of Signals: Automatic alarm response functions resulting from an alarm signal from one zone or device are not altered by subsequent alarm, supervisory, or trouble signals. An alarm signal is the highest priority. Supervisory and trouble signals have second- and third-level priority. Higher-priority signals take precedence over signals of lower priority, even when the lower-priority condition occurs first. Annunciate and display all alarm, supervisory, and trouble signals regardless of priority or order received.

D. Noninterference: A signal on one zone shall not prevent the receipt of signals from other zones.

E. System Reset: All zones are manually resettable from the FACP after initiating devices are restored to normal.

F. Transmission to Remote Alarm Receiving Station: Automatically route alarm, supervisory, and trouble signals to a remote alarm station by means of a digital alarm communicator transmitter and telephone lines.

G. System Alarm Capability during Circuit Fault Conditions: System wiring and circuit arrangement prevent alarm capability reduction when a single ground occurs in an initiating device circuit, signal line circuit, or notification-appliance circuit.

H. Loss of primary power at the FACP initiates a trouble signal at the FACP and the annunciator. An emergency power light is illuminated at both locations when the system is operating on the secondary power supply.

I. Basic Alarm Performance Requirements: Unless otherwise indicated, operation of a manual station, automatic alarm operation of a smoke or flame or heat detector, or operation of a sprinkler flow device initiates the following:

1. Notification-appliance operation.

2. Identification at the FACP and the remote annunciator of the zone originating the alarm.

3. Transmission of an alarm signal to the remote alarm receiving station.

4. Unlocking of electric door locks in designated egress paths.

5. Release of fire and smoke doors held open by magnetic door holders.

6. Shutdown of fans and other air-handling equipment serving zone when alarm was initiated.

7. Closing of smoke dampers in air ducts of system serving zone where alarm was initiated.

8. Recording of the event in the system memory.

9. Recording of the event by the system printer.

J. Alarm Silencing, System Reset and Indication: Controlled by switches in the FACP and the remote annunciator.

1. Silencing-switch operation halts alarm operation of notification appliances and activates an "alarm silence" light. Display of identity of the alarm zone or device is retained.

2. Subsequent alarm signals from other devices or zones reactivate notification appliances until silencing switch is operated again.

3. When alarm-initiating devices return to normal and system reset switch is operated, notification appliances operate again until alarm silence switch is reset.

K. Water-flow alarm switch operation initiates the following:

1. Notification-appliance operation.

2. Flashing of the device location-indicating light for the device that has operated.

L. Smoke detection for zones or detectors with alarm verification initiates the following:

1. Audible and visible indication of an "alarm verification" signal at the FACP.

2. Activation of a listed and approved "alarm verification" sequence at the FACP and the detector.

3. Recording of the event by the system printer.

4. General alarm if the alarm is verified.

5. Cancellation of the FACP indication and system reset if the alarm is not verified.

M. Sprinkler valve-tamper switch operation initiates the following:

1. A supervisory, audible, and visible "valve-tamper" signal indication at the FACP and the annunciator.

2. Flashing of the device location-indicating light for the device that has operated.

3. Transmission of supervisory signal to remote alarm receiving station.

N. Low-air-pressure switch operation on a dry-pipe or preaction sprinkler system initiates the following:

1. A supervisory, audible, and visible "sprinkler trouble" signal indication at the FACP and the annunciator.

2. Flashing of the device location-indicating light for the device that has operated.

3. Transmission of trouble signal to remote central station.

O. Remote Detector Sensitivity Adjustment: Manipulation of controls at the FACP causes the selection of specific addressable smoke detectors for adjustment, display of their current status and sensitivity settings, and control of changes in those settings. Same controls can be used to program repetitive, scheduled, automated changes in sensitivity of specific detectors. Sensitivity adjustments and sensitivity-adjustment schedule changes are recorded in system memory and are printed out by the system printer.

P. Removal of an alarm-initiating device or a notification appliance initiates the following:

1. A "trouble" signal indication at the FACP and the annunciator for the device or zone involved.

2. Transmission of trouble signal to remote alarm receiving station.

Q. FACP Alphanumeric Display: Plain-English-language descriptions of alarm, supervisory, and trouble events; and addresses and locations of alarm-initiating or supervisory devices originating the report. Display monitoring actions, system and component status, system commands, programming information, and data from the system's historical memory.

## 2.3 MANUAL PULL STATIONS

A. Description: Fabricated of metal or plastic, and finished in red with molded, raised-letter operating instructions of contrasting color.

1. Double-action mechanism requires two actions, such as a push and a pull, to initiate an alarm.

2. Station Reset: Key or wrench operated; double pole, double throw; switch rated for the voltage and current at which it operates.

3. Weatherproof Protective Shield: Factory-fabricated clear plastic enclosure, hinged at the top to permit lifting for access to initiate an alarm.

4. Integral Addressable Module: Arranged to communicate manual-station status (normal, alarm, or trouble) to the FACP.

## 2.4 SMOKE DETECTORS

A. General: Include the following features:

1. Operating Voltage: 24-V dc, nominal.

2. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.

3. Plug-in Arrangement: Detector and associated electronic components are mounted in a module that connects in a tamper-resistant manner to a fixed base with a twist-locking plug connection. Terminals in the fixed base accept building wiring.

4. Integral Visual-Indicating Light: LED type. Indicates detector has operated.

5. Sensitivity: Can be tested and adjusted in-place after installation.

6. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to the FACP.

7. Remote Controllability: Unless otherwise indicated, detectors are analog-addressable type, individually monitored at the FACP for calibration, sensitivity, and alarm condition, and individually adjustable for sensitivity from the FACP.

B. Photoelectric Smoke Detectors: Include the following features:

1. Sensor: LED or infrared light source with matching silicon-cell receiver.

2. Detector Sensitivity: Between 2.5 and 3.5 percent/foot (0.008 and 0.011 percent/mm) smoke obscuration when tested according to UL 268A.

C. Ionization Detector: Include the following features:

1. Responsive to both visible and invisible products of combustion.

2. Self-compensating for changes in environmental conditions.

D. Beam-Type Smoke Detector: Each detector consists of a separate transmitter and receiver with the following features:

1. Adjustable Sensitivity: More than a six-level range, minimum.

2. Linear Range of Coverage: 600 feet (180 m), minimum.

3. Tamper Switch: Initiates trouble signal at the central FACP when either transmitter or receiver is disturbed.

4. Separate Color-Coded LEDs: Indicate normal, alarm, and trouble status. Any detector trouble, including power loss, is reported to the central FACP as a composite "trouble" signal.

E. Remote Air-Sampling Detector System: Includes air-sampling pipe network, a laser-based photoelectric detector, a sample transport fan, and a control unit.

1. Pipe Network: Electrical metallic tubing connects control unit with designated sampling holes.

2. Control Unit: Single or multizone unit as indicated. Provides same system power supply, supervision, and alarm features as specified for the central FACP plus separate trouble indication for airflow and detector problems.

3. Signals to the Central FACP: Any type of local system trouble is reported to the central FACP as a composite "trouble" signal. Alarms on each system zone are individually reported to the central FACP as separately identified zones.

F. Duct Smoke Detector: Ionization type.

1. Sampling Tube: Design and dimensions as recommended by the manufacturer for the specific duct size, air velocity, and installation conditions, where applied.

2. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.

2.5 OTHER DETECTORS

A. Heat Detector, Combination Type: Actuated by either a fixed temperature of 135 deg F (57 deg C) or rate of rise of temperature that exceeds 15 deg F (8.3 deg C) per minute, unless otherwise indicated.

1. Mounting: Plug-in base, interchangeable with smoke detector bases.

2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to the FACP.

2.6 NOTIFICATION APPLIANCES

A. Description: Equip for mounting as indicated and have screw terminals for system connections.

1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly.

B. Bells: Electric-vibrating, 24-V dc, under-dome type; with provision for housing the operating mechanism behind the bell. When operating, bells provide a sound-pressure level of 94 dB, measured 10 feet (3 m) from the bell. 10-inch (254-mm) size, unless otherwise indicated. Bells are weatherproof where indicated.

C. Chimes, Low-Level Output: Vibrating type, 75 dB minimum rated output.

D. Chimes, High-Level Output: Vibrating type, 81 dB minimum rated output.

E. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Horns produce a sound-pressure level of 90 dB, measured 10 feet (3 m) from the horn.

F. Visible Alarm Devices: Xenon strobe lights listed under UL 1971 with clear or nominal white polycarbonate lens. Mount lens on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.

1. Strobe Leads: Factory connected to screw terminals.

2.7 FIREFIGHTERS' TELEPHONES

A. Comply with NFPA 72 requirements for two-way telephone communication service.

B. Telephone Handsets: High-impact plastic handset, heavy-duty coil cord, and hook switch; connected to the FACP by dedicated, supervised communication lines. Handsets have a dynamic receiver and a carbon transmitter, operating on 24-V dc.

C. Cabinet: Flush or surface mounted as indicated, 0.05-inch- (1.3-mm-) minimum stainless steel with a latched hinged door with red trim.

1. Exterior Identification: "Firefighters' Telephone."

2. Interior Identification: Station number and location.

3. Size: To accommodate handset and cord.

2.8 MAGNETIC DOOR HOLDERS

A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching door plate.

1. Electromagnet: Requires no more than 3 W to develop 25-lbf (111-N) holding force.

2. Wall-Mounted Units: Flush mounted, unless otherwise indicated.

3. Rating: 120-V ac.

B. Material and Finish: Match door hardware.

2.9 CENTRAL FACP

A. Cabinet: Lockable steel enclosure. Arrange interior components so operations required for testing or for normal maintenance of the system are performed from the front of the enclosure. If more than one unit is required to form a complete control panel, fabricate with matching modular unit enclosure to accommodate components and to allow ample gutter space for field wiring and interconnecting panels.

1. Identify each enclosure with an engraved, red, laminated, phenolic-resin nameplate with lettering not less than 1 inch (25 mm) high. Identify individual components and modules within cabinets with permanent labels.

2. Mounting: Surface.

B. Alarm and Supervisory Systems: Separate and independent in the FACP. Alarm-initiating zone boards consist of plug-in cards. Construction requiring removal of field wiring for module replacement is unacceptable.

C. Control Modules: Include types and capacities required to perform all functions of fire alarm systems.

D. Indications: Local, visible, and audible signals announce alarm, supervisory, and trouble conditions. Each type of audible alarm has a different sound.

E. Resetting Controls: Prevent the resetting of alarm, supervisory, or trouble signals while the alarm or trouble condition still exists.

F. Alphanumeric Display and System Controls: Arranged for interface between human operator at the FACP and addressable system components, including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

1. Display: Liquid-crystal type, 80 characters, minimum.

2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.

G. Alphanumeric Display and System Controls: Arranged for interface between human operator at the FACP and addressable system components, including annunciation, supervision, and control.

1. Display: A minimum of 80 characters; alarm, supervisory, and component status messages; and indicate control commands to be entered into the system for control of smoke detector sensitivity and other parameters.

2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.

H. Firefighters' Telephone Control Module: Controls firefighters' two-way telephone communication system. Arrange system to use dedicated, two-way, supervised voice communication links between the FACP and remote firefighters' telephone stations throughout the building. Supervised telephone lines shall be connected to talk circuits by controls in this module. Controls provide the ability to disconnect phones from talk circuits if too many phones are in use simultaneously. The module includes the following:

1. Audible Pulse and Tone Generator, and High-Intensity Lamp: When a remote telephone is activated, it causes the audible signal to sound and the high-intensity lamp to flash.

2. Selector panel controls simultaneous operation of telephones in selected zones and permits up to six phones to be operated simultaneously. Ground faults and open or shorted telephone lines are indicated on the panel front by individual LEDs. Zone-selector switches with associated LED indicators permit the firefighter to activate selected telephone zones. LED indicators display elevator recall status.

I. Instructions: Printed or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response

for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

2.10 REMOTE ANNUNCIATOR

A. Description: Duplicate annunciator functions of the FACP for alarm, supervisory, and trouble indications. Also duplicate manual switching functions of the FACP, including acknowledging, silencing, reset, and test.

1. Mounting: Flush cabinet, NEMA 250, Class 1.

B. Display Type and Functional Performance: Alphanumeric display same as the FACP. Controls with associated LEDs permit acknowledging, silencing, resetting, and testing functions for alarm, supervisory, and trouble signals identical to those in the FACP.

C. Graphic Display Panel for Remote Annunciator: Wall-mounted engraved panel indicating the building floor plan with a "You Are Here" designation. Engrave zone, area, and floor designations on the face of the panel.

1. Materials: Satin-finished stainless steel or brushed aluminum.

2. Floor Plan and Zone Boundary Lines: Engraved in the surface and filled with colored paint. Floor plan lines are black and 1/4 inch (6 mm) wide

3. Engraved Legends: 1/4-inch- (6-mm-) high minimum, in letters filled with red paint.

4. Mounting: Adjacent to remote annunciator.

2.11 EMERGENCY POWER SUPPLY

A. General: Components include nickel-cadmium battery, charger, and an automatic transfer switch.

1. Battery Nominal Life Expectancy: 20 years, minimum.

B. Battery Capacity: Comply with NFPA 72.

1. Magnetic door holders are not served by emergency power. Magnetic door holders are released when normal power fails.

C. Battery Charger: Solid-state, fully automatic, variable-charging-rate type. Provide capacity for 150 percent of the connected system load while maintaining batteries at full charge. If batteries are fully discharged, the charger recharges them completely within four hours. Charger output is supervised as part of system power supply supervision.

D. Integral Automatic Transfer Switch: Transfers the load to the battery without loss of signals or status indications when normal power fails.

2.12 ADDRESSABLE INTERFACE DEVICE

A. Description: Microelectronic monitor module listed for use in providing a multiplex system address for listed fire and sprinkler alarm-initiating devices with normally open contacts.

2.13 DIGITAL ALARM COMMUNICATOR TRANSMITTER

A. Listed and labeled under UL 864 and NFPA 72.

B. Functional Performance: Unit receives an alarm, supervisory, or trouble signal from the FACP panel, and automatically captures one or two telephone lines and dials a preset number for a remote central station. When contact is made with the central station(s), the signal is transmitted. The unit supervises up to two telephone lines. Where supervising two lines, if service on either line is interrupted for longer than 45 seconds, the unit initiates a local trouble signal and transmits a signal indicating loss of telephone line to the remote alarm receiving station over the remaining line. When telephone service is restored, unit automatically reports that event to the central station. If service is lost on both telephone lines, the local trouble signal is initiated.

C. Secondary Power: Integral rechargeable battery and automatic charger. Battery capacity is adequate to comply with NFPA 72 requirements.

D. Self Test: Conducted automatically every 24 hours with report transmitted to central station.

2.14 SYSTEM PRINTER

A. Description: Listed and labeled as an integral part of the fire alarm system.

2.15 WIRE

A. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.

1. Low-Voltage Circuits: No. 16 AWG, minimum.

2. Line-Voltage Circuits: No. 12 AWG, minimum.

B. Power-Limited Circuits: NFPA 70, Types FPL, FPLR, or FPLP, as recommended by manufacturer.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

A. Connect the FACP with a disconnect switch with lockable handle or cover. Finish to be red.

B. Manual Pull Stations: Mount semi-flush in recessed back boxes.

C. Water-Flow Detectors and Valve Supervisory Switches: Connect for each sprinkler valve station required to be supervised.

3.2 WIRING INSTALLATION

A. Wiring Method: Install wiring in metal raceway according to Division 16 Section "Raceways and Boxes." Conceal raceway except in unfinished spaces and as indicated.

B. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by the manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

C. Cable Taps: Use numbered terminal strips in junction, pull and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.

D. Color-Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and a different color-code for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red.

E. Risers: Install at least two vertical cable risers to serve the fire alarm system. Separate risers in close proximity to each other with a minimum one-hour-rated wall, so the loss of one riser does not prevent the receipt or transmission of signal from other floors or zones.

3.3 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals according to Division 16 Section "Basic Electrical Materials and Methods."

B. Install instructions frame in a location visible from the FACP.

C. Paint power-supply disconnect switch red and label "FIRE ALARM."

3.4 GROUNDING

A. Signal Ground Terminal: Locate at main equipment rack or cabinet. Isolate from power system and equipment grounding.

B. Install grounding electrodes of type, size, location, and quantity as indicated. Comply with installation requirements in Division 16 Section "Grounding."

C. Ground equipment and conductor and cable shields. For audio circuits, minimize, to the greatest extent possible, ground loops, common-mode returns, noise pickup, cross talk, and

other impairments. Provide 5-ohm ground at main equipment location. Measure, record, and report ground resistance.

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and connections and to supervise pretesting, testing, and adjustment of the system. Report results in writing.

B. Pretesting: After installation, align, adjust, and balance the system and perform complete pretesting. Determine, through pretesting, the compliance of the system with requirements of Drawings and Specifications. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new ones, and retest until satisfactory performance and conditions are achieved. Prepare forms for systematic recording of acceptance test results.

C. Report of Pretesting: After pretesting is complete, provide a letter certifying the installation is complete and fully operable, including the names and titles of witnesses to preliminary tests.

D. Final Test Notice: Provide a minimum of 10 days' notice in writing when the system is ready for final acceptance testing.

E. Minimum System Tests: Test the system according to procedures outlined in NFPA 72. Minimum required tests are as follows:

1. Verify the absence of unwanted voltages between circuit conductors and ground.

2. Test all conductors for short circuits using an insulation-testing device.

3. With each circuit pair, short circuit at the far end of the circuit and measure the circuit resistance with an ohmmeter. Record the circuit resistance of each circuit on record drawings.

4. Verify that the control unit is in the normal condition as detailed in the manufacturer's operation and maintenance manual.

5. Test initiating and indicating circuits for proper signal transmission under open circuit conditions. One connection each should be opened at not less than 10 percent of initiating and indicating devices. Observe proper signal transmission according to class of wiring used.

6. Test each initiating and indicating device for alarm operation and proper response at the control unit. Test smoke detectors with actual products of combustion.

7. Test the system for all specified functions according to the approved operation and maintenance manual. Systematically initiate specified functional performance items at each station, including making all possible alarm and monitoring initiations and using all communications options. For each item, observe related performance at all devices

required to be affected by the item under all system sequences. Observe indicating lights, displays, signal tones, and annunciator indications. Observe all voice audio for routing, clarity, quality, freedom from noise and distortion, and proper volume level.

8. Test Both Primary and Secondary Power: Verify by test that the secondary power system is capable of operating the system for the period and in the manner specified.

F. Retesting: Correct deficiencies indicated by tests and completely retest work affected by such deficiencies. Verify by the system test that the total system meets Specifications and complies with applicable standards.

G. Report of Tests and Inspections: Provide a written record of inspections, tests, and detailed test results in the form of a test log. Submit log on the satisfactory completion of tests.

H. Tag all equipment, stations, and other components at which tests have been satisfactorily completed.

3.6 CLEANING AND ADJUSTING

A. Cleaning: Remove paint splatters and other spots, dirt, and debris. Touch up scratches and marred finish to match original finish. Clean unit internally using methods and materials recommended by manufacturer.

3.7 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel as specified below:

1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, adjusting, and maintaining equipment and schedules. Provide a minimum of 8 hours' training.

2. Training Aid: Use the approved final version of the operation and maintenance manual as a training aid.

3. Schedule training with Owner, through Architect, with at least seven days' advance notice.

3.8 ON-SITE ASSISTANCE

A. Occupancy Adjustments: When requested within one year of date of Substantial Completion, provide on-site assistance in adjusting sound levels, controls, and sensitivities to suit actual occupied conditions. Provide up to three requested visits to Project site for this purpose.

END OF SECTION 13851

SECTION 15000 - MECHANICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

PART 2 -

2.1 GENERAL

2.2

A. Drawings and general previsions apply to this Section.

B.

C. Examine all plans and specifications, visit the site(s) of the proposed project, and become fully informed as to the extent and character of the work required.

D.

2.3 REQUIRED STANDARDS

2.4

A. Laws and Regulations of the State of Texas.

B.

C. County of Hidalgo, City of Edinburg, codes and ordinances.

D.

2.5 COORDINATION

2.6

A. Coordinate work under this Division to avoid conflicts and to attain satisfactory and complementary systems.

B.

C. Coordinate work under this Division with work under other Divisions to avoid conflicts and to allow for adequate installation, maintenance, and operating space. Obtain the Architect's approval for penetrations of other parts of the Work prior to effecting them.

D. In resolving pipe, duct and conduit coordination, meet all requirements and be guided by these general orders of precedence:

1. Accommodate gravity flow lines with required slopes before other lines.
2. Accommodate lines with specific slope requirements (i.e., steam and refrigerant gas) before other lines.
3. Accommodate work with a required reference elevation before other work.
4. Accommodate mains before branches.
5. Accommodate pipe and duct before conduit.
6. Accommodate large lines before small lines.
7. Accommodate pipe before duct.
8. Accommodate high-pressure and high-velocity duct before low-pressure and low-velocity duct.
9.

E. Coordination of the work must occur between all project contractors and the requirements of access and priority shall be maintained regardless of the equipment installed "first."In resolving pipe, duct, and conduit coordination, meet all requirements and be guided by these general orders of precedence.

F.

2.7 DEFINITIONS

2.8 Specific meanings used in Division 15 (variant forms are inferred):

2.9

A. Work: This project, or the reference part.

B.

C. Provide:

1. Furnish and install, complete with necessary appurtenances.
2. “Provide” is implied throughout this Division unless language is specific.
3.

D. Required: Required by the contract Documents.

E.

F. Necessary: Necessary in order to obtain a finished system in satisfactory operating condition, and meeting all requirements.

G.

H. Furnish: Procure and deliver, ready for installation, necessary and/or required.

I.

J. Install: Receive, place securely, ready for connection to work specified elsewhere, and bring into satisfactory operating condition, as necessary and/or required.

K. Connect: Connect properly to mechanical work. This includes non-physical “connections” such as indirect waste drains.

L.

M. Architect, Project Architect or Architect/Engineer Team.

N.

2.10 SCOPE OF WORK

2.11

A. The work under this Division includes providing complete mechanical systems for the project.

B.

C. All items of labor, material or equipment not required in detail by the specifications or plans, but incidental to, or necessary for the complete installation and proper operation of all phases of work described herein, or reasonably implied in connection therewith, shall be furnished as if called for in detail by the Contract Documents.

D.

2.12 WORKMANSHIP

2.13

A. All labor shall be performed in a workmanlike manner by mechanics skilled in their particular trades. All installations shall be complete in both effectiveness and appearance whether finally enclosed or left exposed. The architect reserves the right to direct the removal or replacement of any item which in his opinion shall not present a reasonable neat or workmanlike appearance, providing that same can be properly installed in an orderly way.

B.

2.14 MANUFACTURER'S INSTRUCTIONS

2.15

2.16 A.Obtain written recommendations and installation and start-up instructions from material vendors and comply, unless otherwise required. Bring discrepancies between these instructions and project requirements to the attention of the Architect, and resolve prior to construction. Provide signed inspection report by manufacture’s representative at system start-up to verify construction and warrantability.

2.17

2.18 OWNER’S INSTRUCTIONS

2.19

A. Provide training to the Owner in the operation of all systems and equipment.

B.

2.20 PERMITS AND FEES

2.21

A. Permits: Obtain special permits necessary for this portion of the Work.

B.

C. Fees: Pay any fees associated with permits, required inspections, and permanent utility connections to this part of the work.

D.

2.22 LICENSES

2.23

A. Work under this Division shall be performed by organizations and individuals holding a current license to perform such type of work by the authority having jurisdiction. "License" in this sense means any process, regardless of its appellation, which is normally mandated by the authority in order to perform such type of work within its jurisdiction. The stipulation of this paragraph applies even if the work is located physically on property owned or controlled by a higher authority. E.G., to work within the city limits of Corpus Christi, Texas, on a Federal project, State of Texas and City of Corpus Christi licenses which would be mandated to work on a private project shall be required even though the City and State may have no jurisdiction over the higher government.

B.

C. In the event that the licensed organization loses its license or is unable to obtain one, or the licensed individual performing the work becomes unlicensed or deports the organization, notify Architect immediately in writing.

D.

2.24 UTILITY COORDINATION

2.25

A. Permanent: In general, provide all ancillary work necessary to obtain utility connections. Pay connection fees. Arrange for connection in a timely manner. Coordinate time and arrangement of other work with the serving utility, and comply with utility standards.

B.

C. Temporary: Refer to Division 1.

D.

2.26 LISTING AND LABELING

2.27

2.28 Materials required to be listed shall be listed and labeled for the particular service if a listing is available. Obtain and comply with the terms of listings. Listed material include.

2.29

A. NSF: Potable water and sanitary waste systems components.

B.

C. UL: Electrical materials.

D. AMCA: Air moving devices and related accessory items.

E. ARI: HVAC equipment.

F. FM or UL: Hazardous fluid and fire protection system components.

G. FIA, FM or AGA: Fuel gas system components.

H.

2.30 MATERIALS AND EQUIPMENT

2.31

A. All materials and equipment shall be new. Products shall be currently manufactured.

B.

C. All materials and equipment shall be clearly marked, stamped or labeled for identification. Do not obscure nameplates. Where manufactures nameplates do not meet the requirements of the mechanical identification specification provide nameplates in accordance with the specification.

D. All products of similar type shall be provided by a single manufacturer throughout the project.

E.

2.32 SUBMITTALS AND REVIEW

2.33

A. Contractor shall furnish to the Architect, within a reasonable time after award of contract, and prior to commencing any work, complete brochures in quadruplicate (plus quantity required by the Contractor) of all materials and equipment which the contractor proposes to furnish on the project. Data shall include descriptive literature, performance data, diagrams, capacity information, etc., to substantiate that proposed equipment will meet all of the requirements of the plans and specifications.

B.

C. All data must be checked and any required changes noted thereon by the contractor, signed and dated prior to furnishing same to the Architect for approval. Contractor's attention is directed that it is mandatory that he thoroughly review data prior to furnishing same to assure that equipment is in accordance with plans and specifications and to assure prompt return of the data.

D. Deviations: Specifically call to the attention of the Architect every proposed deviation from the Contract Document requirements. Failure to identify deviations as such constitutes a representation that all requirements are not met.

E.

F. Review: Review of submittals shall not be construed as releasing the Contractor from responsibility, but rather as a means to facilitate coordination of the work and the proper selection and installation of the products. All work shall be subject to final acceptance by the Architect at the completion of the project.

G. If above information is not provided complete as specified above and within the allocated time, all equipment shall be furnished exactly as specified without any substitutions.

H.

I. Submittals shall be furnished as one complete package and bound in a binder with dividers indicating each specification section. All submitted data shall reference specification sections. Piece-mail submittals or loose submittals shall not be acceptable.

J.

2.34 SUBSTITUTIONS

2.35

A. Refer to the Conditions of the Contract.

B.

C. Where one vendor is indicated for a product, it is to establish a level of quality and performance; provide a product equal to that product in all respects from a vendor of equivalent performance.

D. Where multiple vendors are indicated for a product, any of those vendors meeting the requirements may be submitted.

E.

F. Some product specifications in this Division are of the Acceptable Manufacturer type. Vendors listed as Acceptable Manufacturers are acceptable as vendors. However, the product submitted is subject to review as being fully equivalent in detail to the basis of design.

G. Where multiple vendors are listed with product model numbers, each model and vendor is acceptable, provide all requirements are met. Model numbers are indicated to the extent believe necessary to identify a type and are not necessary completely.

H.

I. The architectural/engineering team has designed the facility using requirements of the Basis of Design equipment. Any substitutions from the basis of design, which will require additional A/E design and/or coordination, shall include the cost of necessary redesign by professionals licensed in the respective disciplines and the approval of the professional of record.

J.

K. Additional submittal reviews beyond the first two (2) for the same product shall incur a cost paid by check to Sigma HN Engineers, PLLC. Payment shall be due upon receipt of submittal review comments from the licensed professional engineer. Cost for additional submittal reviews beyond the first two shall be on a case by case basis depending on the complexity of the items being submitted.

L.

2.36 DRAWINGS AND SPECIFICATIONS

2.37

A. These specifications are accompanied by Drawings. The Drawings and Specifications are complementary each to the other, and what is called for by one shall be as binding as if called for by both.

B.

C. The Drawings are generally diagrammatic. Lay out work at the site to conform to existing conditions; architectural, structural, mechanical, and electrical conditions; to avoid all obstructions; and to conform to details of installation as required. Provide an integrated satisfactorily operating installation. All necessary offsets in piping, fittings, duct, etc., required to avoid interferences between piping, equipment, architectural, and structural elements shall be provided by the Contractor. Provide all necessary routing and offsets to avoid conflict.

D. Verify and arrange that sufficient space is provided for the installation of proposed products and that adequate access will exist for service and maintenance of equipment. For this work, adequate access shall be defined as meaning that service personnel can access and maintain a piece of equipment without having to alter permanent construction. Further, for equipment located above ceilings, access shall be available within 3 feet of ceiling opening or lay-in ceiling.

E.

2.38 COMPLEMENTARY DOCUMENTS

2.39

A. Contract documents are complementary; requirements are not necessarily repetitively stated at each possible subject; consider that a requirement applies wherever applicable.

B.

C. In the event of conflicting requirements in different parts of the Documents, the more expensive shall be presumed to apply, unless the Architect clarifies the requirement in a less expensive manner and waives the more expensive requirement in writing.

D. Since codes and standards are incorporated by reference, a particular conflict may appear in that a reference may use language that implies that a particular requirement in the Construction Documents is waived under the reference. This is not the case, unless specifically so clarified by the Architect. Generally, the specific Drawings and Specifications take precedence over waivers in multi-purpose reference documents.

E.

F. Because of licensure and workmanship requirements, persons performing the work are presumed to be familiar with applicable codes, ordinances, laws, regulations and standards. Therefore, details of materials, methods, arrangements and size contained in such publications are not necessarily replicated in the Contract Documents. This in no way deletes the requirement of the Contractor to comply. In the event of an apparent conflict between such publications and the Contract Documents, request clarification from the Architect prior to construction.

G.

2.40 REGULATORY MEETINGS

2.41

A. Comply with laws, rules and regulations, permit requirements, and ordinances. It is intended that the work of the Division be estimated and performed under the supervision of licensed master craftsman who are familiar with these requirements, whether illustrated or specifically detailed in the particular Contract Documents of this project or not. Therefore, regulatory requirements may not be so illustrated or detailed.

B.

2.42 PROTECTION

2.43

A. All work, equipment and materials shall be protected at all times to prevent damage or breakage either in transit, storage, installation or testing. All openings shall be closed with caps or plugs during installation. All materials and equipment shall be covered and protected against dirt, water, chemicals or mechanical injury.

B.

2.44 CUTTING AND PATCHING

2.45

A. The work shall be carefully laid out in advance and the exact size and locations of openings arranged.

B.

2.46 VIBRATION AND NOISE

2.47

A. Objectionable vibration and/or noise will not be tolerated.

B.

2.48 DEMOLITION

2.49

A. Coordinate with other divisions before commencing work.

B.

2.50 RECORD DOCUMENTS

2.51

A. Drawings: The Contractor shall maintain and update daily a set of “blueline” prints in the Field Office for the sole purpose of recording “installed” conditions. Revise the drawings to reflect as-built conditions, including all addenda, change orders, final shop drawing reviews, and field routing. Underground utilities shall be dimensionally located relative to readily accessible and identifiable permanent reference points, with accurate slope and elevation indicated. Submit prints for review. Revise, certify accuracy, and provide two final sets to the Architect.

B.

C. Owner’s Manual: Prior to final acceptance, provide two bound volumes to the Architect. Index by subject. Include corrected submittals and shop drawings that reflect final review comments; installation, operation and maintenance instructions, parts lists, wiring diagrams, and piping diagrams; warranties.

D.

2.52 INSPECTION, OBSERVATION AND TESTING

2.53

A. Cooperate with Architect’s representative and authorities having jurisdiction. Provide complete access to the work at reasonable times.

B.

C. Cover-up: Prior to covering up work, or conducting observed tests, request observation as appropriate. Provide adequate advance notice defined as a minimum of five working days. In some cases the Architect’s representative may waive observation; otherwise arrange for observed construction and testing prior to cover-up. Should the minimum required notice not be provided and the contractor covers up work requiring observation, such work shall be uncovered at contractor’s expense.

D. Pre-Testing: Self-inspect, pre-test, and remedy work prior to performing observed test.

E. Sectional Work: In circumstances where a requirement for phased construction or other considerations dictate sectional construction and/or testing, notify the Architect when construction begins on the first section of a system, and when the first section will be ready for observed testing, as well as subsequent sections. Test in the largest practical sections.

F.

2.54 WORK PERFORMED UNDER OTHER DIVISIONS

2.55

A. Refer to Division 2 for piped utilities beyond 5 feet from the building.

B.

C. Refer to Division 16 for power wiring systems external to equipment and control panels; starters in motor centers; safety switches not integral to equipment or starters provided under Division 15.

D. Refer to Division 14 for kitchen, laboratory, medical and like equipment.

E.

2.56 REFERNCE TO OTHER DIVISIONS

2.57

A. Refer to Division 16 for additional material requirements of electrical components provided under Division 15, such as loose starters, wiring and devices integral to equipment.

B.

C. Refer to Division 2 for additional requirements governing excavation and backfill, supplemental to the requirements stated in this Division 15.

D. Comply with all requirements applicable to work required under this Division.

E.

2.58 TESTING SERVICES

2.59

A. Additional Testing: In addition to any specified testing, the Architect may cause additional testing to be performed by an independent testing laboratory or any other qualified party. If such testing reveals deficient work by the Contractor, the Contractor shall pay for both the testing and remedial work. If such testing does not reveal deficient work by the Contractor, the Owner shall pay for the testing and the cost of repairing any damage caused by such testing.

B.

C. Specified Testing Services: If independent testing services are specified regarding work under this Division, cooperate fully with the testing agency. Provide access to the work. Provide test holes and taps necessary. Remove work that is not tested on site, deliver to testing agency, and reinstall if undamaged; replace if damaged. Provide utilities, operational capability, and facilities for on-site testing as necessary.

D.

2.60 WORK BY OWNER

2.61

A. The owner will award contracts on work which includes:

1. None.
2.

1.29 OWNER FURNISHED PRODUCTS

A. Products furnished to the site and paid for by the Owner.

1. None.
2.
3.

END OF SECTION 15000

# SECTION 15050 - BASIC MECHANICAL MATERIALS AND METHODS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:
   1. Piping materials and installation instructions common to most piping systems.
   2. Transition fittings.
   3. Dielectric fittings.
   4. Mechanical sleeve seals.
   5. Sleeves.
   6. Escutcheons.
   7. Grout.
   8. Equipment installation requirements common to equipment sections.
   9. Painting and finishing.
   10. Concrete bases.
   11. Supports and anchorages.

### 1.3 DEFINITIONS

A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.

B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.

C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.

E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

F. The following are industry abbreviations for plastic materials:
   1. PE: Polyethylene plastic.

2. PVC: Polyvinyl chloride plastic.

G. The following are industry abbreviations for rubber materials:
1. EPDM: Ethylene-propylene-diene terpolymer rubber.
2. NBR: Acrylonitrile-butadiene rubber.

## 1.4 SUBMITTALS

A. Product Data: For the following:
1. Transition fittings.
2. Dielectric fittings.
3. Mechanical sleeve seals.
4. Escutcheons.

B. Welding certificates.

## 1.5 QUALITY ASSURANCE

A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."

B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.

C. Electrical Characteristics for Mechanical Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified, at no cost to the Owner. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.

B. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

## 1.7 COORDINATION

A. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for mechanical installations.

B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

C. Coordinate requirements for access panels and doors for mechanical items requiring access that are concealed behind finished surfaces. Access panels and doors are specified in Division 8 Section "Access Doors and Frames."

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
   1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

### 2.2 PIPE, TUBE, AND FITTINGS

A. Refer to individual Division 15 piping Sections for pipe, tube, and fitting materials and joining methods.

B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

### 2.3 JOINING MATERIALS

A. Refer to individual Division 15 piping Sections for special joining materials not listed below.

B. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
   1. ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
      a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
      b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
   2. AWWA C110, rubber, flat face, 1/8 inch (3.2 mm) thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.

C. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

D. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

E. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.

F. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.

G. Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

H. Solvent Cements for Joining Plastic Piping:
   1. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
   2. PVC to ABS Piping Transition: ASTM D 3138.

## 2.4 TRANSITION FITTINGS

A. AWWA Transition Couplings: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.
   1. Available Manufacturers:
      a. Cascade Waterworks Mfg. Co.
      b. Dresser Industries, Inc.; DMD Div.
      c. JCM Industries.
      d. Smith-Blair, Inc.
   2. Underground Piping NPS 1-1/2 (DN 40) and Smaller: Manufactured fitting or coupling.
   3. Underground Piping NPS 2 (DN 50) and Larger: AWWA C219, metal sleeve-type coupling.
   4. Aboveground Pressure Piping: Pipe fitting.

B. Plastic-to-Metal Transition Fittings: PVC one-piece fitting with manufacturer's Schedule 80 equivalent dimensions; one end with threaded brass insert, and one solvent-cement-joint end.
   1. Available Manufacturers:
      a. Eslon Thermoplastics.

C. Plastic-to-Metal Transition Adaptors: One-piece fitting with manufacturer's SDR 11 equivalent dimensions; one end with threaded brass insert, and one solvent-cement-joint end.
   1. Available Manufacturers:
      a. Thompson Plastics, Inc.

D. Plastic-to-Metal Transition Unions: MSS SP-107, PVC four-part union. Include brass end, solvent-cement-joint end, rubber O-ring, and union nut.
   1. Available Manufacturers:
      a. NIBCO INC.

E. Flexible Transition Couplings for Underground Nonpressure Drainage Piping: ASTM C 1173 with elastomeric sleeve, ends same size as piping to be joined, and corrosion-resistant metal band on each end.
   1. Available Manufacturers:
      a. Cascade Waterworks Mfg. Co.
      b. Fernco, Inc.
      c. Mission Rubber Company.

2.5 DIELECTRIC FITTINGS

A. Description: Combination fitting of copper alloy and ferrous materials with threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.

B. Insulating Material: Suitable for system fluid, pressure, and temperature.

C. Dielectric Unions: Factory-fabricated, union assembly, for 250-psig (1725-kPa) minimum working pressure at 180 deg F (82 deg C).
   1. Available Manufacturers:
      a. Capitol Manufacturing Co.
      b. Central Plastics Company.
      c. Eclipse, Inc.
      d. Watts Industries, Inc.; Water Products Div.
      e. Zurn Industries, Inc.; Wilkins Div.

D. Dielectric Flanges: Factory-fabricated, companion-flange assembly, for 150- or 300-psig (1035- or 2070-kPa) minimum working pressure as required to suit system pressures.
   1. Available Manufacturers:
      a. Capitol Manufacturing Co.
      b. Central Plastics Company.
      c. Epco Sales, Inc.
      d. Watts Industries, Inc.; Water Products Div.

E. Dielectric-Flange Kits: Companion-flange assembly for field assembly. Include flanges, full-face- or ring-type neoprene or phenolic gasket, phenolic or polyethylene bolt sleeves, phenolic washers, and steel backing washers.
   1. Available Manufacturers:
      a. Advance Products & Systems, Inc.
      b. Calpico, Inc.
      c. Central Plastics Company.
      d. Pipeline Seal and Insulator, Inc.
   2. Separate companion flanges and steel bolts and nuts shall have 150- or 300-psig (1035- or 2070-kPa) minimum working pressure where required to suit system pressures.

F. Dielectric Couplings: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining; threaded ends; and 300-psig (2070-kPa) minimum working pressure at 225 deg F (107 deg C).
   1. Available Manufacturers:
      a. Calpico, Inc.
      b. Lochinvar Corp.

G. Dielectric Nipples: Electroplated steel nipple with inert and noncorrosive, thermoplastic lining; plain, threaded, or grooved ends; and 300-psig (2070-kPa) minimum working pressure at 225 deg F (107 deg C).
   1. Available Manufacturers:
      a. Perfection Corp.
      b. Precision Plumbing Products, Inc.
      c. Sioux Chief Manufacturing Co., Inc.

d. Victaulic Co. of America.

## 2.6 MECHANICAL SLEEVE SEALS

A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.
   1. Available Manufacturers:
      a. Advance Products & Systems, Inc.
      b. Calpico, Inc.
      c. Metraflex Co.
      d. Pipeline Seal and Insulator, Inc.
   2. Sealing Elements: EPDM interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
   3. Pressure Plates: Stainless steel. Include two for each sealing element.
   4. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

## 2.7 SLEEVES

A. Galvanized-Steel Sheet: 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint.

B. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.

C. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

D. Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing.
   1. Underdeck Clamp: Clamping ring with set screws.

E. Molded PVC: Permanent, with nailing flange for attaching to wooden forms.

F. PVC Pipe: ASTM D 1785, Schedule 40.

G. Molded PE: Reusable, PE, tapered-cup shaped, and smooth-outer surface with nailing flange for attaching to wooden forms.

## 2.8 ESCUTCHEONS

A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening.

B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish.

C. One-Piece, Cast-Brass Type: With set screw.
   1. Finish: Polished chrome-plated.

D. Split-Casting, Cast-Brass Type: With concealed hinge and set screw.
   1. Finish: Polished chrome-plated.

E. One-Piece, Stamped-Steel Type: With set screw and chrome-plated finish.

F. Split-Plate, Stamped-Steel Type: With concealed hinge, set screw, and chrome-plated finish.

G. One-Piece, Floor-Plate Type: Cast-iron floor plate.

H. Split-Casting, Floor-Plate Type: Cast brass with concealed hinge and set screw.

## 2.9 GROUT

A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
   1. Characteristics: Post-hardening, volume-adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
   2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
   3. Packaging: Premixed and factory packaged.

# PART 3 - EXECUTION

## 3.1 PIPING SYSTEMS - COMMON REQUIREMENTS

A. Install piping according to the following requirements and Division 15 Sections specifying piping systems.

B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.

C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

F. Install piping to permit valve servicing.

G. Install piping at indicated slopes.

H. Install piping free of sags and bends.

I. Install fittings for changes in direction and branch connections.

J. Install piping to allow application of insulation.

K. Select system components with pressure rating equal to or greater than system operating pressure.

L. Install escutcheons for penetrations of walls, ceilings, and floors according to the following:
   1. New Piping:
      a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
      b. Chrome-Plated Piping: One-piece, cast-brass type with polished chrome-plated finish.
      c. Insulated Piping: One-piece, stamped-steel type with spring clips.
      d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished chrome-plated finish.
      e. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished chrome-plated finish.
      f. Bare Piping in Unfinished Service Spaces: One-piece, stamped-steel type with concealed hinge and set screw.
      g. Bare Piping in Equipment Rooms: One-piece, stamped-steel type with set screw.
      h. Bare Piping at Floor Penetrations in Equipment Rooms: One-piece, floor-plate type.

M. Sleeves are not required for core-drilled holes.

N. Permanent sleeves are not required for holes formed by removable PE sleeves.

O. Install sleeves for pipes passing through concrete and masonry walls and concrete floor and roof slabs.

P. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor and roof slabs.
   1. Cut sleeves to length for mounting flush with both surfaces.
      a. Exception: Extend sleeves installed in floors of mechanical equipment areas or other wet areas 2 inches (50 mm) above finished floor level. Extend cast-iron sleeve fittings below floor slab as required to secure clamping ring if ring is specified.
   2. Install sleeves in new walls and slabs as new walls and slabs are constructed.
   3. Install sleeves that are large enough to provide 1/4-inch (6.4-mm) annular clear space between sleeve and pipe or pipe insulation. Use the following sleeve materials:
      a. Steel Pipe Sleeves: For pipes smaller than NPS 6 (DN 150).
      b. Steel Sheet Sleeves: For pipes NPS 6 (DN 150) and larger, penetrating gypsum-board partitions.
      c. Stack Sleeve Fittings: For pipes penetrating floors with membrane waterproofing. Secure flashing between clamping flanges. Install section of cast-iron soil pipe to extend sleeve to 2 inches (50 mm) above finished floor level. Refer to Division 7 Section "Sheet Metal Flashing and Trim" for flashing.

1) Seal space outside of sleeve fittings with grout.

4. Except for underground wall penetrations, seal annular space between sleeve and pipe or pipe insulation, using joint sealants appropriate for size, depth, and location of joint. Refer to Division 7 Section "Joint Sealants" for materials and installation.

Q. Aboveground, Exterior-Wall Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

1. Install steel pipe for sleeves smaller than 6 inches (150 mm) in diameter.
2. Install cast-iron "wall pipes" for sleeves 6 inches (150 mm) and larger in diameter.
3. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

R. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Refer to Division 7 Section "Through-Penetration Firestop Systems" for materials.

S. Verify final equipment locations for roughing-in.

T. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.

## 3.2 PIPING JOINT CONSTRUCTION

A. Join pipe and fittings according to the following requirements and Division 15 Sections specifying piping systems.

B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.

E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.

F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.

2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

G. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.

H. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

I. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. ABS Piping: Join according to ASTM D 2235 and ASTM D 2661 Appendixes.
3. PVC Pressure Piping: Join schedule number ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
4. PVC Nonpressure Piping: Join according to ASTM D 2855.

J. Plastic Pressure Piping Gasketed Joints: Join according to ASTM D 3139.

K. Plastic Nonpressure Piping Gasketed Joints: Join according to ASTM D 3212.

L. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
1. Plain-End Pipe and Fittings: Use butt fusion.
2. Plain-End Pipe and Socket Fittings: Use socket fusion.

## 3.3 PIPING CONNECTIONS

A. Make connections according to the following, unless otherwise indicated:
1. Install unions, in piping NPS 2 (DN 50) and smaller, adjacent to each valve and at final connection to each piece of equipment.
2. Install flanges, in piping NPS 2-1/2 (DN 65) and larger, adjacent to flanged valves and at final connection to each piece of equipment.
3. Dry Piping Systems: Install dielectric unions and flanges to connect piping materials of dissimilar metals.
4. Wet Piping Systems: Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals.

## 3.4 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.

B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.

C. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Alternation of permanent construction is not acceptable. For equipment above hard ceilings, provide access panels. For all equipment above ceilings, access shall be available within three feet of ceiling opening or lay-in tile. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.

D. Install equipment to allow right of way for piping installed at required slope.

## 3.5 PAINTING

A. Painting of mechanical systems, equipment, and components is specified in Division 9 Section "Painting."

B. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

## 3.6 CONCRETE BASES

A. Concrete Bases: Anchor equipment to concrete base according to equipment manufacturer's written instructions and according to seismic codes at Project.
   1. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger in both directions than supported unit.
   2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around the full perimeter of the base.
   3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
   4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   5. Install anchor bolts to elevations required for proper attachment to supported equipment.
   6. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
   7. Use 3000-psi, 28-day compressive-strength concrete and reinforcement as specified in Division 3 Section "Cast-in-Place Concrete."
   8. Provide 6” high bases for air handling units and 4” bases for other equipment.

## 3.7 ERECTION OF METAL SUPPORTS AND ANCHORAGES

A. Refer to Division 5 Section "Metal Fabrications" for structural steel.

B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.

C. Field Welding: Comply with AWS D1.1.

## 3.8 ERECTION OF WOOD SUPPORTS AND ANCHORAGES

A. Cut, fit, and place wood grounds, nailers, blocking, and anchorages to support, and anchor mechanical materials and equipment.

B. Select fastener sizes that will not penetrate members if opposite side will be exposed to view or will receive finish materials. Tighten connections between members. Install fasteners without splitting wood members.

C. Attach to substrates as required to support applied loads.

## 3.9 GROUTING

A. Mix and install grout for mechanical equipment base bearing surfaces, pump and other equipment base plates, and anchors.

B. Clean surfaces that will come into contact with grout.

C. Provide forms as required for placement of grout.

D. Avoid air entrapment during placement of grout.

E. Place grout, completely filling equipment bases.

F. Place grout on concrete bases and provide smooth bearing surface for equipment.

G. Place grout around anchors.

H. Cure placed grout.

END OF SECTION 15050

# SECTION 15060 - HANGERS AND SUPPORTS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following hangers and supports for mechanical system piping and equipment:
   1. Steel pipe hangers and supports.
   2. Trapeze pipe hangers.
   3. Metal framing systems.
   4. Thermal-hanger shield inserts.
   5. Fastener systems.
   6. Equipment supports.

B. Related Sections include the following:
   1. Division 5 Section "Metal Fabrications" for structural-steel shapes and plates for trapeze hangers for pipe and equipment supports.
   2. Division 15 Section "Mechanical Vibration and Seismic Controls" for vibration isolation devices.
   3. Division 15 Section(s) "Metal Ducts" for duct hangers and supports.

### 1.3 DEFINITIONS

A. MSS: Manufacturers Standardization Society for The Valve and Fittings Industry Inc.

B. Terminology: As defined in MSS SP-90, "Guidelines on Terminology for Pipe Hangers and Supports."

### 1.4 PERFORMANCE REQUIREMENTS

A. Design supports for multiple pipes capable of supporting combined weight of supported systems, system contents, and test water.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

1.5 SUBMITTALS

A. Product Data: For the following:
   1. Steel pipe hangers and supports.
   2. Thermal-hanger shield inserts.
   3. Powder-actuated fastener systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:
   1. Trapeze pipe hangers. Include Product Data for components.
   2. Metal framing systems. Include Product Data for components.
   3. Equipment supports.

C. Welding certificates.

1.6 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."

PART 2 - PRODUCTS

2.1 STEEL PIPE HANGERS AND SUPPORTS

A. Description: MSS SP-58, Types 1 through 58, factory-fabricated components. Refer to Part 3 "Hanger and Support Applications" Article for where to use specific hanger and support types.

B. Available Manufacturers:
   1. B-Line Systems, Inc.; a division of Cooper Industries.
   2. ERICO/Michigan Hanger Co.
   3. Globe Pipe Hanger Products, Inc.
   4. Grinnell Corp.
   5. National Pipe Hanger Corporation.
   6. PHD Manufacturing, Inc.
   7. PHS Industries, Inc.

C. Galvanized, Metallic Coatings: Pregalvanized or hot dipped.

D. Nonmetallic Coatings: Plastic coating, jacket, or liner.

E. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion for support of bearing surface of piping.

## 2.2 TRAPEZE PIPE HANGERS

A. Description: MSS SP-69, Type 59, shop- or field-fabricated pipe-support assembly made from structural-steel shapes with MSS SP-58 hanger rods, nuts, saddles, and U-bolts.

## 2.3 THERMAL-HANGER SHIELD INSERTS

A. Description: 100-psig- (690-kPa-) minimum, compressive-strength insulation insert encased in sheet metal shield.

B. Insulation-Insert Material for Cold Piping: ASTM C 552, Type II cellular glass with vapor barrier.

C. Insulation-Insert Material for Hot Piping: ASTM C 552, Type II cellular glass.

D. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.

E. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.

F. Insert Length: Extend 2 inches (50 mm) beyond sheet metal shield for piping operating below ambient air temperature.

## 2.4 FASTENER SYSTEMS

A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

B. Mechanical-Expansion Anchors: Insert-wedge-type zinc-coated steel, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

## 2.5 EQUIPMENT SUPPORTS

A. Description: Welded, shop- or field-fabricated equipment support made from structural-steel shapes.

## 2.6 MISCELLANEOUS MATERIALS

A. Structural Steel: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
   1. Properties: Nonstaining, noncorrosive, and nongaseous.
   2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.

PART 3 - EXECUTION

3.1 HANGER AND SUPPORT APPLICATIONS

A. Specific hanger and support requirements are specified in Sections specifying piping systems and equipment.

B. Comply with MSS SP-69 for pipe hanger selections and applications that are not specified in piping system Sections.

C. Use hangers and supports with galvanized, metallic coatings for piping and equipment that will not have field-applied finish.

D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.

E. Use padded hangers for piping that is subject to scratching.

F. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
   1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated stationary pipes, NPS 1/2 to NPS 30 (DN 15 to DN 750).
   2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of 120 to 450 deg F (49 to 232 deg C) pipes, NPS 4 to NPS 16 (DN 100 to DN 400), requiring up to 4 inches (100 mm) of insulation.
   3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes, NPS 3/4 to NPS 24 (DN 20 to DN 600), requiring clamp flexibility and up to 4 inches (100 mm) of insulation.
   4. Steel Pipe Clamps (MSS Type 4): For suspension of cold and hot pipes, NPS 1/2 to NPS 24 (DN 15 to DN 600), if little or no insulation is required.
   5. Pipe Hangers (MSS Type 5): For suspension of pipes, NPS 1/2 to NPS 4 (DN 15 to DN 100), to allow off-center closure for hanger installation before pipe erection.
   6. Adjustable Swivel Split- or Solid-Ring Hangers (MSS Type 6): For suspension of noninsulated stationary pipes, NPS 3/4 to NPS 8 (DN 20 to DN 200).
   7. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8 (DN 15 to DN 200).
   8. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 8 (DN 15 to DN 200).
   9. Adjustable Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated stationary pipes, NPS 1/2 to NPS 2 (DN 15 to DN 50).
   10. Split Pipe-Ring with or without Turnbuckle-Adjustment Hangers (MSS Type 11): For suspension of noninsulated stationary pipes, NPS 3/8 to NPS 8 (DN 10 to DN 200).
   11. Extension Hinged or 2-Bolt Split Pipe Clamps (MSS Type 12): For suspension of noninsulated stationary pipes, NPS 3/8 to NPS 3 (DN 10 to DN 80).
   12. U-Bolts (MSS Type 24): For support of heavy pipes, NPS 1/2 to NPS 30 (DN 15 to DN 750).
   13. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.

14. Pipe Saddle Supports (MSS Type 36): For support of pipes, NPS 4 to NPS 36 (DN 100 to DN 900), with steel pipe base stanchion support and cast-iron floor flange.
15. Pipe Stanchion Saddles (MSS Type 37): For support of pipes, NPS 4 to NPS 36 (DN 100 to DN 900), with steel pipe base stanchion support and cast-iron floor flange and with U-bolt to retain pipe.
16. Adjustable Pipe Saddle Supports (MSS Type 38): For stanchion-type support for pipes, NPS 2-1/2 to NPS 36 (DN 65 to DN 900), if vertical adjustment is required, with steel pipe base stanchion support and cast-iron floor flange.
17. Single Pipe Rolls (MSS Type 41): For suspension of pipes, NPS 1 to NPS 30 (DN 25 to DN 750), from 2 rods if longitudinal movement caused by expansion and contraction might occur.
18. Adjustable Roller Hangers (MSS Type 43): For suspension of pipes, NPS 2-1/2 to NPS 20 (DN 65 to DN 500), from single rod if horizontal movement caused by expansion and contraction might occur.
19. Complete Pipe Rolls (MSS Type 44): For support of pipes, NPS 2 to NPS 42 (DN 50 to DN 1050), if longitudinal movement caused by expansion and contraction might occur but vertical adjustment is not necessary.
20. Pipe Roll and Plate Units (MSS Type 45): For support of pipes, NPS 2 to NPS 24 (DN 50 to DN 600), if small horizontal movement caused by expansion and contraction might occur and vertical adjustment is not necessary.
21. Adjustable Pipe Roll and Base Units (MSS Type 46): For support of pipes, NPS 2 to NPS 30 (DN 50 to DN 750), if vertical and lateral adjustment during installation might be required in addition to expansion and contraction.

G. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers, NPS 3/4 to NPS 20 (DN 20 to DN 500).
2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers, NPS 3/4 to NPS 20 (DN 20 to DN 500), if longer ends are required for riser clamps.

H. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches (150 mm) for heavy loads.
2. Steel Clevises (MSS Type 14): For 120 to 450 deg F (49 to 232 deg C) piping installations.
3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
4. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
5. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F (49 to 232 deg C) piping installations.

I. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction to attach to top flange of structural shape.

3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
6. C-Clamps (MSS Type 23): For structural shapes.
7. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
8. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
9. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
10. Linked-Steel Clamps with Eye Nuts (MSS Type 29): For attaching to bottom of steel I-beams for heavy loads, with link extensions.
11. Malleable Beam Clamps with Extension Pieces (MSS Type 30): For attaching to structural steel.
12. Welded-Steel Brackets: For support of pipes from below, or for suspending from above by using clip and rod. Use one of the following for indicated loads:
    a. Light (MSS Type 31): 750 lb (340 kg).
    b. Medium (MSS Type 32): 1500 lb (680 kg).
    c. Heavy (MSS Type 33): 3000 lb (1360 kg).
13. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
14. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
15. Horizontal Travelers (MSS Type 58): For supporting piping systems subject to linear horizontal movement where headroom is limited.

J. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.

K. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Restraint-Control Devices (MSS Type 47): Where indicated to control piping movement.
2. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches (32 mm).
3. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41 roll hanger with springs.
4. Spring Sway Braces (MSS Type 50): To retard sway, shock, vibration, or thermal expansion in piping systems.
5. Variable-Spring Hangers (MSS Type 51): Preset to indicated load and limit variability factor to 25 percent to absorb expansion and contraction of piping system from hanger.
6. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load and limit variability factor to 25 percent to absorb expansion and contraction of piping system from base support.

7. Variable-Spring Trapeze Hangers (MSS Type 53): Preset to indicated load and limit variability factor to 25 percent to absorb expansion and contraction of piping system from trapeze support.
8. Constant Supports: For critical piping stress and if necessary to avoid transfer of stress from one support to another support, critical terminal, or connected equipment. Include auxiliary stops for erection, hydrostatic test, and load-adjustment capability. These supports include the following types:
    a. Horizontal (MSS Type 54): Mounted horizontally.
    b. Vertical (MSS Type 55): Mounted vertically.
    c. Trapeze (MSS Type 56): Two vertical-type supports and one trapeze member.

L. Comply with MSS SP-69 for trapeze pipe hanger selections and applications that are not specified in piping system Sections.

M. Comply with MFMA-102 for metal framing system selections and applications that are not specified in piping system Sections.

N. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.

O. Use pipe positioning systems in pipe spaces behind plumbing fixtures to support supply and waste piping for plumbing fixtures.

## 3.2 HANGER AND SUPPORT INSTALLATION

A. Steel Pipe Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.

B. Trapeze Pipe Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping and support together on field-fabricated trapeze pipe hangers.
1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified above for individual pipe hangers.
2. Field fabricate from ASTM A 36/A 36M, steel shapes selected for loads being supported. Weld steel according to AWS D1.1.

C. Metal Framing System Installation: Arrange for grouping of parallel runs of piping and support together on field-assembled metal framing systems.

D. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.

E. Fastener System Installation:
1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches (100 mm) thick in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.

2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.

F. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.

G. Equipment Support Installation: Fabricate from welded-structural-steel shapes.

H. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

I. Install lateral bracing with pipe hangers and supports to prevent swaying.

J. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.

K. Load Distribution: Install hangers and supports so piping live and dead loads and stresses from movement will not be transmitted to connected equipment.

L. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so maximum pipe deflections allowed by ASME B31.1 (for power piping) and ASME B31.9 (for building services piping) are not exceeded.

M. Insulated Piping: Comply with the following:
1. Attach clamps and spacers to piping.
   a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
   b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
   c. Do not exceed pipe stress limits according to ASME B31.1 for power piping and ASME B31.9 for building services piping.
2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
   a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 (DN 100) and larger if pipe is installed on rollers.
3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
   a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 (DN 100) and larger if pipe is installed on rollers.
4. Shield Dimensions for Pipe: Not less than the following:
   a. NPS 1/4 to NPS 3-1/2 (DN 8 to DN 90): 12 inches (305 mm) long and 0.048 inch (1.22 mm) thick.
   b. NPS 4 (DN 100): 12 inches (305 mm) long and 0.06 inch (1.52 mm) thick.
   c. NPS 5 and NPS 6 (DN 125 and DN 150): 18 inches (457 mm) long and 0.06 inch (1.52 mm) thick.

d. NPS 8 to NPS 14 (DN 200 to DN 350): 24 inches (610 mm) long and 0.075 inch (1.91 mm) thick.
e. NPS 16 to NPS 24 (DN 400 to DN 600): 24 inches (610 mm) long and 0.105 inch (2.67 mm) thick.

5. Pipes NPS 8 (DN 200) and Larger: Include wood inserts.
6. Insert Material: Length at least as long as protective shield.
7. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

## 3.3 EQUIPMENT SUPPORTS

A. Fabricate structural-steel stands to suspend equipment from structure overhead or to support equipment above floor.

B. Grouting: Place grout under supports for equipment and make smooth bearing surface.

C. Provide lateral bracing, to prevent swaying, for equipment supports.

## 3.4 METAL FABRICATIONS

A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.

B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.

C. Field Welding: Comply with AWS D1.1 procedures for shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work, and with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. Finish welds at exposed connections so no roughness shows after finishing and contours of welded surfaces match adjacent contours.

## 3.5 ADJUSTING

A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

## 3.6 PAINTING

A. Touch Up: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 15060

# SECTION 15071 - MECHANICAL VIBRATION CONTROLS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:
   1. Elastomeric isolation pads.
   2. Spring hangers.

### 1.3 SUBMITTALS

A. Product Data: Include load deflection curves for each vibration isolation device.

B. Shop Drawings: Signed and sealed by a qualified professional engineer. Include the following:
   1. Design Calculations: Calculate requirements for selecting vibration isolators and for designing vibration isolation bases.

C. Welding certificates.

### 1.4 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into base. Concrete, reinforcement, and formwork requirements are specified in Division 3.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 7 Section "Roof Accessories."

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

## 2.2 VIBRATION ISOLATORS

A. Available Manufacturers:

B. Manufacturers:
   1. Amber/Booth Company, Inc.
   2. Kinetics Noise Control, Inc.
   3. Mason Industries, Inc.
   4. Vibro-Acoustics.

C. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.
   1. Material: Standard neoprene.
   2. Durometer Rating: As required to load in upper halff of stress range.
   3. Number of Layers: As recommended by manufacturer.

D. Spring Hangers: Combination coil-spring and elastomeric-insert hanger with spring and insert in compression.
   1. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.
   2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
   3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
   4. Lateral Stiffness: More than 80 percent of the rated vertical stiffness.
   5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
   6. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.

## 2.3 FACTORY FINISHES

A. Manufacturer's standard prime-coat finish ready for field painting.

B. Finish: Manufacturer's standard paint applied to factory-assembled and -tested equipment before shipping.
   1. Powder coating on springs and housings.
   2. All hardware shall be electro-galvanized. Hot-dip galvanize metal components for exterior use.
   3. Baked enamel for metal components on isolators for interior use.
   4. Color-code or otherwise mark vibration isolation and seismic-control devices to indicate capacity range.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine areas and equipment to receive vibration isolation for compliance with requirements, installation tolerances, and other conditions affecting performance.

B. Examine roughing-in of reinforcement and cast-in-place anchors to verify actual locations before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

A. Install roof curbs, equipment supports, and roof penetrations as specified in Division 7 Section "Roof Accessories."

B. Install steel angles or channel, sized to prevent buckling, clamped with ductile-iron clamps to hanger rods for trapeze and individual pipe hangers. At trapeze anchor locations, shackle piping to trapeze. Requirements apply equally to hanging equipment. Do not weld angles to rods.

C. Install resilient bolt isolation washers on equipment anchor bolts.

### 3.3 EQUIPMENT BASES

A. Concrete Bases: Anchor equipment to concrete base according to supported equipment manufacturer's written instructions.
   1. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base and anchor into structural concrete floor.
   2. Place and secure anchorage devices. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   3. Install anchor bolts to elevations required for proper attachment to supported equipment.
   4. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
   5. Cast-in-place concrete materials and placement requirements are specified in Division 3.

### 3.4 ADJUSTING

A. Adjust isolators after piping systems have been filled and equipment is at operating weight.

B. Adjust active height of spring isolators.

C. Torque anchor bolts according to equipment manufacturer's written recommendations to resist seismic forces.

## 3.5 CLEANING

A. After completing equipment installation, inspect vibration isolation and seismic-control devices. Remove paint splatters and other spots, dirt, and debris.

## 3.6 VIBRATION ISOLATOR SCHEDULE

A. Supported or Suspended Equipment: AHU, Condensing Units.
   1. Equipment Location: Floor.
   2. Isolator Type: Elastomeric Isolation Pads.

B. Supported or Suspended Equipment: Fans
   1. Equipment Location: Suspended.
   2. Isolator Type: Spring Hangers.

END OF SECTION 15071

# SECTION 15075 - MECHANICAL IDENTIFICATION

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following mechanical identification materials and their installation:
   1. Equipment nameplates.
   2. Equipment markers.
   3. Equipment signs.
   4. Access panel and door markers.
   5. Pipe markers.
   6. Duct markers.
   7. Valve tags.
   8. Valve schedules.
   9. Warning tags.

### 1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Valve numbering scheme.

C. Valve Schedules: For each piping system. Furnish extra copies (in addition to mounted copies) to include in maintenance manuals.

### 1.4 QUALITY ASSURANCE

A. ASME Compliance: Comply with ASME A13.1, "Scheme for the Identification of Piping Systems," for letter size, length of color field, colors, and viewing angles of identification devices for piping.

### 1.5 COORDINATION

A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

B. Coordinate installation of identifying devices with location of access panels and doors.

C. Install identifying devices before installing acoustical ceilings and similar concealment.

## PART 2 - PRODUCTS

### 2.1 EQUIPMENT IDENTIFICATION DEVICES

A. Equipment Nameplates: Metal, with data engraved or stamped, for permanent attachment on equipment.
   1. Data:
      a. Manufacturer, product name, model number, and serial number.
      b. Capacity, operating and power characteristics, and essential data.
      c. Labels of tested compliances.
   2. Location: Accessible and visible.
   3. Fasteners: As required to mount on equipment.

B. Equipment Markers: Engraved, color-coded laminated plastic. Include contact-type, permanent adhesive.
   1. Terminology: Match schedules as closely as possible.
   2. Data:
      a. Name and plan number.
      b. Equipment service.
      c. Design capacity.
      d. Other design parameters such as pressure drop, entering and leaving conditions, and speed.
   3. Size: 2-1/2 by 4 inches (64 by 100 mm) for control devices, dampers, and valves; 4-1/2 by 6 inches (115 by 150 mm) for equipment.

C. Equipment Signs: ASTM D 709, Type I, cellulose, paper-base, phenolic-resin-laminate engraving stock; Grade ES-2, black surface, black phenolic core, with white melamine subcore, unless otherwise indicated. Fabricate in sizes required for message. Provide holes for mechanical fastening.
   1. Data: Instructions for operation of equipment and for safety procedures.
   2. Engraving: Manufacturer's standard letter style, of sizes and with terms to match equipment identification.
   3. Thickness: 1/16 inch (1.6 mm) for units up to 20 sq. in. (130 sq. cm) or 8 inches (200 mm) in length, and 1/8 inch (3.2 mm) for larger units.
   4. Fasteners: Self-tapping, stainless-steel screws or contact-type, permanent adhesive.

D. Access Panel and Door Markers: 1/16-inch- (1.6-mm-) thick, engraved laminated plastic, with abbreviated terms and numbers corresponding to identification. Provide 1/8-inch (3.2-mm) center hole for attachment.
   1. Fasteners: Self-tapping, stainless-steel screws or contact-type, permanent adhesive.

## 2.2 PIPING IDENTIFICATION DEVICES

A. Manufactured Pipe Markers, General: Preprinted, color-coded, with lettering indicating service, and showing direction of flow.
   1. Colors: Comply with ASME A13.1, unless otherwise indicated.
   2. Lettering: Use piping system terms indicated and abbreviate only as necessary for each application length.
   3. Pipes with OD, Including Insulation, Less Than 6 Inches (150 mm): Full-band pipe markers extending 360 degrees around pipe at each location.
   4. Pipes with OD, Including Insulation, 6 Inches (150 mm) and Larger: Either full-band or strip-type pipe markers at least three times letter height and of length required for label.
   5. Arrows: Integral with piping system service lettering to accommodate both directions; or as separate unit on each pipe marker to indicate direction of flow.

B. Pretensioned Pipe Markers: Precoiled semirigid plastic formed to cover full circumference of pipe and to attach to pipe without adhesive.

C. Shaped Pipe Markers: Preformed semirigid plastic formed to partially cover circumference of pipe and to attach to pipe with mechanical fasteners that do not penetrate insulation vapor barrier.

D. Self-Adhesive Pipe Markers: Plastic with pressure-sensitive, permanent-type, self-adhesive back.

E. Plastic Tape: Continuously printed, vinyl tape at least 3 mils (0.08 mm) thick with pressure-sensitive, permanent-type, self-adhesive back.
   1. Width for Markers on Pipes with OD, Including Insulation, Less Than 6 Inches (150 mm): 3/4 inch (19 mm) minimum.
   2. Width for Markers on Pipes with OD, Including Insulation, 6 Inches (150 mm) or Larger: 1-1/2 inches (38 mm) minimum.

## 2.3 DUCT IDENTIFICATION DEVICES

A. Duct Markers: Engraved, color-coded laminated plastic. Include direction and quantity of airflow and duct service (such as supply, return, and exhaust). Include contact-type, permanent adhesive. Self-adhesive duct markers/tape may be substituted.

## 2.4 VALVE TAGS

A. Valve Tags: Stamped or engraved with 1/4-inch (6.4-mm) letters for piping system abbreviation and 1/2-inch (13-mm) numbers, with numbering scheme approved by Engineer. Provide 5/32-inch (4-mm) hole for fastener.
   1. Material: 0.032-inch- (0.8-mm-) thick aluminum.
   2. Valve-Tag Fasteners: Brass wire-link or beaded chain; or S-hook.

## 2.5 VALVE SCHEDULES

A. Valve Schedules: For each piping system, on standard-size bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal-operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.
   1. Valve-Schedule Frames: Glazed display frame for removable mounting on masonry walls for each page of valve schedule. Include mounting screws.
   2. Frame: Extruded aluminum.
   3. Glazing: ASTM C 1036, Type I, Class 1, Glazing Quality B, 2.5-mm, single-thickness glass.

## 2.6 WARNING TAGS

A. Warning Tags: Preprinted or partially preprinted, accident-prevention tags; of plasticized card stock with matte finish suitable for writing.
   1. Size: 3 by 5-1/4 inches.
   2. Fasteners: Brass grommet and wire.
   3. Nomenclature: Large-size primary caption such as DANGER, CAUTION, or DO NOT OPERATE.
   4. Color: Yellow background with black lettering.

# PART 3 - EXECUTION

## 3.1 APPLICATIONS, GENERAL

A. Products specified are for applications referenced in other Division 15 Sections. If more than single-type material, device, or label is specified for listed applications, selection is Installer's option.

## 3.2 EQUIPMENT IDENTIFICATION

A. Install and permanently fasten equipment nameplates on each major item of mechanical equipment that does not have nameplate or has nameplate that is damaged or located where not easily visible. Locate nameplates where accessible and visible. Include nameplates for the following general categories of equipment:
   1. Fuel-burning units, including boilers, furnaces, heaters, stills, and absorption units.
   2. Pumps, compressors, chillers, condensers, and similar motor-driven units.
   3. Heat exchangers, coils, evaporators, cooling towers, heat recovery units, and similar equipment.
   4. Fans, blowers, primary balancing dampers, and mixing boxes.
   5. Packaged HVAC central-station and zone-type units.

B. Install equipment markers with permanent adhesive on or near each major item of mechanical equipment. Data required for markers may be included on signs, and markers may be omitted if both are indicated.

1. Letter Size: Minimum 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
2. Data: Distinguish among multiple units, indicate operational requirements, indicate safety and emergency precautions, warn of hazards and improper operations, and identify units.
3. Locate markers where accessible and visible. Include markers for the following general categories of equipment:
    a. Main control and operating valves, including safety devices and hazardous units such as gas outlets.
    b. Fire department hose valves and hose stations.
    c. Meters, gages, thermometers, and similar units.
    d. Fuel-burning units, including boilers, furnaces, heaters, stills, and absorption units.
    e. Pumps, compressors, chillers, condensers, and similar motor-driven units.
    f. Heat exchangers, coils, evaporators, cooling towers, heat recovery units, and similar equipment.
    g. Fans, blowers, primary balancing dampers, and mixing boxes.
    h. Packaged HVAC central-station and zone-type units.
    i. Tanks and pressure vessels.
    j. Strainers, filters, humidifiers, water-treatment systems, and similar equipment.

C. Install equipment signs with screws or permanent adhesive on or near each major item of mechanical equipment. Locate signs where accessible and visible.
1. Identify mechanical equipment with equipment markers in the following color codes:
    a. Green: For cooling equipment and components.
    b. Yellow: For heating equipment and components.
    c. Orange: For combination cooling and heating equipment and components.
    d. Brown: For energy-reclamation equipment and components.
2. Letter Size: Minimum 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
3. Data: Distinguish among multiple units, indicate operational requirements, indicate safety and emergency precautions, warn of hazards and improper operations, and identify units.
4. Include signs for the following general categories of equipment:
    a. Main control and operating valves, including safety devices and hazardous units such as gas outlets.
    b. Fuel-burning units, including boilers, furnaces, heaters, stills, and absorption units.
    c. Pumps, compressors, chillers, condensers, and similar motor-driven units.
    d. Heat exchangers, coils, evaporators, cooling towers, heat recovery units, and similar equipment.
    e. Fans, blowers, primary balancing dampers, and mixing boxes.
    f. Packaged HVAC central-station and zone-type units.
    g. Tanks and pressure vessels.

h. Strainers, filters, humidifiers, water-treatment systems, and similar equipment.

D. Install access panel markers with screws on equipment access panels.

## 3.3 PIPING IDENTIFICATION

A. Install manufactured pipe markers indicating service on each piping system. Install with flow indication arrows showing direction of flow.
   1. Pipes with OD, Including Insulation, Less Than 6 Inches (150 mm): Pretensioned pipe markers. Use size to ensure a tight fit.
   2. Pipes with OD, Including Insulation, Less Than 6 Inches (150 mm): Self-adhesive pipe markers. Use color-coded, self-adhesive plastic tape, at least 3/4 inch wide, lapped at least 1-1/2 inches at both ends of pipe marker, and covering full circumference of pipe.
   3. Pipes with OD, Including Insulation, 6 Inches and Larger: Shaped pipe markers. Use size to match pipe and secure with fasteners.
   4. Pipes with OD, Including Insulation, 6 Inches and Larger: Self-adhesive pipe markers. Use color-coded, self-adhesive plastic tape, at least 1-1/2 inches wide, lapped at least 3 inches at both ends of pipe marker, and covering full circumference of pipe.

B. Locate pipe markers and color bands where piping is exposed in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior nonconcealed locations as follows:
   1. Near each valve and control device.
   2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
   3. Near penetrations through walls, floors, ceilings, and nonaccessible enclosures.
   4. At access doors, manholes, and similar access points that permit view of concealed piping.
   5. Near major equipment items and other points of origination and termination.
   6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
   7. On piping above removable acoustical ceilings. Omit intermediately spaced markers.

## 3.4 DUCT IDENTIFICATION

A. Install duct markers with permanent adhesive on air ducts in the following color codes:
   1. Green: For cold-air supply ducts.
   2. Yellow: For hot-air supply ducts.
   3. Blue: For exhaust-, outside-, relief-, return-, and mixed-air ducts.
   4. ASME A13.1 Colors and Designs: For hazardous material exhaust.
   5. Letter Size: Minimum 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.

B. Locate markers near points where ducts enter into concealed spaces and at maximum intervals of 50 feet in each space where ducts are exposed or concealed by removable ceiling system.

## 3.5 VALVE-TAG INSTALLATION

A. Install tags on valves and control devices in piping systems, except check valves; valves within factory-fabricated equipment units; plumbing fixture supply stops; shutoff valves; faucets; convenience and lawn-watering hose connections; and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule.

B. Valve-Tag Application Schedule: Tag valves according to size, shape, and color scheme and with captions similar to those indicated in the following:
   1. Valve-Tag Size and Shape:
      a. Cold Water: 1-1/2 inches, round.
      b. Hot Water: 1-1/2 inches, round.
      c. Fire Protection: 1-1/2 inches, round.
      d. Gas: 1-1/2 inches, round.
      e. Steam: 1-1/2 inches, round.
   2. Valve-Tag Color:
      a. Cold Water: Blue.
      b. Hot Water: Black.
      c. Fire Protection: Red.
      d. Gas: Yellow.
   3. Letter Color:
      a. Cold Water: White.
      b. Hot Water: White.
      c. Fire Protection: White.
      d. Gas: Black.

## 3.6 VALVE-SCHEDULE INSTALLATION

A. Mount valve schedule on wall in accessible location in each major equipment room.

## 3.7 WARNING-TAG INSTALLATION

A. Write required message on, and attach warning tags to, equipment and other items where required.

## 3.8 ADJUSTING

A. Relocate mechanical identification materials and devices that have become visually blocked by other work.

## 3.9 CLEANING

A. Clean faces of mechanical identification devices and glass frames of valve schedules.

END OF SECTION 15075

# SECTION 15080 - MECHANICAL INSULATION

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes mechanical insulation for duct, equipment, and pipe, including the following:
   1. Insulation Materials:
      a. Flexible elastomeric.
      b. Mineral fiber.
   2. Fire-rated insulation systems.
   3. Insulating cements.
   4. Adhesives.
   5. Mastics.
   6. Lagging adhesives.
   7. Sealants.
   8. Factory-applied jackets.
   9. Field-applied fabric-reinforcing mesh.
   10. Field-applied cloths.
   11. Field-applied jackets.
   12. Tapes.
   13. Securements.
   14. Corner angles.

### 1.3 DEFINITIONS

A. ASJ: All-service jacket.

B. FSK: Foil, scrim, kraft paper.

C. FSP: Foil, scrim, polyethylene.

D. PVDC: Polyvinylidene chloride.

E. SSL: Self-sealing lap.

## 1.4 SUBMITTALS

A. Product Data: For each type of product indicated, identify thermal conductivity, thickness, and jackets (both factory and field applied, if any).

B. Shop Drawings: Show details for the following:
   1. Application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
   2. Insulation application at pipe expansion joints for each type of insulation.
   3. Insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
   4. Removable insulation at piping specialties, equipment connections, and access panels.
   5. Application of field-applied jackets.
   6. Application at linkages of control devices.
   7. Field application for each equipment type.

C. Installer Certificates: Signed by Contractor certifying that installers comply with requirements.

D. Material Test Reports: From a qualified testing agency acceptable to authorities having jurisdiction indicating, interpreting, and certifying test results for compliance of insulation materials, sealers, attachments, cements, and jackets, with requirements indicated. Include dates of tests and test methods employed.

E. Field quality-control inspection reports.

## 1.5 QUALITY ASSURANCE

A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.

B. Fire-Test-Response Characteristics: Insulation and related materials shall have fire-test-response characteristics indicated, as determined by testing identical products per ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, and cement material containers, with appropriate markings of applicable testing and inspecting agency.
   1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
   2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

1.7 COORDINATION

A. Coordinate size and location of supports, hangers, and insulation shields specified in Division 15 Section "Hangers and Supports."

B. Coordinate clearance requirements with piping Installer for piping insulation application, duct Installer for duct insulation application, and equipment Installer for equipment insulation application. Before preparing piping and ductwork Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

1.8 SCHEDULING

A. Schedule insulation application after pressure testing systems. Insulation application may begin on segments that have satisfactory test results.

B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Products: Subject to compliance with requirements, provide one of the products specified.
   2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 INSULATION MATERIALS

A. Refer to Part 3 schedule articles for requirements about where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

D. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

E. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

F. Flexible Elastomeric: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials.
   1. Available Products:
      a. Aeroflex USA Inc.; Aerocel.
      b. Armacell LLC; AP Armaflex.
      c. RBX Corporation; Insul-Sheet 1800 and Insul-Tube 180.

G. Mineral-Fiber Blanket Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 553, Type II and ASTM C 1290, Type III with factory-applied FSK jacket. Factory-applied jacket requirements are specified in Part 2 "Factory-Applied Jackets" Article.
   1. Available Products:
      a. CertainTeed Corp.; Duct Wrap.
      b. Johns Manville; Microlite.
      c. Knauf Insulation; Duct Wrap.
      d. Owens Corning; All-Service Duct Wrap.

H. Mineral-Fiber Board Insulation: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 612, Type IA or Type IB. For equipment applications, provide insulation with factory-applied ASJ. Factory-applied jacket requirements are specified in Part 2 "Factory-Applied Jackets" Article.
   1. Available Products:
      a. CertainTeed Corp.; Commercial Board.
      b. Johns Manville; 800 Series Spin-Glas.
      c. Knauf Insulation; Insulation Board.
      d. Owens Corning; Fiberglas 700 Series.

I. Mineral-Fiber, Preformed Pipe Insulation:
   1. Available Products:
      a. Johns Manville; Micro-Lok.
      b. Knauf Insulation; 1000(Pipe Insulation.
      c. Owens Corning; Fiberglas Pipe Insulation.
   2. Type I, 850 deg F (454 deg C) Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ. Factory-applied jacket requirements are specified in Part 2 "Factory-Applied Jackets" Article.

## 2.3 FIRE-RATED INSULATION SYSTEMS

A. Fire-Rated Blanket: High-temperature, flexible, blanket insulation with FSK jacket that is UL tested and certified to provide a 1 or 2-hour fire rating, as required.
   1. Products:
      a. CertainTeed Corp.; FlameChek.
      b. Johns Manville; Firetemp Wrap.
      c. Thermal Ceramics; FireMaster Duct Wrap.
      d. 3M; Fire Barrier Wrap Products.

2.4 INSULATING CEMENTS

A. Mineral-Fiber Insulating Cement: Comply with ASTM C 195.

B. Expanded or Exfoliated Vermiculite Insulating Cement: Comply with ASTM C 196.

C. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449/C 449M.

2.5 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

B. Flexible Elastomeric Adhesive: Comply with MIL-A-24179A, Type II, Class I.

C. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

D. ASJ Adhesive, and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.

E. PVC Jacket Adhesive: Compatible with PVC jacket.
   1. Products:

2.6 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-C-19565C, Type II.

B. Vapor-Barrier Mastic: Solvent based; suitable for indoor use on below ambient services.
   1. Products:
      a. Childers Products, Division of ITW; CP-30.
      b. Foster Products Corporation, H. B. Fuller Company; 30-35.
      c. ITW TACC, Division of Illinois Tool Works; CB-25.
      d. Marathon Industries, Inc.; 501.
      e. Mon-Eco Industries, Inc.; 55-10.
   2. Water-Vapor Permeance: ASTM F 1249, 0.05 perm (0.03 metric perm) at 35-mil (0.9-mm) dry film thickness.
   3. Service Temperature Range: 0 to 180 deg F (Minus 18 to plus 82 deg C).
   4. Solids Content: ASTM D 1644, 44 percent by volume and 62 percent by weight.
   5. Color: White.

2.7 LAGGING ADHESIVES

A. Description: Comply with MIL-A-3316C Class I, Grade A and shall be compatible with insulation materials, jackets, and substrates.

1. Fire-resistant, water-based lagging adhesive and coating for use indoors to adhere fire-resistant lagging cloths over duct, equipment, and pipe insulation.
2. Service Temperature Range: Minus 50 to plus 180 deg F (Minus 46 to plus 82 deg C).
3. Color: White.

## 2.8 SEALANTS

A. Joint Sealants:
1. Joint Sealants for Cellular-Glass, Products:
   a. Childers Products, Division of ITW; CP-76.
   b. Pittsburgh Corning Corporation; Pittseal 444.
2. Materials shall be compatible with insulation materials, jackets, and substrates.
3. Permanently flexible, elastomeric sealant.
4. Service Temperature Range: Minus 100 to plus 300 deg F (Minus 73 to plus 149 deg C).
5. Color: White or gray.

B. FSK and Metal Jacket Flashing Sealants:
1. Materials shall be compatible with insulation materials, jackets, and substrates.
2. Fire- and water-resistant, flexible, elastomeric sealant.
3. Service Temperature Range: Minus 40 to plus 250 deg F (Minus 40 to plus 121 deg C).
4. Color: Aluminum.

C. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:
1. Materials shall be compatible with insulation materials, jackets, and substrates.
2. Fire- and water-resistant, flexible, elastomeric sealant.
3. Service Temperature Range: Minus 40 to plus 250 deg F (Minus 40 to plus 121 deg C).
4. Color: White.

## 2.9 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:
1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.
4. FSP Jacket: Aluminum-foil, fiberglass-reinforced scrim with polyethylene backing; complying with ASTM C 1136, Type II.

## 2.10 FIELD-APPLIED FABRIC-REINFORCING MESH

A. Woven Glass-Fiber Fabric for Pipe Insulation: Approximately 2 oz./sq. yd. (68 g/sq. m) with a thread count of 10 strands by 10 strands/sq. inch (4 strands by 4 strands/sq. mm) for covering pipe and pipe fittings.

B. Woven Glass-Fiber Fabric for Duct and Equipment Insulation: Approximately 6 oz./sq. yd. (203 g/sq. m) with a thread count of 5 strands by 5 strands/sq. inch (2 strands by 2 strands/sq. mm) for covering equipment.

## 2.11 FIELD-APPLIED CLOTHS

A. Woven Glass-Fiber Fabric: Comply with MIL-C-20079H, Type I, plain weave, and presized a minimum of 8 oz./sq. yd. (271 g/sq. m).

## 2.12 FIELD-APPLIED JACKETS

A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.

B. FSK Jacket: Aluminum-foil-face, fiberglass-reinforced scrim with kraft-paper backing.

C. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness 20 mil; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.
   1. Adhesive: As recommended by jacket material manufacturer.
   2. Color: White.
   3. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.
      a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and P-trap and supply covers for lavatories.
   4. Factory-fabricated tank heads and tank side panels.

D. Metal Jacket:
   1. Aluminum Jacket: Comply with ASTM B 209 (ASTM B 209M), Alloy 3003, 3005, 3105 or 5005, Temper H-14.
      a. Sheet and roll stock ready for shop or field sizing.
      b. Thickness: 0.020” Smooth.
      c. Moisture Barrier for Indoor Applications: 1-mil- thick, heat-bonded polyethylene and kraft paper.
      d. Moisture Barrier for Outdoor Applications: 3-mil- thick, heat-bonded polyethylene and kraft paper.
      e. Factory-Fabricated Fitting Covers:
         1) Same material, finish, and thickness as jacket.
         2) Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
         3) Tee covers.
         4) Flange and union covers.
         5) End caps.
         6) Beveled collars.
         7) Valve covers.
         8) Field fabricate fitting covers only if factory-fabricated fitting covers are not available.

## 2.13 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136 and UL listed.
   1. Width: 3 inches.
   2. Thickness: 11.5 mils.
   3. Adhesion: 90 ounces force/inch in width.
   4. Elongation: 2 percent.
   5. Tensile Strength: 40 lbf/inch in width.
   6. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136 and UL listed.
   1. Width: 3 inches.
   2. Thickness: 6.5 mils.
   3. Adhesion: 90 ounces force/inch in width.
   4. Elongation: 2 percent.
   5. Tensile Strength: 40 lbf/inch in width.
   6. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

C. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive. Suitable for indoor and outdoor applications.
   1. Width: 2 inches.
   2. Thickness: 6 mils.
   3. Adhesion: 64 ounces force/inch in width.
   4. Elongation: 500 percent.
   5. Tensile Strength: 18 lbf/inch in width.

D. Aluminum-Foil Tape: Vapor-retarder tape with acrylic adhesive and UL listed.
   1. Width: 2 inches.
   2. Thickness: 3.7 mils.
   3. Adhesion: 100 ounces force/inch in width.
   4. Elongation: 5 percent.
   5. Tensile Strength: 34 lbf/inch in width.

## 2.14 SECUREMENTS

A. Bands:
   1. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 3/4 inch wide with wing or closed seal.
   2. Springs: Twin spring set constructed of stainless steel with ends flat and slotted to accept metal bands. Spring size determined by manufacturer for application.

B. Insulation Pins and Hangers:
   1. Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.106-inch- diameter shank, length to suit depth of insulation indicated.

2. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- thick, galvanized-steel sheet, with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches in diameter.
    a. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in exposed locations.

C. Staples: Outward-clinching insulation staples, nominal 3/4-inch- wide, stainless steel or Monel.

D. Wire: 0.080-inch nickel-copper alloy.

## 2.15 CORNER ANGLES

A. PVC Corner Angles: 30 mils thick, minimum 1 by 1 inch, PVC according to ASTM D 1784, Class 16354-C. White or color-coded to match adjacent surface.

B. Aluminum Corner Angles: 0.040 inch thick, minimum 1 by 1 inch, aluminum according to ASTM B 209, Alloy 3003, 3005, 3105 or 5005; Temper H-14.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements for installation and other conditions affecting performance of insulation application.
    1. Verify that systems and equipment to be insulated have been tested and are free of defects.
    2. Verify that surfaces to be insulated are clean and dry.
    3. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

## 3.3 COMMON INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment, ducts and fittings, and piping including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of equipment, duct system, and pipe system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

G. Keep insulation materials dry during application and finishing.

H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

I. Install insulation with least number of joints practical.

J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
   1. Install insulation continuously through hangers and around anchor attachments.
   2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
   3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
   4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

L. Install insulation with factory-applied jackets as follows:
   1. Draw jacket tight and smooth.
   2. Cover circumferential joints with 3-inch- wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
   3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches o.c.
      a. For below ambient services, apply vapor-barrier mastic over staples.
   4. Cover joints and seams with tape as recommended by insulation material manufacturer to maintain vapor seal.
   5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to duct and pipe flanges and fittings.

M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

P. For above ambient services, do not install insulation to the following:
   1. Vibration-control devices.
   2. Testing agency labels and stamps.
   3. Nameplates and data plates.
   4. Manholes.
   5. Handholes.
   6. Cleanouts.

## 3.4 PENETRATIONS

A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.
   1. Seal penetrations with flashing sealant.
   2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
   3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches below top of roof flashing.
   4. Seal jacket to roof flashing with flashing sealant.

B. Insulation Installation at Below-Grade Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.

C. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.
   1. Seal penetrations with flashing sealant.
   2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
   3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.
   4. Seal jacket to wall flashing with flashing sealant.

D. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

E. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions. Terminate insulation at fire damper sleeves for fire-rated wall and partition penetrations. Externally insulate damper sleeves to match adjacent insulation and overlap duct insulation at least 2 inches.
   1. Firestopping and fire-resistive joint sealers are specified in Division 7 Section "Through-Penetration Firestop Systems."

F. Insulation Installation at Floor Penetrations:
   1. Duct: Install insulation continuously through floor penetrations that are not fire rated. For penetrations through fire-rated assemblies, terminate insulation at fire damper sleeves and externally insulate damper sleeve beyond floor to match adjacent duct insulation. Overlap damper sleeve and duct insulation at least 2 inches.
   2. Pipe: Install insulation continuously through floor penetrations.
   3. Seal penetrations through fire-rated assemblies according to Division 7 Section "Through-Penetration Firestop Systems."

## 3.5 DUCT AND PLENUM INSULATION INSTALLATION

A. Blanket Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.
   1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 50 percent coverage of duct and plenum surfaces.
   2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
   3. Install capacitor-discharge-weld pins and speed washers on sides and bottom of horizontal ducts and sides of vertical ducts as follows:
      a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.
      b. On duct sides with dimensions larger than 18 inches, place pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.

## 3.6 GENERAL PIPE INSULATION INSTALLATION

A. Requirements in this Article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:
   1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity, unless otherwise indicated.
   2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.

3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below ambient services, provide a design that maintains vapor barrier.
6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below ambient services and a breather mastic for above ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
8. For services not specified to receive a field-applied jacket except for flexible elastomeric, install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.
9. Stencil or label the outside insulation jacket of each union with the word "UNION." Match size and color of pipe labels.

C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes, vessels, and equipment. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

D. Install removable insulation covers at locations indicated. Installation shall conform to the following:
1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.
2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.

3. Construct removable valve insulation covers in same manner as for flanges except divide the two-part section on the vertical center line of valve body.
4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.
5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

## 3.7 FLEXIBLE ELASTOMERIC INSULATION INSTALLATION

A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

B. Insulation Installation on Pipe Flanges:
1. Install pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of sheet insulation of same thickness as pipe insulation.
4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

C. Insulation Installation on Pipe Fittings and Elbows:
1. Install mitered sections of pipe insulation.
2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Insulation Installation on Valves and Pipe Specialties:
1. Install preformed valve covers manufactured of same material as pipe insulation when available.
2. When preformed valve covers are not available, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.
4. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

## 3.8 MINERAL-FIBER INSULATION INSTALLATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above ambient surfaces, secure laps with outward clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below ambient surfaces, do not staple longitudinal tabs but secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:
1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:
1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:
1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

E. Blanket Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.
1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 50 percent coverage of duct and plenum surfaces.
2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
3. Install capacitor-discharge-weld pins and speed washers on sides and bottom of horizontal ducts and sides of vertical ducts as follows:
    a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.

b. On duct sides with dimensions larger than 18 inches, place pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
d. Do not overcompress insulation during installation.
e. Impale insulation over pins and attach speed washers.
f. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.

4. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches (50 mm) from 1 edge and 1 end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch (13-mm) outward-clinching staples, 1 inch (25 mm) o.c. Install vapor barrier consisting of factory- or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.
   a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.
   b. Install vapor stops for ductwork and plenums operating below 50 deg F (10 deg C) at 18-foot (5.5-m) intervals. Vapor stops shall consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to 2 times the insulation thickness but not less than 3 inches (75 mm).
5. Overlap unfaced blankets a minimum of 2 inches on longitudinal seams and end joints. At end joints, secure with steel bands spaced a maximum of 18 inches o.c.
6. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
7. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch- wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches o.c.

F. Board Insulation Installation on Ducts and Plenums: Secure with adhesive and insulation pins.
1. Apply adhesives according to manufacturer's recommended coverage rates per unit area, for 50 percent coverage of duct and plenum surfaces.
2. Apply adhesive to entire circumference of ducts and to all surfaces of fittings and transitions.
3. Install capacitor-discharge-weld pins and speed washers on sides and bottom of horizontal ducts and sides of vertical ducts as follows:
   a. On duct sides with dimensions 18 inches and smaller, place pins along longitudinal centerline of duct. Space 3 inches maximum from insulation end joints, and 16 inches o.c.
   b. On duct sides with dimensions larger than 18 inches, space pins 16 inches o.c. each way, and 3 inches maximum from insulation joints. Install additional pins to hold insulation tightly against surface at cross bracing.
   c. Pins may be omitted from top surface of horizontal, rectangular ducts and plenums.
   d. Do not overcompress insulation during installation.

e. Cut excess portion of pins extending beyond speed washers or bend parallel with insulation surface. Cover exposed pins and washers with tape matching insulation facing.

4. For ducts and plenums with surface temperatures below ambient, install a continuous unbroken vapor barrier. Create a facing lap for longitudinal seams and end joints with insulation by removing 2 inches (50 mm) from 1 edge and 1 end of insulation segment. Secure laps to adjacent insulation section with 1/2-inch (13-mm) outward-clinching staples, 1 inch (25 mm) o.c. Install vapor barrier consisting of factory- or field-applied jacket, adhesive, vapor-barrier mastic, and sealant at joints, seams, and protrusions.
   a. Repair punctures, tears, and penetrations with tape or mastic to maintain vapor-barrier seal.
   b. Install vapor stops for ductwork and plenums operating below 50 deg F (10 deg C) at 18-foot (5.5-m) intervals. Vapor stops shall consist of vapor-barrier mastic applied in a Z-shaped pattern over insulation face, along butt end of insulation, and over the surface. Cover insulation face and surface to be insulated a width equal to 2 times the insulation thickness but not less than 3 inches (75 mm).
5. Install insulation on rectangular duct elbows and transitions with a full insulation section for each surface. Groove and score insulation to fit as closely as possible to outside and inside radius of elbows. Install insulation on round and flat-oval duct elbows with individually mitered gores cut to fit the elbow.
6. Insulate duct stiffeners, hangers, and flanges that protrude beyond insulation surface with 6-inch- wide strips of same material used to insulate duct. Secure on alternating sides of stiffener, hanger, and flange with pins spaced 6 inches o.c.

## 3.9 FIELD-APPLIED JACKET INSTALLATION

A. Where glass-cloth jackets are indicated, install directly over bare insulation or insulation with factory-applied jackets.
   1. Draw jacket smooth and tight to surface with 2-inch overlap at seams and joints.
   2. Embed glass cloth between two 0.062-inch- thick coats of lagging adhesive.
   3. Completely encapsulate insulation with coating, leaving no exposed insulation.

B. Where FSK jackets are indicated, install as follows:
   1. Draw jacket material smooth and tight.
   2. Install lap or joint strips with same material as jacket.
   3. Secure jacket to insulation with manufacturer's recommended adhesive.
   4. Install jacket with 1-1/2-inch laps at longitudinal seams and 3-inch- wide joint strips at end joints.
   5. Seal openings, punctures, and breaks in vapor-retarder jackets and exposed insulation with vapor-barrier mastic.

C. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints; for horizontal applications, install with longitudinal seams along top and bottom of tanks and vessels. Seal with manufacturer's recommended adhesive.
   1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

D. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.

## 3.10 FIRE-RATED INSULATION SYSTEM INSTALLATION

A. Where fire-rated insulation system is indicated, secure system to ducts and duct hangers and supports to maintain a continuous UL-listed fire rating.

B. Insulate duct access panels and doors to achieve same fire rating as duct.

C. Install firestopping at penetrations through fire-rated assemblies. Fire-stop systems are specified in Division 7 Section "Through-Penetration Firestop Systems."

## 3.11 FINISHES

A. Duct, Equipment, and Pipe Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Paint jacket with paint system identified below and as specified in Division 9 painting Sections. Paint only those items in exposed, public areas.
   1. Flat Acrylic Finish: Two finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.
      a. Finish Coat Material: Interior, flat, latex-emulsion size.

B. Flexible Elastomeric Thermal Insulation: After adhesive has fully cured, apply two coats of insulation manufacturer's recommended protective coating.

C. Color: Final color as selected by Architect. Vary first and second coats to allow visual inspection of the completed Work.

D. Do not field paint aluminum or stainless-steel jackets.

## 3.12 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent inspecting agency to perform field inspections and prepare inspection reports.

B. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements. Remove defective Work.

C. Install new insulation and jackets to replace insulation and jackets removed for inspection. Repeat inspection procedures after new materials are installed.

## 3.13 DUCT INSULATION SCHEDULE, GENERAL

A. Plenums and Ducts Requiring Insulation:

1. Indoor, concealed supply and outdoor air.
2. Indoor, exposed supply and outdoor air.
3. Indoor, concealed return located in non-conditioned space.
4. Indoor, exposed return located in non-conditioned space.
5. Indoor, concealed oven and ware-wash exhaust.
6. Indoor, exposed oven and ware-wash exhaust.
7. Indoor, concealed exhaust air.
8. Indoor, exposed exhaust air.
9. Outdoor, concealed supply and return.
10. Outdoor, exposed supply and return.

B. Items Not Insulated:
1. Metal ducts with duct liner of sufficient thickness to comply with energy code and ASHRAE/IESNA 90.1.
2. Factory-insulated flexible ducts.
3. Factory-insulated plenums and casings.
4. Flexible connectors.
5. Vibration-control devices.
6. Factory-insulated access panels and doors.

## 3.14 INDOOR DUCT AND PLENUM INSULATION SCHEDULE

A. Concealed, round and flat-oval, supply-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

B. Concealed, round and flat-oval, return-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

C. Concealed, round and flat-oval, outdoor-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

D. Concealed, round and flat-oval, exhaust-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

E. Concealed, rectangular, supply-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

F. Concealed, rectangular, return-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

G. Concealed, rectangular, outdoor-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

H. Concealed, rectangular, exhaust-air duct insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

I. Concealed, return-air plenum insulation shall be the following:
1. Mineral-Fiber Blanket: 2 inches thick and 1.5-lb/cu. ft. nominal density.

2. Mineral-Fiber Board: 1-1/2 inches thick and 2-lb/cu. ft. nominal density.

## 3.15 PIPING INSULATION SCHEDULE, GENERAL

A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:
1. Fire-suppression piping.
2. Drainage piping located in crawl spaces.
3. Below-grade piping.
4. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

## 3.16 INDOOR PIPING INSULATION SCHEDULE

A. Domestic Cold Water:
1. Insulation shall be the following:
a. Mineral-Fiber Pipe Insulation, Type I: 1/2 inch thick.

B. Domestic Hot and Re-circulated Hot Water:
1. Insulation shall be the following:
a. Mineral-Fiber Pipe Insulation, Type I: 1 inch thick.

C. Condensate and Equipment Drain Water below 60 Deg F:
1. All Pipe Sizes: Insulation shall be the following:
a. Flexible Elastomeric: 3/4 inch thick.

D. Floor Drains, Traps, and Sanitary Drain Piping within 10 Feet of Drain Receiving Condensate and Equipment Drain Water below 60 Deg F:
1. All Pipe Sizes: Insulation shall be the following:
a. Mineral-Fiber Pipe Insulation, Type I: 1 inch thick.

E. Refrigerant Suction and Hot-Gas Piping:
1. All Pipe Sizes: Insulation shall be the following:
a. Flexible Elastomeric: 3/4 inch thick.

## 3.17 OUTDOOR, ABOVEGROUND PIPING INSULATION SCHEDULE

A. Domestic Water Piping:
1. All Pipe Sizes: Insulation shall be the following:
a. Mineral-Fiber Pipe Insulation, Type I: 1 inch thick.

B. Domestic Hot and Re-circulated Hot Water:
1. All Pipe Sizes: Insulation shall be the following:
a. Mineral-Fiber Pipe Insulation, Type I: 1 inches thick.

C. Refrigerant Suction and Hot-Gas Piping:
   1. All Pipe Sizes: Insulation shall be the following:
      a. Flexible Elastomeric: 1 inch thick.

3.18 INDOOR, FIELD-APPLIED JACKET SCHEDULE

A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.

B. If more than one material is listed, selection from materials listed is Contractor's option.

C. Piping, Concealed:
   1. ASJ – factory.

D. Piping, Exposed:
   1. PVC: 20 mils thick.

3.19 OUTDOOR, FIELD-APPLIED JACKET SCHEDULE

A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.

B. If more than one material is listed, selection from materials listed is Contractor's option.

C. Piping, Concealed:
   1. PVC: 20 mils thick.

D. Piping, Exposed:
   1. Aluminum, Smooth: 0.020 inch thick.

END OF SECTION 15080

# SECTION 15140 - DOMESTIC WATER PIPING

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes domestic water piping inside the building.

B. Water meters will be furnished and installed by utility company.

C. Related Sections include the following:
   1. Division 2 Section "Water Distribution" for water-service piping outside the building from source to the point where water-service piping enters the building.
   2. Division 15 Section "Plumbing Specialties" for water distribution piping specialties.

### 1.3 PERFORMANCE REQUIREMENTS

A. Provide components and installation capable of producing domestic water piping systems with 80 psig, unless otherwise indicated.

### 1.4 SUBMITTALS

A. Product Data: For pipe, tube, fittings, and couplings.

B. Water Samples: Specified in Part 3 "Cleaning" Article.

C. Field quality-control test reports.

### 1.5 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

B. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," for potable domestic water piping and components.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Refer to Part 3 "Pipe and Fitting Applications" Article for applications of pipe, tube, fitting, and joining materials.

B. Transition Couplings for Aboveground Pressure Piping: Coupling or other manufactured fitting the same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

2.2 COPPER TUBE AND FITTINGS

A. Soft Copper Tube: ASTM B 88, Type K (ASTM B 88M, Type A), water tube, annealed temper.
   1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint, or silver-braze fittings. Furnish wrought-copper fittings if indicated.
   2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint, or silver-braze ends. Furnish Class 300 flanges if required to match piping.
   3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces, and solder-joint, or silver-braze, or threaded ends.

B. Hard Copper Tube: ASTM B 88, Type K (ASTM B 88M, Type A), water tube, drawn temper.
   1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint, or silver-braze fittings. Furnish wrought-copper fittings if indicated.
   2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint, or silver-braze ends. Furnish Class 300 flanges if required to match piping.
   3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces, and solder-joint, or silver-braze, or threaded ends.
   4. Copper, Grooved-End Fittings: ASTM B 75 (ASTM B 75M) copper tube or ASTM B 584 bronze castings.
      a. Grooved-End-Tube Couplings: Copper-tube dimensions and design similar to AWWA C606. Include ferrous housing sections, gasket suitable for hot water, and bolts and nuts.

2.3 VALVES

A. Bronze and cast-iron, general-duty valves are specified in Division 15 Section "Valves."

B. Balancing and drain valves are specified in Division 15 Section "Plumbing Specialties."

PART 3 - EXECUTION

3.1 EXCAVATION

A. Excavating, trenching, and backfilling are specified in Division 2 Section "Earthwork."

3.2 PIPE AND FITTING APPLICATIONS

A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.

B. Flanges may be used on aboveground piping, unless otherwise indicated.

C. Grooved joints may be used on aboveground grooved-end piping.

D. Fitting Option: Extruded-tee connections and brazed joints may be used on aboveground copper tubing.

E. Underground, Water-Service Piping on Service Side of Water Meter: Refer to Division 2 Section "Water Distribution."

F. Underground, water-service piping on house side of water meter. Use the following piping materials:
   1. Soft copper tube, type K (type A); copper pressure fittings; and silver braze joints. For pipes 2" and smaller, use annealed pipe. Otherwise, use hard-drawn pipe.

G. Under-Building-Slab, Domestic Water Piping on House Side of Water Meter: Soft copper tube, Type K (Type A); copper pressure fittings; and silver braze joints. For pipes 2" and smaller, use annealed pipe. Otherwise, use hard-drawn pipe

H. Aboveground Domestic Water Piping: Use any of the following piping materials for each size range:
   1. NPS 2-1/2” and Smaller: Hard copper tube, Type K (Type A); copper pressure fittings; and soldered joints.

3.3 VALVE APPLICATIONS

A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
   1. Shutoff Duty: Use bronze ball or gate valves for piping NPS 2" (DN 50) and smaller.
   2. Throttling Duty: Use bronze ball or globe valves for piping NPS 2" (DN 50) and smaller. Hot-Water-Piping, Balancing Duty: Memory-stop balancing valves.
   3. Drain Duty: Hose-end drain valves.

B. Cast-iron, grooved-end valves may be used with grooved-end piping.

C. Install shutoff valve close to water main on each branch and riser serving plumbing fixtures or equipment, on each water supply to equipment, and on each water supply to plumbing fixtures that do not have supply stops. Use ball or gate valves for piping NPS 2 (DN 50) and smaller. NPS 1/2 or NPS 3/4 (DN 15 or DN 20) inlet, hose-end drain valves may be adequate for this application.

D. Install drain valves for equipment at base of each water riser, at low points in horizontal piping, and where required to drain water piping.
   1. Install hose-end drain valves at low points in water mains, risers, and branches.
   2. Install stop-and-waste drain valves where indicated.

E. Install calibrated balancing valves in each hot-water circulation return branch and discharge side of each pump and circulator. Set calibrated balancing valves partly open to restrict but not stop flow. Calibrated balancing valves are specified in Division 15 Section "Plumbing Specialties."

## 3.4 PIPING INSTALLATION

A. Basic piping installation requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."

B. Install under-building-slab copper tubing according to CDA's "Copper Tube Handbook."

C. Install cast-iron sleeve with water stop and mechanical sleeve seal at each service pipe penetration through foundation wall. Select number of interlocking rubber links required to make installation watertight. Sleeves and mechanical sleeve seals are specified in Division 15 Section "Basic Mechanical Materials and Methods."

D. Install shutoff valve, hose-end drain valve, strainer, pressure gage, and test tee with valve, inside the building at each domestic water service entrance.

E. Install water-pressure regulators downstream from shutoff valves. Water-pressure regulators are specified in Division 15 Section "Plumbing Specialties."

F. Install domestic water piping level and plumb.

G. Rough-in domestic water piping for water-meter installation according to utility company's requirements.

## 3.5 JOINT CONSTRUCTION

A. Basic piping joint construction requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."

B. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.

C. Grooved Joints: Assemble joints with grooved-end-pipe or grooved-end-tube coupling housing, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.

D. Extruded-Tee Connections: Form tee in copper tube according to ASTM F 2014. Use tool designed for copper tube; drill pilot hole, form collar for outlet, dimple tube to form seating stop, and braze branch tube into collar.

## 3.6 HANGER AND SUPPORT INSTALLATION

A. Pipe hanger and support devices are specified in Division 15 Section "Hangers and Supports." Install the following:
   1. Vertical Piping: MSS Type 8 or Type 42, clamps.
   2. Individual, Straight, Horizontal Piping Runs: According to the following:
      a. 100 Feet (30 m) and Less: MSS Type 1, adjustable, steel clevis hangers.
      b. Longer Than 100 Feet (30 m): MSS Type 43, adjustable roller hangers.
      c. Longer Than 100 Feet (30 m): MSS Type 49, spring cushion rolls, if indicated.
   3. Multiple, Straight, Horizontal Piping Runs 100 Feet (30 m) or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
   4. Base of Vertical Piping: MSS Type 52, spring hangers.

B. Install supports according to Division 15 Section "Hangers and Supports."

C. Support vertical piping and tubing at base and at each floor.

D. Rod diameter may be reduced 1 size for double-rod hangers, to a minimum of 3/8 inch (10 mm).

E. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 3/4 (DN 20) and Smaller: 60 inches (1500 mm) with 3/8-inch (10-mm) rod.
   2. NPS 1 and NPS 1-1/4 (DN 25 and DN 32): 72 inches (1800 mm) with 3/8-inch (10-mm) rod.
   3. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): 96 inches (2400 mm) with 3/8-inch (10-mm) rod.

F. Install supports for vertical copper tubing every 10 feet (3 m).

G. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

## 3.7 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment and machines to allow service and maintenance.

C. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.

D. Connect domestic water piping to water-service piping with shutoff valve, and extend and connect to the following:
   1. Booster Pumps: Cold-water suction and discharge piping.
   2. Water Heaters: Cold-water supply and hot-water outlet piping in sizes indicated, but not smaller than sizes of water heater connections.
   3. Plumbing Fixtures: Cold- and hot-water supply piping in sizes indicated, but not smaller than required by plumbing code. Refer to Division 15 Section "Plumbing Fixtures."
   4. Equipment: Cold- and hot-water supply piping as indicated, but not smaller than equipment connections. Provide shutoff valve and union for each connection.

## 3.8 FIELD QUALITY CONTROL

A. Inspect domestic water piping as follows:
   1. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.
   2. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
      a. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
      b. Final Inspection: Arrange final inspection for authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
   3. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
   4. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

B. Test domestic water piping as follows:
   1. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
   2. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
   3. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
   4. Cap and subject piping to static water pressure of 50 psig (345 kPa) above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
   5. Repair leaks and defects with new materials and retest piping or portion thereof until satisfactory results are obtained.
   6. Prepare reports for tests and required corrective action.

## 3.9 ADJUSTING

A. Perform the following adjustments before operation:
   1. Close drain valves, hydrants, and hose bibbs.
   2. Open shutoff valves to fully open position.
   3. Open throttling valves to proper setting.
   4. Adjust balancing valves in hot-water-circulation return piping to provide adequate flow.
      a. Manually adjust ball-type balancing valves in hot-water-circulation return piping to provide flow of hot water in each branch.
      b. Adjust calibrated balancing valves to flows indicated.
   5. Remove plugs used during testing of piping and plugs used for temporary sealing of piping during installation.
   6. Remove and clean strainer screens. Close drain valves and replace drain plugs.
   7. Remove filter cartridges from housings and verify that cartridges are as specified for application where used and are clean and ready for use.
   8. Check plumbing specialties and verify proper settings, adjustments, and operation.

## 3.10 CLEANING

A. Clean and disinfect potable domestic water piping as follows:
   1. Purge new piping and parts of existing domestic water piping that have been altered, extended, or repaired before using.
   2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction or, if methods are not prescribed, procedures described in either AWWA C651 or AWWA C652 or as described below:
      a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
      b. Fill and isolate system according to either of the following:
         1) Fill system or part thereof with water/chlorine solution with at least 50 ppm (50 mg/L) of chlorine. Isolate with valves and allow to stand for 24 hours.
         2) Fill system or part thereof with water/chlorine solution with at least 200 ppm (200 mg/L) of chlorine. Isolate and allow to stand for three hours.
      c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
      d. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedures if biological examination shows contamination.

B. Prepare and submit reports of purging and disinfecting activities.

C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

END OF SECTION 15140

# SECTION 15150 - SANITARY WASTE AND VENT PIPING

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following for soil, waste, and vent piping inside the building:

1. Pipe, tube, and fittings.
2. Special pipe fittings.
3. Encasement for underground metal piping.

B. Related Sections include the following:

1. Division 15 Section "Chemical-Waste Piping" for chemical-waste and vent piping systems.

### 1.3 DEFINITIONS

A. EPDM: Ethylene-propylene-diene terpolymer rubber.

B. PE: Polyethylene plastic.

C. PVC: Polyvinyl chloride plastic.

### 1.4 PERFORMANCE REQUIREMENTS

A. Components and installation shall be capable of withstanding the following minimum working pressure, unless otherwise indicated:

1. Soil, Waste, and Vent Piping: 10-foot head of water.

### 1.5 SUBMITTALS

A. Product Data: For pipe, tube, fittings, and couplings.

B. Shop Drawings:

1. Sovent Drainage System: Include plans, elevations, sections, and details.

C. Field quality-control inspection and test reports.

### 1.6 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

B. Comply with NSF 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping; "NSF-drain" for plastic drain piping; "NSF-tubular" for plastic continuous waste piping; and "NSF-sewer" for plastic sewer piping.

C.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Refer to Part 3 "Piping Applications" Article for applications of pipe, tube, fitting, and joining materials.

2.2 HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings: ASTM A 74, Service class.

B. Gaskets: ASTM C 564, rubber.

C. Lead and Oakum: ASTM B 29, pure lead and oakum or hemp fiber.

2.3 HUBLESS CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings: ASTM A 888 or CISPI 301.

B. Shielded Couplings: ASTM C 1277 assembly of metal shield or housing, corrosion-resistant fasteners, and rubber sleeve with integral, center pipe stop.

1. Standard, Shielded, Stainless-Steel Couplings: CISPI 310, with stainless-steel corrugated shield; stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve.
2. Heavy-Duty, Shielded, Stainless-Steel Couplings: With stainless-steel shield, stainless-steel bands and tightening devices, and ASTM C 564, rubber sleeve.

C. Rigid, Unshielded Couplings: ASTM C 1461, sleeve-type, reducing- or transition-type mechanical coupling molded from ASTM C 1440, TPE material with corrosion-resistant-metal tension band and tightening mechanism on each end.

2.4 PVC PIPE AND FITTINGS

A. Solid-Wall PVC Pipe: ASTM D 2665, drain, waste, and vent.

1. PVC Socket Fittings: ASTM D 2665, socket type, made to ASTM D 3311, drain, waste, and vent patterns.

2.5 SPECIAL PIPE FITTINGS

A. Sovent Drainage System Fittings: ASME B16.45 or ASSE 1043, cast-iron aerator and deaerator fittings.

B. Flexible, Nonpressure Pipe Couplings: Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition pattern. Include shear ring, ends of same sizes as piping to be joined, and corrosion-resistant-metal tension band and tightening mechanism on each end.

1. Sleeve Materials:
   a. For Cast-Iron Soil Pipes: ASTM C 564, rubber.
   b. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
   c. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.

C. Shielded Nonpressure Pipe Couplings: ASTM C 1460, elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.

D. Expansion Joints: Two or three-piece, ductile-iron assembly consisting of telescoping sleeve(s) with gaskets and restrained-type, ductile-iron, bell-and-spigot end sections complying with AWWA C110 or AWWA C153. Select and assemble components for expansion indicated. Include AWWA C111, ductile-iron glands, rubber gaskets, and steel bolts.

E. Wall-Penetration Fittings: Compound, ductile-iron coupling fitting with sleeve and flexing sections for up to 20-degree deflection, gaskets, and restrained-joint ends complying with AWWA C110 or AWWA C153. Include AWWA C111, ductile-iron glands, rubber gaskets, and steel bolts.

F. Tubular Fittings: ASTM F 409, PVC drainage-pattern tube and tubular fittings with ends as required for application.

2.6 ENCASEMENT FOR UNDERGROUND METAL PIPING

A. Description: ASTM A 674 or AWWA C105, high-density, crosslaminated PE film of 0.004-inch (0.10-mm) minimum thickness.

B. Form: tube.

C. Color: Black.

D.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Refer to Division 2 Section "Earthwork" for excavating, trenching, and backfilling.

3.2 PIPING APPLICATIONS

A. Flanges and unions may be used on aboveground pressure piping, unless otherwise indicated.

B. Piping installed in building plenums shall meet requirements of materials within ducts or plenums (ceiling spaces used as supply or return air plenums) and shall have a flame-spread index of not more than 25 and a smoke-developed rating of not more than 50 when tested in accordance with the test for Surface Burning Characteristics of Materials.

C. Aboveground, soil and waste piping NPS 4 (DN 100) and smaller shall be any of the following:

1. Service class, cast-iron soil pipe and fittings; gaskets; and compression joints.
2. Hubless cast-iron soil pipe and fittings; standard, shielded, stainless-steel couplings; and hubless-coupling joints.
3. Solid-wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

D. Aboveground, soil and waste piping NPS 5 (DN 125) and larger shall be any of the following:

1. Service class, cast-iron soil pipe and fittings; gaskets; and compression joints.
2. Hubless cast-iron soil pipe and fittings; standard, shielded, stainless-steel couplings; and hubless-coupling joints.
3. Solid-wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

E. Aboveground, vent piping all sizes shall be any of the following:

1. Service class, cast-iron soil pipe and fittings; gaskets; and compression joints.
2. Hubless cast-iron soil pipe and fittings; standard, shielded, stainless-steel couplings; and hubless-coupling joints.
3. Solid-wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

F. Above and belowground, sovent drainage system with soil, waste, and vent piping materials indicated.

G. Underground, soil, waste, and vent piping all sizes shall be any of the following:

1. Service class, cast-iron soil piping; gaskets; and gasketed joints.
2. Hubless cast-iron soil pipe and fittings; heavy-duty shielded, cast-iron couplings; and hubless-coupling joints.
3. Solid wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

## 3.3 PIPING INSTALLATION

A. Sanitary sewer piping outside the building is specified in Division 2 Section "Sanitary Sewerage."

B. Basic piping installation requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."

C. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers.

D. Install cast-iron sleeve with water stop and mechanical sleeve seal at each service pipe penetration through foundation wall. Select number of interlocking rubber links required to make installation watertight. Sleeves and mechanical sleeve seals are specified in Division 15 Section "Basic Mechanical Materials and Methods."

E. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."

1. Install encasement on underground piping according to ASTM A 674 or AWWA C105.

F. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if 2 fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.

G. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.

H. Install soil and waste drainage and vent piping at the following minimum slopes, unless otherwise indicated:

1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 (DN 80) and smaller; 1 percent downward in direction of flow for piping NPS 4 (DN 100) and larger.
2. Horizontal Sanitary Drainage Piping: 2 percent downward in direction of flow.
3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.

I. Install engineered soil and waste drainage and vent piping systems as follows:

1. Combination Waste and Vent: Comply with standards of authorities having jurisdiction.
2. Sovent Drainage System: Comply with ASSE 1043 and sovent fitting manufacturer's written installation instructions.
3. Reduced-Size Venting: Comply with standards of authorities having jurisdiction.

J. Sleeves are not required for cast-iron soil piping passing through concrete slabs-on-grade if slab is without membrane waterproofing.

K. Install PVC soil and waste drainage and vent piping according to ASTM D 2665.

L. Install underground PVC soil and waste drainage piping according to ASTM D 2321.

M. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

3.4 JOINT CONSTRUCTION

A. Basic piping joint construction requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."

B. Join hub-and-spigot, cast-iron soil piping with gasket joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints.

C. Join hub-and-spigot, cast-iron soil piping with calked joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for lead and oakum calked joints.

D. Join hubless cast-iron soil piping according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-coupling joints.

E. Grooved Joints: Assemble joint with keyed coupling, gasket, lubricant, and bolts according to coupling and fitting manufacturer's written instructions.

F. PVC Nonpressure Piping Joints: Join piping according to ASTM D 2665.

3.5 VALVE INSTALLATION

A. General valve installation requirements are specified in Division 15 Section "Valves."

B. Backwater Valves: Install backwater valves in piping subject to sewage backflow.

1. Horizontal Piping: Horizontal backwater valves.
2. Floor Drains: Drain outlet backwater valves, unless drain has integral backwater valve.
3. Install backwater valves in accessible locations.
4. Backwater valve are specified in Division 15 Section "Plumbing Specialties."

3.6 HANGER AND SUPPORT INSTALLATION

A. Pipe hangers and supports are specified in Division 15 Section "Hangers and Supports." Install the following:

1. Vertical Piping: MSS Type 8 or Type 42, clamps.
2. Install individual, straight, horizontal piping runs according to the following:
   a. 100 Feet (30 m) and Less: MSS Type 1, adjustable, steel clevis hangers.
   b. Longer Than 100 Feet (30 m): MSS Type 43, adjustable roller hangers.
   c. Longer Than 100 Feet (30 m), if Indicated: MSS Type 49, spring cushion rolls.
3. Multiple, Straight, Horizontal Piping Runs 100 Feet (30 m) or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
4. Base of Vertical Piping: MSS Type 52, spring hangers.

B. Install supports according to Division 15 Section "Hangers and Supports."

C. Support vertical piping and tubing at base and at each floor.

D. Rod diameter may be reduced 1 size for double-rod hangers, with 3/8-inch (10-mm) minimum rods.

E. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): 60 inches (1500 mm) with 3/8-inch (10-mm) rod.
2. NPS 3 (DN 80): 60 inches (1500 mm) with 1/2-inch (13-mm) rod.
3. NPS 4 and NPS 5 (DN 100 and DN 125): 60 inches (1500 mm) with 5/8-inch (16-mm) rod.
4. NPS 6 (DN 150): 60 inches (1500 mm) with 3/4-inch (19-mm) rod.
5. NPS 8 to NPS 12 (DN 200 to DN 300): 60 inches (1500 mm) with 7/8-inch (22-mm) rod.

F. Install supports for vertical cast-iron soil piping every 15 feet (4.5 m).

G. Install hangers for PVC piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): 48 inches (1200 mm) with 3/8-inch (10-mm) rod.
2. NPS 3 (DN 80): 48 inches (1200 mm) with 1/2-inch (13-mm) rod.
3. NPS 4 and 5 (DN 100 and 125): 48 inches (1200 mm) with 5/8-inch (16-mm) rod.
4. NPS 6 (DN 150): 48 inches (1200 mm) with 3/4-inch (19-mm) rod.
5. NPS 8 to NPS 12 (DN 200 to DN 300): 48 inches (1200 mm) with 7/8-inch (22-mm) rod.

H. Install supports for vertical PVC piping every 48 inches (1200 mm).

I. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

## 3.7 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.

C. Connect drainage and vent piping to the following:

1. Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.
2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
3. Plumbing Specialties: Connect drainage and vent piping in sizes indicated, but not smaller than required by plumbing code.
4. Equipment: Connect drainage piping as indicated. Provide shutoff valve, if indicated, and union for each connection. Use flanges instead of unions for connections NPS 2-1/2 (DN 65) and larger.

## 3.8 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

D. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
2. Leave uncovered and unconcealed new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
3. Roughing-in Plumbing Test Procedure: Test drainage and vent piping, except outside leaders, on completion of roughing-in. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water (30 kPa). From 15 minutes before inspection starts to completion of inspection, water level must not drop. Inspect joints for leaks.
4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1-inch wg (250 Pa). Use U-tube or manometer inserted in trap of water closet to measure this pressure. Air pressure must remain constant without introducing additional air throughout period of inspection. Inspect plumbing fixture connections for gas and water leaks.
5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

3.9 CLEANING

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

C. Place plugs in ends of uncompleted piping at end of day and when work stops.

3.10 PROTECTION

A. Exposed PVC Piping: Protect plumbing vents exposed to sunlight with two coats of water-based latex paint.

END OF SECTION 15150

SECTION 15211- GENERAL-SERVICE COMPRESSED-AIR PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes piping and related specialties for general-service compressed-air systems operating at 150 psig or less.

B. See Division 15 Section "General-Service Packaged Air Compressors and Receivers" for general-service air compressors and accessories

1.2 SUBMITTALS

A. Product Data: For the following:
   1. Pressure regulators. Include rated capacities and operating characteristics.
   2. Automatic drain valves.
   3. Filters. Include rated capacities and operating characteristics.
   4. Lubricators. Include rated capacities and operating characteristics.

B. Field quality-control test reports.

C. Operation and maintenance data.

1.3 QUALITY ASSURANCE

A. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for low-pressure compressed-air piping.

PART 2 - PRODUCTS

2.1 PIPES, TUBES, AND FITTINGS

A. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B, hot-dip zinc coated with ends threaded according to ASME B1.20.1.
   1. Steel Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106, Schedule 40, galvanized seamless steel pipe. Include ends matching joining method.
   2. Malleable-Iron Fittings: ASME B16.3, Class 150 or 300, threaded.
   3. Malleable-Iron Unions: ASME B16.39, Class 150 or 300, threaded.
   4. Steel Flanges: ASME B16.5, Class 150 or 300, carbon steel, threaded.
   5. Wrought-Steel Butt-Welding Fittings: ASME B16.9, Schedule 40.
   6. Steel Flanges: ASME B16.5, Class 150 or 300, carbon steel.

B. Copper Tube: ASTM B 88, Type K seamless, drawn-temper, water tube.
   1. Wrought-Copper Fittings: ASME B16.22, solder-joint pressure type or MSS SP-73, wrought copper with dimensions for brazed joints.
   2. Cast-Copper-Alloy Flanges: ASME B16.24, Class 150 or 300.
   3. Copper Unions: ASME B16.22 or MSS SP-123.

C. Transition Couplings for Metal Piping: Metal coupling or other manufactured fitting same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.

## 2.2 JOINING MATERIALS

A. Pipe-Flange Gasket Materials: Suitable for compressed-air piping system contents.
   1. ASME B16.21, nonmetallic, flat, full-face, asbestos free, 1/8-inch (3.2-mm) maximum thickness.

B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

C. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.

D. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated.

E. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer complying with ASTM F 656.

## 2.3 VALVES

A. Metal Ball, Butterfly, Check, Gate, and Globe Valves: Comply with requirements in Division 22 Section "General-Duty Valves for Plumbing Piping."

## 2.4 DIELECTRIC FITTINGS

A. General Requirements for Dielectric Fittings: Combination fitting of copper alloy and ferrous materials with insulating material; suitable for system fluid, pressure, and temperature. Include threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.

B. Dielectric Unions: Factory-fabricated union assembly, for 250-psig minimum working pressure at 180 deg F.

## 2.5 FLEXIBLE PIPE CONNECTORS

A. Bronze-Hose Flexible Pipe Connectors: Corrugated-bronze tubing with bronze wire-braid covering and ends brazed to inner tubing.
   1. Working-Pressure Rating: 200 psig (1380 kPa) minimum.

2. End Connections, NPS 2 (DN 50) and Smaller: Threaded copper pipe or plain-end copper tube.
3. End Connections, NPS 2-1/2 (DN 65) and Larger: Flanged copper alloy.

B. Stainless-Steel-Hose Flexible Pipe Connectors: Corrugated-stainless-steel tubing with stainless-steel wire-braid covering and ends welded to inner tubing.
1. Working-Pressure Rating: 200 psig minimum.
2. End Connections, NPS 2 and Smaller: Threaded steel pipe nipple.
3. End Connections, NPS 2-1/2 and Larger: Flanged steel nipple.

## 2.6 SLEEVES

A. Galvanized-Steel Sheet: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.

## 2.7 ESCUTCHEONS

A. General Requirements: Manufactured wall and ceiling escutcheons and floor plates, with ID to closely fit around pipe and tube and OD that completely covers opening.

B. One-Piece, Deep-Pattern Escutcheons: Deep-drawn, box-shaped brass with polished chrome-plated finish.

C. One-Piece, Cast-Brass Escutcheons: With set screw.
1. Finish: Polished chrome-plated and rough brass.

D. One-Piece, Floor-Plate Escutcheons: Cast iron.

## 2.8 SPECIALTIES

A. Safety Valves: ASME Boiler and Pressure Vessel Code: Section VIII, "Pressure Vessels," construction; National Board certified, labeled, and factory sealed; constructed of bronze body with poppet-type safety valve for compressed-air service.
1. Pressure Settings: Higher than discharge pressure and same or lower than receiver pressure rating.

B. Air-Main Pressure Regulators: Bronze body, pilot-operated direct acting, spring-loaded manual pressure-setting adjustment, and rated for 250-psig inlet pressure, unless otherwise indicated.

C. Air-Line Pressure Regulators: Diaphragm or pilot operated, bronze body, direct acting, spring-loaded manual pressure-setting adjustment, and rated for 200-psig minimum inlet pressure, unless otherwise indicated.

D. Automatic Drain Valves: Stainless-steel body and internal parts, rated for 200-psig minimum working pressure, capable of automatic discharge of collected condensate. Include mounting bracket if wall mounting is indicated.

E. Coalescing Filters: Coalescing type with activated carbon capable of removing water and oil aerosols; with color-change dye to indicate when carbon is saturated and warning light to indicate when selected maximum pressure drop has been exceeded. Include mounting bracket if wall mounting is indicated.

## 2.9 QUICK COUPLINGS

A. General Requirements for Quick Couplings: Assembly with locking-mechanism feature for quick connection and disconnection of compressed-air hose.

B. Automatic-Shutoff Quick Couplings: Straight-through brass body with O-ring or gasket seal and stainless-steel or nickel-plated-steel operating parts.
   1. Socket End: With one-way valve and threaded inlet for connection to piping or threaded hose fitting.
   2. Plug End: Flow-sensor-bleeder, check-valve type with barbed outlet for attaching hose.

C. Valveless Quick Couplings: Straight-through brass body with stainless-steel or nickel-plated-steel operating parts.
   1. Socket End: With O-ring or gasket seal, without valve, and with barbed inlet for attaching hose.
   2. Plug End: With barbed outlet for attaching hose.

## 2.10 HOSE ASSEMBLIES

A. Description: Compatible hose, clamps, couplings, and splicers suitable for compressed-air service, of nominal diameter indicated, and rated for 300-psig minimum working pressure, unless otherwise indicated.
   1. Hose: Reinforced double-wire-braid, CR-covered hose for compressed-air service.
   2. Hose Clamps: Stainless-steel clamps or bands.
   3. Hose Couplings: Two-piece, straight-through, threaded brass or stainless-steel O-ring or gasket-seal swivel coupling with barbed ends for connecting two sections of hose.
   4. Hose Splicers: One-piece, straight-through brass or stainless-steel fitting with barbed ends for connecting two sections of hose.

# PART 3 - EXECUTION

## 3.1 PIPING APPLICATIONS

A. Compressed-Air Piping between Air Compressors and Receivers: Use one of the following piping materials for each size range:
   1. NPS 2 and Smaller: Steel pipe; threaded, malleable-iron fittings; and threaded joints.

2. NPS 2 and Smaller: Type K copper tube; wrought-copper fittings; and brazed joints.

B. Low-Pressure Compressed-Air Distribution Piping: Use one of the following piping materials for each size range:
   1. NPS 2 and Smaller: Steel pipe; threaded, malleable-iron fittings; and threaded joints.
   2. NPS 2 and Smaller: Type K copper tube; wrought-copper fittings; and brazed or soldered joints.

C. Drain Piping: Use one of the following piping materials:
   1. NPS 2 and Smaller: Type M copper tube; wrought-copper fittings; and brazed or soldered joints.

## 3.2 VALVE APPLICATIONS

A. Comply with requirements in "Valve Applications" Article in Division 22 Section "General-Duty Valves for Plumbing Piping."

B. Equipment Isolation Valves: Safety-exhaust, copper-alloy ball valve with exhaust vent and pressure rating at least as great as piping system operating pressure.

## 3.3 PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of compressed-air piping. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, air-compressor sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.

B. Install piping concealed from view and protected from physical contact by building occupants, unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited, unless otherwise indicated.

D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal and to coordinate with other services occupying that space.

E. Install piping adjacent to equipment and machines to allow service and maintenance.

F. Install air and drain piping with 1 percent slope downward in direction of flow.

G. Install nipples, flanges, unions, transition and special fittings, and valves with pressure ratings same as or higher than system pressure rating, unless otherwise indicated.

H. Equipment and Specialty Flanged Connections:
   1. Use steel companion flange with gasket for connection to steel pipe.

2. Use cast-copper-alloy companion flange with gasket and brazed or soldered joint for connection to copper tube. Do not use soldered joints for connection to air compressors or to equipment or machines producing shock or vibration.

I. Install branch connections to compressed-air mains from top of main. Provide drain leg and drain trap at end of each main and branch and at low points.

J. Install thermometer and pressure gage on discharge piping from each air compressor and on each receiver. Comply with requirements in Division 15 Section "Meters and Gages for Plumbing Piping."

K. Install piping to permit valve servicing.

L. Install piping free of sags and bends.

M. Install fittings for changes in direction and branch connections.

N. Install unions, adjacent to each valve and at final connection to each piece of equipment and machine.

## 3.4 JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

B. Remove scale, slag, dirt, and debris from pipe and fittings before assembly.

C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Apply appropriate tape or thread compound to external pipe threads.

D. Brazed Joints for Copper Tubing: Join according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter.

E. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Join according to ASTM B 828 or CDA's "Copper Tube Handbook."

F. Flanged Joints: Use asbestos-free, nonmetallic gasket suitable for compressed air. Join flanges with gasket and bolts according to ASME B31.9 for bolting procedure.

G. Dissimilar Metal Piping Material Joints: Use dielectric fittings.

## 3.5 VALVE INSTALLATION

A. General-Duty Valves: Comply with requirements in Division 15 Section "General-Duty Valves for Plumbing Piping."

B. Install shutoff valves and unions or flanged joints at compressed-air piping to air compressors.

C. Install shutoff valve at inlet to each automatic drain valve, filter, lubricator, and pressure regulator.

D. Install check valves to maintain correct direction of compressed-air flow to and from compressed-air piping specialties and equipment.

## 3.6 DIELECTRIC FITTING INSTALLATION

A. Install dielectric unions in piping at connections of dissimilar metal piping and tubing.

## 3.7 FLEXIBLE PIPE CONNECTOR INSTALLATION

A. Install flexible pipe connectors in discharge piping and in inlet air piping from remote air-inlet filter of each air compressor.

B. Install bronze-hose flexible pipe connectors in copper compressed-air tubing.

C. Install stainless-steel-hose flexible pipe connectors in steel compressed-air piping.

## 3.8 SPECIALTY INSTALLATION

A. Install safety valves on receivers in quantity and size to relieve at least the capacity of connected air compressors.

B. Install air-main pressure regulators in compressed-air piping at or near air compressors.

C. Install air-line pressure regulators in branch piping to equipment.

D. Install automatic drain valves on aftercoolers, receivers, and dryers. Discharge condensate onto nearest floor drain.

E. Install coalescing filters in compressed-air piping at or near air compressors.

F. Install quick couplings at piping terminals for hose connections.

G. Install hose assemblies at hose connections.

## 3.9 SLEEVE INSTALLATION

A. Install sleeves for pipes passing through concrete and masonry walls, gypsum board partitions, and concrete floor and roof slabs using galvanized-steel pipe.

B. Install sleeves in new walls and slabs as new walls and slabs are constructed.

C. Install sleeves that are large enough to provide 1/4-inch annular clear space between sleeve and pipe or pipe insulation. Use Steel Pipe Sleeves.

D. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."

## 3.10 ESCUTCHEON INSTALLATION

A. Install escutcheons for penetrations of walls, ceilings, and floors according to the following:

B. Piping with Fitting or Sleeve Protruding from Wall: One piece, deep pattern.

C. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One piece, cast brass with polished chrome-plated finish.

D. Bare Piping at Ceiling Penetrations in Finished Spaces: One piece, cast brass with polished chrome-plated finish.

E. Bare Piping in Unfinished Service Spaces: One piece, cast brass with rough-brass finish.

F. Bare Piping in Equipment Rooms: One piece, cast brass.

G. Bare Piping at Floor Penetrations in Equipment Rooms: One-piece floor plate.

## 3.11 HANGER AND SUPPORT INSTALLATION

A. Comply with requirements in Division 15 Section "Hangers and Supports for Plumbing Piping and Equipment" for pipe hanger and support devices.

B. Vertical Piping: MSS Type 8 or 42, clamps.

C. Individual, Straight, Horizontal Piping Runs:
   1. 100 Feet or Less: MSS Type 1, adjustable, steel clevis hangers.
   2. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.

D. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.

E. Base of Vertical Piping: MSS Type 52, spring hangers.

F. Support horizontal piping within 12 inches of each fitting and coupling.

G. Rod diameter may be reduced 1 size for double-rod hangers, with 3/8-inch minimum rods.

H. Install hangers for Schedule 40, steel piping with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 1/4 to NPS 1/2: 96 inches with 3/8-inch rod.
   2. NPS 3/4 to NPS 1-1/4: 84 inches with 3/8-inch rod.
   3. NPS 1-1/2: 12 feet with 3/8-inch rod.
   4. NPS 2: 13 feet with 3/8-inch rod.

I. Install supports for vertical, Schedule 40, steel piping every 15 feet.

J. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 1/2: 72 inches with 3/8-inch rod.
   2. NPS 3/4: 84 inches with 3/8-inch rod.
   3. NPS 1: 96 inches with 3/8-inch rod.
   4. NPS 1-1/4: 108 inches with 3/8-inch rod.
   5. NPS 1-1/2: 10 feet with 3/8-inch rod.
   6. NPS 2 : 11 feet with 3/8-inch rod.

K. Install supports for vertical copper tubing every 10 feet .

## 3.12 LABELING AND IDENTIFICATION

A. Install identifying labels and devices for general-service compressed-air piping, valves, and specialties. Comply with requirements in Division 15 Section "Identification for Plumbing Piping and Equipment."

## 3.13 FIELD QUALITY CONTROL

A. Perform field tests and inspections.

B. Tests and Inspections:
   1. Piping Leak Tests: Test new and modified parts of existing piping. Cap and fill general-service compressed-air piping with oil-free dry air or gaseous nitrogen to pressure of 50 psig above system operating pressure, but not less than 150 psig . Isolate test source and let stand for four hours to equalize temperature. Refill system, if required, to test pressure; hold for two hours with no drop in pressure.
   2. Repair leaks and retest until no leaks exist.
   3. Inspect filters and pressure regulators for proper operation.

END OF SECTION 15211

# SECTION 15410 - PLUMBING FIXTURES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes plumbing fixtures and related components.

B. Related Sections include the following:
   1. Division 15 Section "Drinking Fountains and Water Coolers."
   2. Division 15 Section "Plumbing Specialties" for backflow preventers and specialty fixtures not in this Section.

### 1.3 DEFINITIONS

A. Accessible Fixture: Plumbing fixture that can be approached, entered, and used by people with disabilities.

B. Fitting: Device that controls flow of water into or out of plumbing fixture. Fittings specified in this Section include supplies and stops, faucets and spouts, shower heads and tub spouts, drains and tailpieces, and traps and waste pipes. Piping and general-duty valves are included where indicated.

### 1.4 SUBMITTALS

A. Product Data: Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports and indicate materials and finishes, dimensions, construction details, and flow-control rates for each type of fixture indicated.

B. Shop Drawings: Diagram power, signal, and control wiring and differentiate between manufacturer-installed and field-installed wiring.

C. Maintenance Data: For plumbing fixtures to include in maintenance manuals specified in Division 1.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category through one source from a single manufacturer.

1. Exception: If fixtures, faucets, or other components are not available from a single manufacturer, obtain similar products from other manufacturers specified for that category.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; about plumbing fixtures for people with disabilities.

D. Regulatory Requirements: Comply with requirements in U.S. Architectural & Transportation Barriers Compliance Board's "Uniform Federal Accessibility Standards (UFAS), 1985-494-187" about plumbing fixtures for people with disabilities.

E. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.

F. NSF Standard: Comply with NSF 61, "Drinking Water System Components--Health Effects," for fixture materials that will be in contact with potable water.

G. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.

H. Comply with the following applicable standards and other requirements specified for plumbing fixtures:

1. Enameled, Cast-Iron Fixtures: ASME A112.19.1M.
2. Hand Sinks: NSF 2 construction.
3. Porcelain-Enameled, Formed-Steel Fixtures: ASME A112.19.4M.
4. Slip-Resistant Bathing Surfaces: ASTM F 462.
5. Stainless-Steel Fixtures Other Than Service Sinks: ASME A112.19.3M.
6. Vitreous-China Fixtures: ASME A112.19.2M.
7. Water-Closet, Flush Valve, Tank Trim: ASME A112.19.5.
8. Water-Closet, Flushometer Tank Trim: ASSE 1037.

I. Comply with the following applicable standards and other requirements specified for lavatory and sink faucets:

1. Backflow Protection Devices for Faucets with Side Spray: ASME A112.18.3M.
2. Backflow Protection Devices for Faucets with Hose-Thread Outlet: ASME A112.18.3M.
3. Diverter Valves for Faucets with Hose Spray: ASSE 1025.
4. Faucet Hose: ASTM D 3901.

5. Faucets: ASME A112.18.1M.
6. Hose-Connection Vacuum Breakers: ASSE 1011.
7. Hose-Coupling Threads: ASME B1.20.7.
8. Integral, Atmospheric Vacuum Breakers: ASSE 1001.
9. NSF Materials: NSF 61.
10. Pipe Threads: ASME B1.20.1.
11. Supply and Drain Fittings: ASME A112.18.1M.

J. Comply with the following applicable standards and other requirements specified for bathtub and shower faucets:

1. Backflow Protection Devices for Hand-Held Showers: ASME A112.18.3M.
2. Combination, Pressure-Equalizing and Thermostatic-Control Antiscald Faucets: ASSE 1016.
3. Faucets: ASME A112.18.1M.
4. Hand-Held Showers: ASSE 1014.
5. High-Temperature-Limit Controls for Thermal-Shock-Preventing Devices: ASTM F 445.
6. Hose-Coupling Threads: ASME B1.20.7.
7. Manual-Control Antiscald Faucets: ASTM F 444.
8. Pipe Threads: ASME B1.20.1.
9. Pressure-Equalizing-Control Antiscald Faucets: ASTM F 444 and ASSE 1016.
10. Thermostatic-Control Antiscald Faucets: ASTM F 444 and ASSE 1016.

K. Comply with the following applicable standards and other requirements specified for miscellaneous fittings:

1. Atmospheric Vacuum Breakers: ASSE 1001.
2. Brass and Copper Supplies: ASME A112.18.1M.
3. Manual-Operation Flushometers: ASSE 1037.
4. Tubular Brass Drainage Fittings and Piping: ASME A112.18.1M.

L. Comply with the following applicable standards and other requirements specified for miscellaneous components:

1. Floor Drains: ASME A112.21.1M.
2. Hose-Coupling Threads: ASME B1.20.7.
3. Off-Floor Fixture Supports: ASME A112.6.1M.
4. Pipe Threads: ASME B1.20.1.
5. Plastic Toilet Seats: ANSI Z124.5.
6. Supply and Drain Protective Shielding Guards: ICC A117.1.

## 1.6 COORDINATION

A. Coordinate roughing-in and final plumbing fixture locations, and verify that fixtures can be installed to comply with original design and referenced standards.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. For fixture descriptions in other Part 2 articles where the subparagraph titles "Manufacturers" introduce a list of manufacturers, the following requirements apply for product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified in other Part 2 articles.

2.2 LAVATORY FAUCETS

A. Lavatory Faucet,: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor.

   1. Available Manufacturers:

      a. American Standard.

      b. T & S Brass.

      c. Kohler.

      d. Chicago.

   2. Refer to Plumbing Schedule for specification standards.

2.3 SHOWER FAUCETS

A. Shower Faucet: Include hot- and cold-water indicators; tub spout; and shower head, arm, and flange. Coordinate faucet inlets with supplies and outlet with diverter valve.
   1. Manufacturers:

      a. American Standard.

      b. T & S Brass.

      c. Kohler.

      d. Chicago.

   2. Refer to Plumbing Schedule for specification standards.

2.4 SINK FAUCETS

A. Sink Faucet: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor.

1. Manufacturers:

    a. American Standard.

    b. T & S Brass.

    c. Kohler.

    d. Chicago.

2. Refer to Plumbing Schedule for specification standards.

## 2.5 FLUSHOMETERS

A. Flushometer: Cast-brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, and copper or brass tubing, and polished chrome-plated finish on exposed parts.
   1. Manufacturers:

      a. Sloan, Royal.

      b. Zurn, Aquaflush, AT.

   2. Refer to Plumbing Schedule for specification standards.

## 2.6 TOILET SEATS

A. Toilet Seat: Solid plastic.
   1. Manufacturers:

      a. Church.

      b. American Standard.

      c. Olsenite.

   2. Refer to Plumbing Schedule for specification standards.

## 2.7 PROTECTIVE SHIELDING GUARDS

A. Protective Shielding Guard: Manufactured, plastic covering for hot- and cold-water supplies and trap and drain piping and complying with ADA requirements.
   1. Manufacturers:

      a. Plumerer.

      b. Truebro.

c. McGuire.

d. Engineered Brass.

2.8 FIXTURE SUPPORTS

A. Lavatory Support: Type II, lavatory carrier with concealed arms and tie rod. Include steel uprights with feet.
1. Manufacturers:

a. Josam.

b. Mifab.

c. Smith.

d. Wade.

e. Zurn.

2. Accessible Fixture Support: Include rectangular steel uprights.

2.9 WATER CLOSETS

A. Water Closets,: Accessible and standard, wall hung and floor mounted, vitreous-china fixture designed for gravity-type tank, flushometer tank, or flushometer valve operation.
1. Products:

a. American Standard, Inc.
b. Crane Plumbing/Fiat Products.
c. Kohler Co.
d. Eljer Plumbingware.

2. Refer to Plumbing Schedule for Specification Standards.

2.10 URINALS

A. Urinals,: Accessible and standard Wall-hanging, bottom-outlet, vitreous-china fixture designed for flushometer valve operation.
1. Products:

a. American Standard.
b. Crane Plumbing/Fiat Products.
c. Kohler Co.
d. Eljer Plumbingware.
2. Refer to Plumbing Schedule for Specification Standards.

2.11 LAVATORIES

A. Lavatories: Accessible and standard, Wall-hanging, vitreous-china fixture.
   1. Products:
      a. American Standard, Inc.
      b. Crane Plumbing/Fiat Products.
      c. Kohler Co.
      d. Eljer Plumbingware.
   2. Refer to Plumbing Schedule for Specification Standards.

2.12 KITCHEN SINKS

A. Kitchen Sinks: Counter-mounting, stainless-steel fixture.
   1. Products:
      a. Elkay Manufacturing Co.
      b. Just Manufacturing Co.
      c. Kohler Co.
      d. Sterling Plumbing Group, Inc.
   2. Refer to Plumbing Schedule for Specifications Standards.

2.13 SERVICE BASINS

A. Service Basins,: Flush-to-wall, floor-mounting precast terrazzo basin with rim guard.

   1. Available Products:
   2. Products:

      a. Acorn Engineering Co.
      b. Crane Plumbing/Fiat Products.
      c. Precast Terrazzo Enterprises, Inc.
      d. Stern-Williams Co., Inc.
   3. Refer to Plumbing Schedule for Specification Standards.

2.14 WASH FOUNTAINS

A. Wash Fountains,: Accessible, Circular, semi-circular, and flush-to-wall freestanding-design and wall-hung, wash-up fixture.
   1. Products:

      a. Acorn Engineering Co.
      b. Bradley Corporation.
      c. Intersan Manufacturing Co.
   2. Refer to Plumbing Schedule for Specification Standards.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for water soil and for waste piping systems and supports to verify actual locations and sizes of piping connections and that locations and types of supports match those indicated, before plumbing fixture installation. Use manufacturer's roughing-in data if roughing-in data are not indicated.

B. Examine walls, floors, and cabinets for suitable conditions where fixtures are to be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FIXTURE INSTALLATION

A. Assemble fixtures, trim, fittings, and other components according to manufacturers' written instructions.

B. For wall-hanging fixtures, install off-floor supports affixed to building substrate.

1. Use carrier supports with waste fitting and seal for back-outlet fixtures.
2. Use carrier supports without waste fitting for fixtures with tubular waste piping.
3. Use chair-type carrier supports with rectangular steel uprights for accessible fixtures.

C. Install back-outlet, wall-hanging fixtures onto waste fitting seals and attach to supports.

D. Install floor-mounting fixtures on closet flanges or other attachments to piping or building substrate.

E. Install wall-hanging fixtures with tubular waste piping attached to supports.

F. Install floor-mounting, back-outlet water closets attached to building floor substrate and wall bracket and onto waste fitting seals.

G. Install counter-mounting fixtures in and attached to casework.

H. Install fixtures level and plumb according to manufacturers' written instructions and roughing-in drawings.

I. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.

1. Exception: Use ball, gate, or globe valve if stops are not specified with fixture. Refer to Division 15 Section "Valves" for general-duty valves.

J. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.

K. Install tubular waste piping on drain outlet of each fixture to be indirectly connected to drainage system.

L. Install flushometer valves for accessible water closets and urinals with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.

M. Install toilet seats on water closets.

N. Install faucet-spout fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.

O. Install water-supply, flow-control fittings with specified flow rates in fixture supplies at stop valves.

P. Install faucet, flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.

Q. Install shower, flow-control fittings with specified maximum flow rates in shower arms.

R. Install traps on fixture outlets.

1. Exception: Omit trap on fixtures with integral traps.
2. Exception: Omit trap on indirect wastes, unless otherwise indicated.

S. Install escutcheons at piping wall ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for escutcheons.

T. Seal joints between fixtures and walls, floors, and counters using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color. Refer to Division 7 Section "Joint Sealants" for sealant and installation requirements.

## 3.3 CONNECTIONS

A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect water supplies from water distribution piping to fixtures.

C. Connect drain piping from fixtures to drainage piping.

D. Supply and Waste Connections to Plumbing Fixtures: Connect fixtures with water supplies, stops, risers, traps, and waste piping. Use size fittings required to match fixtures. Connect to plumbing piping.

E. Supply and Waste Connections to Fixtures and Equipment Specified in Other Sections: Connect fixtures and equipment with water supplies, stops, risers, traps, and waste piping

specified. Use size fittings required to match fixtures and equipment. Connect to plumbing piping.

F. Ground equipment.

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

## 3.4 FIELD QUALITY CONTROL

A. Verify that installed fixtures are categories and types specified for locations where installed.

B. Check that fixtures are complete with trim, faucets, fittings, and other specified components.

C. Inspect installed fixtures for damage. Replace damaged fixtures and components.

D. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.

## 3.5 ADJUSTING

A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.

B. Adjust water pressure at faucets, shower valves, and flushometer valves to produce proper flow and stream.

C. Replace washers and seals of leaking and dripping faucets and stops.

## 3.6 CLEANING

A. Clean fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials. Do the following:

1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
2. Remove sediment and debris from drains.

## 3.7 PROTECTION

A. Provide protective covering for installed fixtures and fittings.

B. Do not allow use of fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 15410

# SECTION 15415 - DRINKING FOUNTAINS AND WATER COOLERS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:
   1. Drinking fountains.
   2. Water coolers.
   3. Fixture supports.

### 1.3 DEFINITIONS

A. Accessible: Fixture that can be approached and used by people with disabilities.

B. Fitting: Device that controls flow of water into or out of fixture.

C. Fixture: Drinking fountain or water cooler, unless one is specifically indicated.

D. Water Cooler: Electrically powered fixture for generating and delivering cooled drinking water.

### 1.4 SUBMITTALS

A. Product Data: Include rated capacities; shipping, installed, and operating weights; furnished specialties; and accessories for each type of fixture indicated.

B. Shop Drawings: Diagram power, signal, and control wiring and differentiate between manufacturer-installed and field-installed wiring.

C. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

D. Maintenance Data: For fixtures to include in maintenance manuals specified in Division 1.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; about fixtures for people with disabilities.

C. Regulatory Requirements: Comply with requirements in the U.S. Architectural & Transportation Barriers Compliance Board's "Uniform Federal Accessibility Standards (UFAS), 1985-494-187" about fixtures for people with disabilities.

D. NSF Standard: Comply with NSF 61, "Drinking Water System Components--Health Effects," for fixture materials that will be in contact with potable water.

E. ARI Standard: Comply with ARI 1010, "Self-Contained, Mechanically Refrigerated Drinking-Water Coolers," for water coolers and with ARI's "Directory of Certified Drinking Water Coolers" for type and style classifications.

1.6 COORDINATION

A. Coordinate roughing-in and final fixture locations, and verify that fixtures can be installed to comply with original design and referenced standards.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. For fixture descriptions in other Part 2 articles where the subparagraph titles "Manufacturers" introduce a list of manufacturers and their products or manufacturers only, the following requirements apply for product selection:
   1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified in other Part 2 articles.

2.2 WATER COOLERS

A. Water Coolers,: Accessible, ARI 1010, pressure with bubbler fixture.
   1. Products:
      a. Elkay Manufacturing Co.
      b. Halsey Taylor.
      c. Oasis Corp.
   2. Refer to Plumbing Schedule for specification standards.

2.3 FIXTURE SUPPORTS

A. Off-Floor, Plumbing Fixture Supports: ASME A112.6.1M, water-cooler carriers. Include vertical, steel uprights with feet and tie rods and bearing plates with mounting studs matching fixture to be supported.
   1. Manufacturers:
      a. Josam Co.
      b. Smith.
      c. Wade.
      d. Zurn Specifications Drainage Operation.
   2. Type I: Hanger-type carrier with two vertical uprights.
   3. Type II: Bilevel, hanger-type carrier with three vertical uprights.
   4. Supports for Accessible Fixtures: Include rectangular, vertical, steel uprights instead of steel pipe uprights.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for water and waste piping systems to verify actual locations of piping connections before fixture installation. Verify that sizes and locations of piping and types of supports match those indicated.

B. Examine walls and floors for suitable conditions where fixtures are to be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLICATIONS

A. Use carrier off-floor supports for wall-hanging fixtures, unless otherwise indicated.

B. Use mounting frames for recessed water coolers, unless otherwise indicated.

C. Set freestanding and pedestal drinking fountains on floor.

D. Use chrome-plated brass or copper tube, fittings, and valves in locations exposed to view. Plain copper tube, fittings, and valves may be used in concealed locations.

3.3 INSTALLATION

A. Install off-floor supports affixed to building substrate and attach wall-hanging fixtures, unless otherwise indicated.

B. Install mounting frames affixed to building construction and attach recessed water coolers to mounting frames, unless otherwise indicated.

C. Install fixtures level and plumb.

D. Install water-supply piping with shutoff valve on supply to each fixture to be connected to water distribution piping. Use ball, gate, or globe valve. Install valves in locations where they can be easily reached for operation. Refer to Division 15 Section "Valves" for general-duty valves.

E. Install trap and waste piping on drain outlet of each fixture to be connected to sanitary drainage system.

F. Install pipe escutcheons at wall penetrations in exposed, finished locations. Use deep-pattern escutcheons where required to conceal protruding pipe fittings. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for escutcheons.

G. Seal joints between fixtures and walls and floors using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color. Refer to Division 7 Section "Joint Sealants" for sealant and installation requirements.

## 3.4 CONNECTIONS

A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect water supplies from water distribution piping to fixtures.

C. Connect drain piping from fixtures to drainage piping.

D. Ground equipment.
   1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

## 3.5 FIELD QUALITY CONTROL

A. Water-Cooler Testing: After electrical circuitry has been energized, test for compliance with requirements. Test and adjust controls and safeties.

B. Repair or replace malfunctioning units. Retest as specified above after repairs or replacements are made.

C. Report test results in writing.

## 3.6 ADJUSTING

A. Adjust fixture flow regulators for proper flow and stream height.

B. Adjust water-cooler temperature settings.

3.7 CLEANING

A. After completing fixture installation, inspect unit. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish.

B. Clean fixtures, on completion of installation, according to manufacturer's written instructions.

END OF SECTION 15415

# SECTION 15430 - PLUMBING SPECIALTIES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following plumbing specialties:

1. Backflow preventers.
2. Balancing valves.
3. Thermostatic water mixing valves.
4. Outlet boxes.
5. Washer-supply outlets.
6. Key-operation hydrants.
7. Wheel-handle wall hydrants.
8. Trap seal primer valves.
9. Drain valves.
10. Miscellaneous piping specialties.
11. Sleeve penetration systems.
12. Flashing materials.
13. Cleanouts.
14. Floor drains.
15. Trench drains.
16. Sand and oil interceptors.

### 1.3 DEFINITIONS

A. The following are industry abbreviations for plastic piping materials:

1. ABS: Acrylonitrile-butadiene-styrene plastic.
2. PE: Polyethylene plastic.
3. PUR: Polyurethane plastic.
4. PVC: Polyvinyl chloride plastic.

### 1.4 PERFORMANCE REQUIREMENTS

A. Provide components and installation capable of producing piping systems with following minimum working-pressure ratings, unless otherwise indicated:

1. Domestic Water Piping: 125 psig (860 kPa).
2. Sanitary Waste and Vent Piping: 10-foot head of water (30 kPa).

## 1.5 SUBMITTALS

A. Product Data: Include rated capacities and shipping, installed, and operating weights. Indicate materials, finishes, dimensions, required clearances, and methods of assembly of components; and piping and wiring connections for the following:

1. Backflow preventers.
2. Balancing valves and strainers.
3. Thermostatic water mixing valves.
4. Water hammer arresters, air vents, and trap seal primer and systems.
5. Drain valves, hose bibbs, hydrants.
6. Outlet boxes.
7. Cleanouts, floor drains, open receptors, and trench drains.
8. Air-admittance valves, vent caps, vent terminals, and roof flashing assemblies.
9. Solids sand and oil interceptors.
10. Sleeve penetration systems.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Field test reports.

D. Maintenance Data: For plumbing specialties to include in maintenance manuals. Include the following:

1. Backflow preventers.
2. Trap seal primer systems.
3. Hydrants.
4. Sand and oil interceptors.
5. Thermostatic water mixing valves.
6. Balancing valves and strainers.

## 1.6 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of plumbing specialties and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

B. Plumbing specialties shall bear label, stamp, or other markings of specified testing agency.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for piping materials and installation.

E. NSF Compliance:

1. Comply with NSF 14, "Plastics Piping Components and Related Materials," for plastic domestic water piping components. Include marking "NSF-pw" on plastic potable-water piping and "NSF-dwv" on plastic drain, waste, and vent piping.
2. Comply with NSF 61, "Drinking Water System Components--Health Effects, Sections 1 through 9," for potable domestic water plumbing specialties.

## 1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Operating Key Handles: Equal to 100 percent of amount installed for each key-operated hose bibb and hydrant installed.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

## 2.2 BACKFLOW PREVENTERS

A. Available Manufacturers:

B. Manufacturers:
1. B & K Industries, Inc.
2. Cla-Val Co.
3. Conbraco Industries, Inc.
4. Mueller Co.; Hersey Meters Div.
5. Park Equipment.
6. Watts Industries, Inc.; Water Products Div.
7. Zurn Industries, Inc.; Wilkins Div.

C. General: ASSE standard, backflow preventers.

1. NPS 2 (DN 50) and Smaller: Bronze body with threaded ends.

    a. Interior Lining: AWWA C550 or FDA-approved, epoxy coating for backflow preventers having cast-iron or steel body.

2. Interior Components: Corrosion-resistant materials.
3. Exterior Finish: Polished chrome plate if used in chrome-plated piping system.
4. Strainer: On inlet, if indicated.

D. Hose-Connection Vacuum Breakers: ASSE 1011, nickel plated, with nonremovable and manual drain features, and ASME B1.20.7, garden-hose threads on outlet. Units attached to rough-bronze-finish hose connections may be rough bronze.

E. Intermediate Atmospheric-Vent Backflow Preventers: ASSE 1012, suitable for continuous pressure application. Include inlet screen and two independent check valves with intermediate atmospheric vent.

F. Reduced-Pressure-Principle Backflow Preventers: ASSE 1013, suitable for continuous pressure application. Include outside screw and yoke gate valves on inlet and outlet, and strainer on inlet; test cocks; and pressure-differential relief valve with ASME A112.1.2 air-gap fitting located between two positive-seating check valves.

1. Pressure Loss: 12 psig (83 kPa) maximum, through middle 1/3 of flow range.

G. Double-Check Backflow Prevention Assemblies: ASSE 1015, suitable for continuous pressure application. Include shutoff valves on inlet and outlet, and strainer on inlet; test cocks; and two positive-seating check valves.

1. Pressure Loss: 5 psig (35 kPa) maximum, through middle 1/3 of flow range.

H. Antisiphon-Pressure-Type Vacuum Breakers: ASSE 1020, suitable for continuous pressure application. Include shutoff valves, spring-loaded check valve, spring-loaded floating disc, test cocks, and atmospheric vent.

1. Pressure Loss: 5 psig (35 kPa) maximum, through middle 1/3 of flow range.

I. Dual-Check-Valve-Type Backflow Preventers: ASSE 1024, suitable for continuous pressure application. Include union inlet and two independent check valves.

J. Reduced-Pressure Detector Assembly Backflow Preventers: ASSE 1047, FM approved or UL listed, and suitable for continuous pressure application. Include outside screw and yoke gate valves on inlet and outlet, and strainer on inlet. Include test cocks; pressure-differential relief valve with ASME A112.1.2 air-gap fitting located between two positive-seating check valves; and bypass with displacement-type water meter, valves, and reduced-pressure backflow preventer.

1. Pressure Loss: 12 psig (83 kPa) maximum, through middle 1/3 of flow range.

K. Double-Check Detector Assembly Backflow Preventers: ASSE 1048, FM approved or UL listed, and suitable for continuous pressure application. Include outside screw and yoke gate valves on inlet and outlet, and strainer on inlet. Include test cocks; two positive-seating check valves; and bypass with displacement-type water meter, valves, and double-check backflow preventer.

1. Pressure Loss: 5 psig (35 kPa) maximum, through middle 1/3 of flow range.

L. Hose-Connection Backflow Preventers: ASSE 1052, suitable for at least 3-gpm (0.19-L/s) flow and applications with up to 10-foot head of water (30-kPa) back pressure. Include two check valves; intermediate atmospheric vent; and nonremovable, ASME B1.20.7, garden-hose threads on outlet.

M. Back-Siphonage Backflow Vacuum Breakers: ASSE 1056, suitable for continuous pressure and backflow applications. Include shutoff valves, check valve, test cocks, and vacuum vent.

## 2.3 OUTLET BOXES

A. Available Manufacturers:

1. Acorn Engineering Company.
2. Gray, Guy Manufacturing Co., Inc.
3. Oatey.
4. Symmons Industries, Inc.
5. Zurn Industries, Inc.; Jonespec Div.

B. General: Recessed-mounting outlet boxes with supply fittings complying with ASME A112.18.1M. Include box with faceplate, services indicated for equipment connections, and wood-blocking reinforcement.

C. Icemaker Outlet Boxes: With hose connection. Refer to plumbing schedules for further information.

D. Reinforcement: 2-by-4-inch (38-by-89-mm) fire-retardant-treated-wood blocking between studs. Fire-retardant-treated-wood blocking is specified in Division 6 Section "Rough Carpentry."

## 2.4 KEY-OPERATION HYDRANTS

A. Available Manufacturers:

1. Josam Co.
2. Simmons Manufacturing Co.
3. Smith, Jay R. Mfg. Co.
4. Tyler Pipe; Wade Div.
5. Watts Industries, Inc.
6. Woodford Manufacturing Co.

7. Zurn Industries.

B. General: ASME A112.21.3M, key-operation hydrant with pressure rating of 125 psig (860 kPa). Refer to plumbing schedule for further information.

## 2.5 WHEEL-HANDLE WALL HYDRANTS

A. Available Manufacturers:
1. B & K Industries, Inc.
2. NIBCO INC.
3. Sioux Chief Manufacturing Co., Inc.
4. Watts Industries, Inc.; Water Products Div.
5. Woodford Manufacturing Co.
6. Zurn Industries, Inc.; Jonespec Div.

B. Refer to plumbing schedule for further information.

## 2.6 TRAP SEAL PRIMER VALVES

A. Supply-Type Trap Seal Primer Valves: ASSE 1018, water-supply-fed type, with the following characteristics:

1. Available Manufacturers:
   a. Josam Co.
   b. MIFAB Manufacturing, Inc.
   c. Precision Plumbing Products, Inc.
   d. Smith.
   e. Wade.
   f. Watts Industries, Inc.
   g. Zurn Industries.

2. 125-psig (860-kPa) minimum working pressure.
3. Bronze body with atmospheric-vented drain chamber.
4. Inlet and Outlet Connections: NPS 1/2 (DN 15) threaded, union, or solder joint.
5. Gravity Drain Outlet Connection: NPS 1/2 (DN 15) threaded or solder joint.
6. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.

## 2.7 DRAIN VALVES

A. Hose-End Drain Valves: MSS SP-110, NPS 3/4 (DN 20) ball valve, rated for 400-psig (2760-kPa) minimum CWP. Include two-piece, copper-alloy body with standard port, chrome-plated brass ball, replaceable seats and seals, blowout-proof stem, and vinyl-covered steel handle.

1. Inlet: Threaded or solder joint.
2. Outlet: Short-threaded nipple with ASME B1.20.7, garden-hose threads and cap.

B. Hose-End Drain Valve: MSS SP-80, gate valve, Class 125, ASTM B 62 bronze body, with NPS 3/4 (DN 20) threaded or solder-joint inlet and ASME B1.20.7, garden-hose threads on outlet and cap. Hose bibbs are prohibited for this application.

C. Stop-and-Waste Drain Valves: MSS SP-110, ball valve, rated for 200-psig (1380-kPa) minimum CWP or MSS SP-80, Class 125, gate valve; ASTM B 62 bronze body, with NPS 1/8 (DN 6) side drain outlet and cap.

## 2.8 MISCELLANEOUS PIPING SPECIALTIES

A. Water Hammer Arresters: ASSE 1010 or PDI-WH 201, piston type with pressurized metal-tube cushioning chamber. Sizes indicated are based on ASSE 1010, Sizes AA and A through F or PDI-WH 201, Sizes A through F.

1. Available Manufacturers:
    a. Josam Co.
    b. Precision Plumbing Products, Inc.
    c. Sioux Chief Manufacturing Co., Inc.
    d. Watts Industries, Inc.
    e. Zurn Industries, Inc.

B. Hose Bibbs: Bronze body with replaceable seat disc complying with ASME A112.18.1M for compression-type faucets. Include NPS 1/2 or NPS 3/4 (DN 15 or DN 20) threaded or solder-joint inlet, of design suitable for pressure of at least 125 psig (860 kPa); integral nonremovable, drainable hose-connection vacuum breaker; and garden-hose threads complying with ASME B1.20.7 on outlet.

1. Finish for Equipment Rooms: Rough bronze, or chrome or nickel plated.
2. Finish for Service Areas: Rough bronze.
3. Finish for Finished Rooms: Chrome or nickel plated.
4. Operation for Equipment Rooms: Wheel handle or operating key.
5. Operation for Service Areas: Operating key.
6. Operation for Finished Rooms: Operating key.
7. Include operating key with each operating-key hose bibb.
8. Include wall flange with each chrome- or nickel-plated hose bibb.

C. Air Vents: Float type for automatic air venting.

1. Bolted Construction: Bronze body with replaceable, corrosion-resistant metal float and stainless-steel mechanism and seat; threaded NPS 3/8 (DN 10) minimum inlet; 125-psig (860-kPa) minimum pressure rating at 140 deg F (60 deg C); and threaded vent outlet.
2. Welded Construction: Stainless-steel body with corrosion-resistant metal float, stainless-steel mechanism and seat, threaded NPS 3/8 (DN 10) minimum inlet, 150-psig (1035-kPa) minimum pressure rating, and threaded vent outlet.

D. Air-Admittance Valves: Plastic housing with mechanical-operation sealing diaphragm, designed to admit air into drainage and vent piping and to prevent transmission of sewer gas into building.

1. Available Manufacturers:

    a. B & K Industries, Inc.
    b. IPS Corporation.
    c. J & B Products.
    d. Oatey.
    e. Sioux Chief Manufacturing Co., Inc.

2. Stack Vent Valve: ASSE 1050, designed for installation as terminal on soil, waste, and vent stacks, instead of stack vent extending through roof, in NPS 2 to NPS 4 (DN 50 to DN 100).
3. Fixture Vent Valve: ASSE 1051, designed for installation on waste piping, instead of vent connection, for single fixture, in NPS 1-1/4 to NPS 2 (DN 32 to DN 50).

E. Roof Flashing Assemblies: Manufactured assembly made of 4-lb/sq. ft., 0.0625-inch- thick, lead flashing collar and skirt extending at least 8 inches from pipe with galvanized steel boot reinforcement, and counterflashing fitting.

1. Available Manufacturers:
2. Manufacturers:

    a. Acorn Engineering Company; Elmdor/Stoneman Div.

3. Open-Top Vent Cap: Without cap.
4. Low-Silhouette Vent Cap: With vandal-proof vent cap.
5. Extended Vent Cap: With field-installed, vandal-proof vent cap.

F. Open Drains: Shop or field fabricate from ASTM A 74, Service class, hub-and-spigot, cast-iron, soil-pipe fittings. Include P-trap, hub-and-spigot riser section; and where required, increaser fitting, joined with ASTM C 564, rubber gaskets.

G. Deep-Seal Traps: Cast-iron or bronze casting, with inlet and outlet matching connected piping and cleanout trap seal primer valve connection.

1. NPS 2 (DN 50): 4-inch- (100-mm-) minimum water seal.
2. NPS 2-1/2 (DN 65) and Larger: 5-inch- (125-mm-) minimum water seal.

H. Floor-Drain Inlet Fittings: Cast iron, with threaded inlet and threaded or spigot outlet, and trap seal primer valve connection.

I. Fixed Air-Gap Fittings: Manufactured cast-iron or bronze drainage fitting with semiopen top with threads or device to secure drainage inlet piping in top and bottom spigot or threaded outlet larger than top inlet. Include design complying with ASME A112.1.2 that will provide fixed air gap between installed inlet and outlet piping.

J. Stack Flashing Fittings: Counterflashing-type, cast-iron fitting, with bottom recess for terminating roof membrane, and with threaded or hub top for extending vent pipe.

K. Vent Caps: Cast-iron body with threaded or hub inlet and vandal-proof design. Include vented hood and set-screws to secure to vent pipe.

L. Vent Terminals: Commercially manufactured, shop- or field-fabricated, frost-proof assembly constructed of galvanized steel, copper, or lead-coated copper. Size to provide 1-inch (25-mm) enclosed air space between outside of pipe and inside of flashing collar extension, with counterflashing.

M. Expansion Joints: ASME A112.21.2M, assembly with cast-iron body with bronze sleeve, packing gland, and packing; of size and end types corresponding to connected piping.

## 2.9 SLEEVE PENETRATION SYSTEMS

A. Available Manufacturers:

1. ProSet Systems, Inc.

B. Description: UL 1479, through-penetration firestop assembly consisting of sleeve and stack fitting with firestopping plug.

1. Sleeve: Molded PVC plastic, of length to match slab thickness and with integral nailing flange on one end for installation in cast-in-place concrete slabs.
2. Stack Fitting: ASTM A 48 (ASTM A 48M), gray-iron, hubless-pattern, wye-branch stack fitting with neoprene O-ring at base and gray-iron plug in thermal-release harness in branch. Include PVC protective cap for plug.

a. Special Coating: Include corrosion-resistant interior coating on fittings for plastic chemical waste and vent stacks.

## 2.10 FLASHING MATERIALS

A. Lead Sheet: ASTM B 749, Type L51121, copper bearing, with the following minimum weights and thicknesses, unless otherwise indicated:

1. General Use: 4-lb/sq. ft. (20-kg/sq. m), 0.0625-inch (1.6-mm) thickness.
2. Vent Pipe Flashing: 3-lb/sq. ft. (15-kg/sq. m), 0.0469-inch (1.2-mm) thickness.
3. Burning: 6-lb/sq. ft. (30-kg/sq. m), 0.0938-inch (2.4-mm) thickness.

B. Copper Sheet: ASTM B 152 (ASTM B 152M), of the following minimum weights and thicknesses, unless otherwise indicated:

1. General Applications: 12 oz./sq. ft. (3.7 kg/sq. m or 0.41-mm thickness).
2. Vent Pipe Flashing: 8 oz./sq. ft. (2.5 kg/sq. m or 0.27-mm thickness).

C. Zinc-Coated Steel Sheet: ASTM A 653/A 653M, with 0.20 percent copper content and 0.04-inch (1.01-mm) minimum thickness, unless otherwise indicated. Include G90 (Z275) hot-dip galvanized, mill-phosphatized finish for painting if indicated.

D. Elastic Membrane Sheet: ASTM D 4068, flexible, chlorinated polyethylene, 40-mil (1.01-mm) minimum thickness.

E. Fasteners: Metal compatible with material and substrate being fastened.

F. Metal Accessories: Sheet metal strips, clamps, anchoring devices, and similar accessory units required for installation; matching or compatible with material being installed.

G. Solder: ASTM B 32, lead-free alloy.

H. Bituminous Coating: SSPC-Paint 12, solvent-type, bituminous mastic.

## 2.11 CLEANOUTS

A. Cleanouts,: Comply with ASME A112.3.1.

1. Application: Floor cleanout and wall cleanout.
2. Manufacturer:
    a. Josam Co.
    b. Smith.
    c. Wade.
    d. Zurn.
3. Refer to Plumbing Schedule for Specification Standards.

## 2.12 FLOOR DRAINS

A. Floor Drains,: Comply with ASME A112.3.1.

1. Application: Floor drain.
2. Manufacturer:
    a. Josam Co.
    b. MiFab.
    c. Smith.
    d. Wade Div.
    e. Zurn Industries.
3. Refer to Plumbing Schedule for Specification Standards.

## 2.13 TRENCH DRAIN

A. Trench Drains: Comply with ASME A112.3.1.
1. Manufacturer:
    a. Park Environmental Equipment
2. Refer to Plumbing Schedule for Specification Standards.

## 2.14 SAND AND OIL

A. Sand and Mud
   1. Products:
      a. Park Environmental Equipment
   2. Refer to plumbing schedule and detail for spec. std.

## 2.15 BALANCING VALVES

A. Calibrated Balancing Valves: Adjustable, with two readout ports and memory setting indicator. Include manufacturer's standard hoses, fittings, valves, differential pressure meter, and carrying case.

   1. Available Manufacturers:

      a. Amtrol, Inc.
      b. Flow Design, Inc.
      c. ITT Industries; Bell & Gossett Div.
      d. Watts Industries, Inc.; Water Products Div.

   2. NPS 2 (DN 50) and Smaller: Bronze body with brass ball, adjustment knob, calibrated nameplate, and threaded or solder-joint ends.
   3. NPS 2 (DN 50) and Smaller: Bronze, Y-pattern body with adjustment knob and threaded ends.
   4. NPS 2-1/2 (DN 65) and Larger: Cast-iron, Y-pattern body with bronze disc and flanged or grooved ends.

B. Memory-Stop Balancing Valves, NPS 2 (DN 50) and Smaller: MSS SP-110, ball valve, rated for 400-psig (2760-kPa) minimum CWP. Include two-piece, copper-alloy body with standard or full-port, chrome-plated brass ball, replaceable seats and seals, threaded or solder-joint ends, and vinyl-covered steel handle with memory-stop device.

   1. Available Manufacturers:

      a. Conbraco Industries, Inc.
      b. Crane Co.
      c. Grinnell Corporation.
      d. Hammond Valve.
      e. Milwaukee Valve Company.
      f. NIBCO INC.
      g. Red-White Valve Corp.

## 2.16 THERMOSTATIC WATER MIXING VALVES

A. Manufacturers:
   1. Bradley.

2. Lawler Manufacturing Company, Inc.
3. Leonard Valve Company.
4. Powers.
5. Symmons Industries, Inc.
6. Whitehall

B. General: ASSE 1017, manually adjustable, thermostatic water mixing valve with bronze body. Include check stop and union on hot- and cold-water-supply inlets, adjustable temperature setting, and thermometer. Refer to plumbing schedules for further information.

## 2.17 STRAINERS

A. Strainers: Y-pattern, unless otherwise indicated, and full size of connecting piping. Include ASTM A 666, Type 304, stainless-steel screens with 3/64-inch (1.2-mm) round perforations, unless otherwise indicated.

1. Pressure Rating: 125-psig (860-kPa) minimum steam working pressure, unless otherwise indicated.
2. NPS 2 (DN 50) and Smaller: Bronze body, with female threaded ends.
3. NPS 2-1/2 (DN 65) and Larger: Cast-iron body, with interior AWWA C550 or FDA-approved, epoxy coating and flanged ends.
4. Y-Pattern Strainers: Screwed screen retainer with centered blowdown.

    a. Drain: Factory- or field-installed, hose-end drain valve.

# PART 3 - EXECUTION

## 3.1 INSTALLATION

A. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for piping joining materials, joint construction, and basic installation requirements.

B. Install backflow preventers in each water supply to mechanical equipment and systems and to other equipment and water systems that may be sources of contamination. Comply with authorities having jurisdiction.

1. Locate backflow preventers in same room as connected equipment or system.
2. Install drain for backflow preventers with atmospheric-vent drain connection with air-gap fitting, fixed air-gap fitting, or equivalent positive pipe separation of at least two pipe diameters in drain piping and pipe to floor drain. Locate air-gap device attached to or under backflow preventer. Simple air breaks are not acceptable for this application.
3. Do not install bypass piping around backflow preventers.

C. Install trap seal primer valves with outlet piping pitched down toward drain trap a minimum of 1 percent and connect to floor-drain body, trap, or inlet fitting. Adjust valve for proper flow.

D. Install expansion joints on vertical risers, stacks, and conductors if indicated.

E. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated:

1. Size same as drainage piping up to NPS 4 (DN 100). Use NPS 4 (DN 100) for larger drainage piping unless larger cleanout is indicated.
2. Locate at each change in direction of piping greater than 45 degrees.
3. Locate at minimum intervals of 50 feet (15 m) for piping NPS 4 (DN 100) and smaller and 100 feet (30 m) for larger piping.
4. Locate at base of each vertical soil and waste stack.

F. Install cleanout deck plates with top flush with finished floor, for floor cleanouts for piping below floors.

G. Install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall, for cleanouts located in concealed piping.

H. Install flashing flange and clamping device with each stack and cleanout passing through floors with waterproof membrane.

I. Install vent flashing sleeves on stacks passing through roof. Secure over stack flashing according to manufacturer's written instructions.

J. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.

1. Position floor drains for easy access and maintenance.
2. Set floor drains below elevation of surrounding finished floor to allow floor drainage. Set with grates depressed according to the following drainage area radii:

    a. Radius, 30 Inches (750 mm) or Less: Equivalent to 1 percent slope, but not less than 1/4-inch (6.35-mm) total depression.
    b. Radius, 30 to 60 Inches (750 to 1500 mm): Equivalent to 1 percent slope.
    c. Radius, 60 Inches (1500 mm) or Larger: Equivalent to 1 percent slope, but not greater than 1-inch (25-mm) total depression.

3. Install floor-drain flashing collar or flange so no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes where penetrated.
4. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.

K. Install interceptors, including trapping, venting, and flow-control fitting, according to authorities having jurisdiction and with clear space for servicing.
1. Flush with Floor Installation: Set unit and extension, if required, with cover flush with finished floor.

2. Install cleanout immediately downstream from interceptors not having integral cleanout on outlet.

L. Fasten wall-hanging plumbing specialties securely to supports attached to building substrate if supports are specified and to building wall construction if no support is indicated.

M. Fasten recessed-type plumbing specialties to reinforcement built into walls.

N. Install wood-blocking reinforcement for wall-mounting and recessed-type plumbing specialties.

O. Install individual shutoff valve in each water supply to plumbing specialties. Use ball, gate, valve if specific valve is not indicated. Install shutoff valves in accessible locations. Refer to Division 15 Section "Valves" for general-duty ball, butterfly, check, gate, and globe valves.

P. Install air vents at piping high points. Include ball, gate, or valve in inlet.

Q. Install traps on plumbing specialty drain outlets. Omit traps on indirect wastes unless trap is indicated.

R. Install escutcheons at wall, floor, and ceiling penetrations in exposed finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding pipe fittings.

## 3.2 CONNECTIONS

A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

C. Connect plumbing specialties to piping specified in other Division 15 Sections.

D. Ground equipment.

E. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

F. Connect plumbing specialties and devices that require power according to Division 16 Sections.

G. Interceptor Connections: Connect piping, flow-control fittings, and accessories.
1. Sand and mud.

## 3.3 FLASHING INSTALLATION

A. Fabricate flashing from single piece unless large pans, sumps, or other drainage shapes are required. Join flashing according to the following if required:

1. Lead Sheets: Burn joints of lead sheets 6-lb/sq. ft. (30-kg/sq. m), 0.0938-inch (2.4-mm) thickness or thicker. Solder joints of lead sheets 4-lb/sq. ft. (20-kg/sq. m), 0.0625-inch (1.6-mm) thickness or thinner.
2. Copper Sheets: Solder joints of copper sheets.

B. Install sheet flashing on pipes, sleeves, and specialties passing through or embedded in floors and roofs with waterproof membrane.

1. Pipe Flashing: Sleeve type, matching pipe size, with minimum length of 10 inches (250 mm), and skirt or flange extending at least 8 inches (200 mm) around pipe.
2. Sleeve Flashing: Flat sheet, with skirt or flange extending at least 8 inches (200 mm) around sleeve.
3. Embedded Specialty Flashing: Flat sheet, with skirt or flange extending at least 8 inches (200 mm) around specialty.

C. Set flashing on floors and roofs in solid coating of bituminous cement.

D. Secure flashing into sleeve and specialty clamping ring or device.

E. Install flashing for piping passing through roofs with counterflashing or commercially made flashing fittings, according to Division 7 Section "Sheet Metal Flashing and Trim."

F. Extend flashing up vent pipe passing through roofs and turn down into pipe, or secure flashing into cast-iron sleeve having calking recess.

G. Fabricate and install flashing and pans, sumps, and other drainage shapes.

## 3.4 LABELING AND IDENTIFYING

A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplate or sign on or near each backflow preventer and oil interceptor.

1. Text: Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit.
2. Refer to Division 15 Section "Basic Mechanical Materials and Methods Mechanical Identification" for nameplates and signs.

## 3.5 PROTECTION

A. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

## 3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain equipment. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 15430

SECTION 15441 - DOMESTIC WATER PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following all-bronze and bronze-fitted centrifugal pumps for domestic cold- and hot-water circulation:

1. Close-coupled, horizontally mounted, in-line centrifugal pumps.

1.3 SUBMITTALS

A. Product Data: For each type and size of domestic water pump specified. Include certified performance curves with operating points plotted on curves; and rated capacities of selected models, furnished specialties, and accessories.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Operation and Maintenance Data: For domestic water pumps to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of domestic water pumps and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. UL Compliance: Comply with UL 778 for motor-operated water pumps.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Retain shipping flange protective covers and protective coatings during storage.

B. Protect bearings and couplings against damage.

C. Comply with pump manufacturer's written rigging instructions for handling.

1.6 COORDINATION

A. Coordinate size and location of concrete bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 HORIZONTALLY MOUNTED, SYSTEM LUBRICATEDIN-LINE WET ROTOR CIRCULATION PUMPS

A. Manufacturers:

1. Bell & Gossett Pump.

2. Grundfos.

3. Taco Pumps, Inc.

B. Description: Factory-assembled and -tested, single-stage, close-coupled, horizontally mounted, in-line centrifugal pumps and designed for installation with pump and motor shafts mounted horizontally.

1. Pump Construction: All bronze.

a. Casing: Radially split, with threaded companion-flange connections.

b. Impeller: Noryl; statically and dynamically balanced, closed, and keyed to shaft.

c. Shaft: Ceramic.

d. Seal: Mechanical, with carbon-steel rotating ring, stainless-steel spring, ceramic seat, and rubber bellows and gasket. Include water slinger on shaft between motor and seal.

e. Bearings: Carbon.

2. Motor: Three speed, with system lubricated . Comply with requirements in Division 15 Section "Motors."

C. Capacities and Characteristics:

1. Refer to Plumbing Schedule for Specification Standards.

2.3 CONTROLS

A. Timers: Electric time clock for control of hot-water circulation pump.

1. Manufacturers:

a. Honeywell International, Inc.

b. Intermatic, Inc.

c. Johnson Controls, Inc.

d. TORK.

2. Type: Programmable, seven-day clock with manual override on-off switch.

3. Enclosure: Suitable for wall mounting.

4. Operation of Pump: On or off.

5. Transformer: Provide if required.

6. Power Requirement: 120 V, ac.

7. Programmable Sequence of Operation: Up to two on-off cycles each day for seven days.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of domestic-water-piping system to verify actual locations of connections before pump installation.

3.2 PUMP INSTALLATION

A. Install pumps with access for periodic maintenance including removal of motors, impellers, couplings, and accessories.

B. Independently support pumps and piping so weight of piping is not supported by pumps and weight of pumps is not supported by piping.

C. Install in-line centrifugal pumps with motor and pump shafts horizontal.

D. Install continuous-thread hanger rods and spring hangers with vertical-limit stop of sufficient size to support pump weight. Vibration isolation devices are specified in Division 15 Section "Mechanical Vibration Controls." Fabricate brackets or supports as required. Hanger and support materials are specified in Division 15 Section "Hangers and Supports."

3.3 CONTROL INSTALLATION

A. Install timers field located on wall near pump.

3.4 CONNECTIONS

A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to pumps to allow service and maintenance.

C. Connect domestic water piping to pumps. Install suction and discharge piping equal to or greater than size of pump nozzles. Refer to Division 15 Section "Domestic Water Piping."

1. Install flexible connectors adjacent to pumps in suction and discharge piping.

2. Install shutoff valve and strainer on suction side of pumps, and check valve and throttling valve on discharge side of pumps. Install valves same size as connected piping. Refer to Division 15 Section "Valves" for general-duty valves for domestic water piping and Division 15 Section "Plumbing Specialties" for strainers.

3. Install pressure gages at suction and discharge of pumps. Install at integral pressure-gage tappings where provided or install pressure-gage connectors in suction and discharge piping around pumps.

D. Ground equipment according to Division 16 Section "Grounding and Bonding."

E. Connect wiring according to Division 16 Section "Conductors and Cables."

F. Connect timers to pumps that they control.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain controls and pumps. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 15441

# SECTION 15485 - ELECTRIC WATER HEATERS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following electric water heaters:
   1. Flow-control, instantaneous electric water heaters.
   2. Light-commercial electric water heaters.
   3. Water heater accessories.

### 1.3 SUBMITTALS

A. Product Data: For each type and size of water heater indicated. Include rated capacities, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Product Certificates: For each type of commercial and instantaneous electric water heater, signed by product manufacturer.

D. Source quality-control test reports.

E. Field quality-control test reports.

F. Operation and Maintenance Data: For electric water heaters to include in emergency, operation, and maintenance manuals.

G. Warranty: Special warranty specified in this Section.

### 1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain same type of electric water heaters through one source from a single manufacturer.

B. Product Options: Drawings indicate size, profiles, and dimensional requirements of electric water heaters and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. ASME Compliance: Where indicated, fabricate and label commercial water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

E. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," for all components that will be in contact with potable water.

## 1.5 COORDINATION

A. Coordinate size and location of concrete bases with Architectural and Structural Drawings.

## 1.6 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of electric water heaters that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including storage tank and supports.
b. Faulty operation of controls.
c. Deterioration of metals, metal finishes, and other materials beyond normal use.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

## 2.2 COMMERCIAL ELECTRIC WATER HEATERS

A. Description: Comply with UL 174 for household, storage electric water heaters.
1. Manufacturers:
a. Precision Boilers, LLC HWS model
b. Lochinvar Custom High Power series
c. AO Smith DVE Series
2. Storage-Tank Construction: Steel, vertical arrangement.

a. Tappings: ASME B1.20.1 pipe thread.

b. Pressure Rating: 150 psig (1035 kPa).

c. Lining: Tank must be completely lined with aluminum silicate for service temps up to 250 degrees Fahrenheit with the same coefficient of expansion as medium steel. The cement is applied at a minimum thickness of 5/8" to form a hard on piece lining. Comply with NSF 61 barrier materials for potable-water tank linings, including extending lining material into tappings.

d. Construction: Tank must be constructed to ASME code section IV and stamped HLW. Must be UL labeled.

e. Opening: Tank shall have an 11X15" manway.

3. Factory-Installed Storage-Tank Appurtenances:

a. Anode Rod: Replaceable magnesium.

b. Drain Valve: ASSE 1005.

c. Insulation: The tank must be lined with 4 inches of 3/4 pound density fiberglass insulation.

d. Jacket: Steel with 4 coat baked enameled finish. 16 gauge steel removable jacket panels.

e. Heating Elements: Individually flanged incoloy sheathed.

f. Temperature Control: Electronic multi staged control.

g. Safety Control: High-temperature-limit cutoff device or system.

h. Relief Valve: ASME rated and stamped and complying with ASME PTC 25.3 for combination temperature and pressure relief valves. Include relieving capacity at least as great as heat input, and include pressure setting less than water heater working-pressure rating. Select relief valve with sensing element that extends into storage tank.

4. Special Requirements: NSF 5 construction with I-beam skidding for off-floor installation.

## 2.3 WATER HEATER ACCESSORIES

A. Combination Temperature and Pressure Relief Valves: ASME rated and stamped and complying with ASME PTC 25.3. Include relieving capacity at least as great as heat input, and include pressure setting less than water heater working-pressure rating. Select relief valves with sensing element that extends into storage tank.

## 2.4 SOURCE QUALITY CONTROL

A. Hydrostatically test water heater storage tanks before shipment to minimum of one and one-half times pressure rating.

B. Prepare test reports.

PART 3 - EXECUTION

3.1 WATER HEATER INSTALLATION

A. Install water heaters on concrete bases.

1. Exception: Omit concrete bases for commercial water heaters if installation on stand, bracket, suspended platform, or direct on floor is indicated.
2. Concrete base construction requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."

B. Install water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.

C. Install combination temperature and pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend commercial-water-heater relief-valve outlet, with drain piping same as domestic water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.

D. Install combination temperature and pressure relief valves in water piping for water heaters without storage. Extend water-heater relief-valve outlet, with drain piping same as domestic water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.

E. Install water-heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains. Install hose-end drain valves at low points in water piping for water heaters that do not have tank drains. Refer to Division 15 Section "Plumbing Specialties" for hose-end drain valves.

F. Install thermometer on outlet piping of water heaters.

G. Install thermometers on inlet and outlet piping of household, collector-to-tank, solar-electric water heaters. Refer to Division 15 Section "Meters and Gages" for thermometers.

H. Assemble and install inlet and outlet piping manifold kits for multiple water heaters. Fabricate, modify, or arrange manifolds for balanced water flow through each water heater. Include shutoff valve, thermometer in each water heater inlet and outlet, and throttling valve in each water heater outlet. Refer to Division 15 Section "Valves" for general-duty valves.

I. Install piping-type heat traps on inlet and outlet piping of water heater storage tanks without integral or fitting-type heat traps.

J. Fill water heaters with water.

## 3.2 CONNECTIONS

A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to water heaters to allow service and maintenance. Arrange piping for easy removal of water heaters.

C. Ground equipment according to Division 16 Section "Grounding and Bonding."

D. Connect wiring according to Division 16 Section "Conductors and Cables."

## 3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including connections. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:

1. Leak Test: After installation, test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, confirm proper operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace water heaters that do not pass tests and inspections and retest as specified above.

## 3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain electric water heaters. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 15485

# SECTION 15738 - SPLIT-SYSTEM AIR-CONDITIONING UNITS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes split-system air-conditioning units consisting of separate evaporator-fan and compressor-condenser components. Units are designed for exposed or concealed mounting, and may be connected to ducts.

### 1.3 SUBMITTALS

A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Field quality-control test reports.

D. Operation and Maintenance Data: For split-system air-conditioning units to include in emergency, operation, and maintenance manuals.

E. Warranty: Special warranty specified in this Section.

### 1.4 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of split-system units and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.5 COORDINATION

A. Coordinate size and location of concrete bases for units. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork are specified in Division 3 Section "Cast-in-Place Concrete."

B. Coordinate size, location, and connection details with roof curbs, equipment supports, and roof penetrations specified in Division 7 Section "Roof Accessories."

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of split-system air-conditioning units that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion on compressors.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Filters: One set of filters for each unit.
   2. Fan Belts: One set of belts for each unit.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Carrier.
   2. Lennox.
   3. Trane.
   4. York.

2.2 EVAPORATOR-FAN COMPONENTS (FIVE TONS AND BELOW)

A. Cabinet: Enameled steel with removable panels on front and ends in manufacturer standard color.
   1. Insulation: 1” high density, R 4.2.
   2. Drain Pans: Poly-corbonate, with connection for drain; insulated.

B. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with thermal-expansion valve.

C. Electric Coil: Helical, nickel-chrome, resistance-wire heating elements with refractory ceramic support bushings; automatic-reset thermal cutout; built-in magnetic contactors; manual-reset thermal cutout; airflow proving device; and one-time fuses in terminal box for over-current protection.

D. Fan: Centrifugal, FC.

E. Fan Motors: ECM type, pressure independent, soft start.

F. Filters: Disposable 2" pleated media.

## 2.3 AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS (FIVE TONS AND BELOW)

A. Casing: Galvanized steel, finished with baked enamel in manufacturer-standard color, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.

B. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.
   1. Compressor Type: Scroll, two stage.
   2. Rubber vibration isolator mounting.

C. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240.

D. Fan: Propeller type, directly connected to motor.

E. Motor: ECM for multi-speed operation.

## 2.4 ACCESSORIES

A. Thermostat: Low voltage 7-day, programmable with subbase to control compressor and evaporator fan.
   1. Compressor time delay.
   2. 24-hour time control of system stop and start.
   3. Liquid-crystal display indicating temperature, set-point temperature, time setting, operating mode, and fan speed.
   4. Fan-speed selection, including auto setting.

B. Automatic-reset timer to prevent rapid cycling of compressor.

C. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units level and plumb.

B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.

C. Install ground-mounting, compressor-condenser components on 4-inch- thick, reinforced concrete base; 6 inches larger on each side of unit. Concrete, reinforcement, and formwork are specified in Division 3 Section "Cast-in-Place Concrete." Coordinate anchor installation with concrete base.

D. Install ground-mounting, compressor-condenser components on polyethylene mounting base.

E. Install compressor-condenser components on restrained, spring isolators with a minimum static deflection of 1 inch. Refer to Division 15 Section "Mechanical Vibration Controls and Seismic Restraints."

F. Install and connect pre-charged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

3.2 CONNECTIONS

A. Install piping adjacent to unit to allow service and maintenance.

B. Duct Connections: Duct installation requirements are specified in Division 15 Section "Metal Ducts." Drawings indicate the general arrangement of ducts. Connect supply and return ducts to split-system air-conditioning units with flexible duct connectors. Flexible duct connectors are specified in Division 15 Section "Duct Accessories."

C. Ground equipment according to Division 16 Section "Grounding and Bonding."

D. Electrical Connections: Comply with requirements in Division 16 Sections for power wiring, switches, and motor controls.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:
   1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace malfunctioning units and retest as specified above.

## 3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.

## 3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 15738

# SECTION 15738-A – DUCT LESS SPLIT-SYSTEM AIR-CONDITIONING UNITS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes duct less split-system air-conditioning units consisting of separate evaporator-fan and compressor-condenser components. Units are designed for exposed mounting, and include the following type of units:
   1. Wall mounted units (high-wall).

### 1.3 SUBMITTALS

A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Field quality-control test reports.

D. Operation and Maintenance Data: For split-system air-conditioning units to include in emergency, operation, and maintenance manuals.

E. Warranty: Special warranty specified in this Section.

### 1.4 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of split-system units and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.5 COORDINATION

A. Coordinate size and location of concrete bases for units. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork are specified in Division 3 Section "Cast-in-Place Concrete."

B. Coordinate size, location, and connection details with roof curbs, equipment supports, and roof penetrations specified in Division 7 Section "Roof Accessories."

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of split-system air-conditioning units that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion on compressors.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Filters: One set of filters for each unit.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Carrier.
   2. EMI.
   3. Daikin.
   4. Trane.
   5. York.

2.2 EVAPORATOR-FAN COMPONENTS (HIGH WALL)

A. Cabinet: Enameled steel with removable panels on front and ends in manufacturer standard color. Discharge and inlet grilles shall be attractively styled, high-impact polystyrene.
   1. Insulation: 1” high density, R 4.2.
   2. Drain Pans: Galvanized steel with anti-corrosion coating.
   3. Provide with factory mounted condensed pump.

B. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240, and with thermal-expansion valve.

C. Fan: 3-speed direct drive Centrifugal, FC.

D. Fan Motors: Manufacture standard with overload protection.

2.3 AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS

A. Casing: Galvanized steel, finished with baked enamel in manufacturer-standard color, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.

B. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.
   1. Compressor Type: Scroll.
   2. Rubber vibration isolator mounting.

C. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins, complying with ARI 210/240.

D. Fan: Propeller type, directly connected to motor.

E. Motor: Permanently lubricated, totally enclosed with integral thermal-overload protection.

2.4 ACCESSORIES

A. Thermostat: Low voltage 7-day subbase to control compressor and evaporator fan.
   1. Compressor time delay.
   2. 24-hour time control of system stop and start.
   3. Liquid-crystal display indicating temperature, set-point temperature, time setting, operating mode, and fan speed.
   4. Fan-speed selection, including auto setting.

B. Automatic-reset timer to prevent rapid cycling of compressor.

C. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.

D. Field installed condensate pump.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units level and plumb.

B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.

C. Install ground-mounting, compressor-condenser components on 4-inch- thick, reinforced concrete base; 6 inches larger on each side than unit. Concrete, reinforcement, and formwork are specified in Division 3 Section "Cast-in-Place Concrete." Coordinate anchor installation with concrete base.

D. Install ground-mounting, compressor-condenser components on polyethylene mounting base.

E. Install compressor-condenser components on restrained, spring isolators with a minimum static deflection of 1 inch. Refer to Division 15 Section "Mechanical Vibration Controls."

F. Install and connect pre-charged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

## 3.2 CONNECTIONS

A. Install piping adjacent to unit to allow service and maintenance.

B. Ground equipment according to Division 16 Section "Grounding and Bonding."

C. Electrical Connections: Comply with requirements in Division 16 Sections for power wiring, switches, and motor controls.

## 3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:
   1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
   2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
   3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Remove and replace malfunctioning units and retest as specified above.

## 3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.
   1. Complete installation and startup checks according to manufacturer's written instructions.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 15738 A

SECTION 15767 - UNIT HEATERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes propeller unit heaters with electric-resistance coils.

1.3 SUBMITTALS

A. Product Data: Include rated capacities, operating characteristics, furnished specialties, and accessories for each unit type and configuration.

B. Shop Drawings: Submit the following for each unit type and configuration:
   1. Plans, elevations, sections, and details.
   2. Details of anchorages and attachments to structure and to supported equipment.
   3. Wiring Diagrams: Power, signal, and control wiring.
   4. Equipment schedules to include rated capacities, operating characteristics, furnished specialties, and accessories.

C. Coordination Drawings: Plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
   1. Suspended ceiling components.
   2. Structural members to which unit heaters will be attached.
   3. Other items, including but not limited to the following:
      a. Lighting fixtures.
      b. Sprinklers.

D. Field quality-control test reports.

E. Operation and Maintenance Data: For propeller unit heaters to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Airtherm; a Mestek Company.
   2. Engineered Air Ltd.
   3. Rosemex Products.
   4. Ruffneck Heaters; a division of Lexa Corporation.
   5. Reddi.

2.2 UNIT HEATERS

A. Description: An assembly including casing, coil, fan, and motor in horizontal discharge configuration with adjustable discharge louvers.

B. Comply with UL 2021.

C. Comply with UL 823.

2.3 CASING

A. Cabinet: Cabinet shall be fabricated of die formed heavy gauge steel. An internal shroud is provided around the heating element to ensure uniform airflow delivery across the entire face of heating elements. The enclosed motor and fan are isolated to minimize vibration and noise level. The control compartment is provided with a hinged and latched access door for easy installation and maintenance.

B. Cabinet Finish: Manufacturer's standard baked enamel or durable power coated paint applied to factory assembled and -tested propeller unit heater before shipping.

C. Discharge Louver: Adjustable fin diffuser for horizontal units and conical diffuser for vertical units.

2.4 ELECTRIC-RESISTANCE HEATING ELEMENTS

A. Nickel-chromium heating wire, free from expansion noise and 60-Hz hum, embedded in magnesium oxide refractory and sealed in steel or corrosion-resistant metallic sheath with fins no closer than 0.16 inch (4 mm). Element ends shall be enclosed in terminal box. Fin surface temperature shall not exceed 550 deg F (288 deg C) at any point during normal operation.
   1. Circuit Protection: One-time fuses in terminal box for overcurrent protection and limit controls for high-temperature protection of heaters.
   2. Wiring Terminations: Stainless-steel or corrosion-resistant material.

2.5 FAN and MOTORS

A. Totally enclosed, single phase, permanently lubricated, thermally protected motors with unit bearings mounted with rubber insulators to minimize vibration and noise. Fan assembly enclosed by a heavy gauge, close spaced, chrome plated wire guard. Fan over-ride purges unit of residual heat at shutdown

2.6 WIRING

A. Heaters shall be designated for a single circuit with elements, motor and control circuits wired in accordance with the latest national electric code or applicable local codes and listed under UL Standard 2021. All three-phase heaters shall have balanced equal phases.

2.7 LIMIT CONTROLS

A. All units shall have built in automatic reset thermal cutouts to shut down motor and elements if safe operating temperatures are exceeded. Include fan purge to dissipate residual heat from elements on heater shut down.

2.8 CONTROLS

A. Contactors and controls circuit transformers, where required, are factory installed and wired. Single stage control on 3-20 KW units. 2-stage control on 25 KW through 48 KW units.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive propeller unit heaters for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine roughing-in for piping and electrical connections to verify actual locations before propeller unit-heater installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install propeller unit heaters level and plumb.

B. Install propeller unit heaters to comply with NFPA 90A.

C. Suspend propeller unit heaters from structure with all-thread hanger rods and elastomeric hangers. Hanger rods and attachments to structure are specified in Division 15 Section "Hangers and Supports." Vibration hangers are specified in Division 15 Section "Mechanical Vibration."

D. Install wall-mounting thermostats and switch controls in electrical outlet boxes at heights to match lighting controls.

3.3 CONNECTIONS

A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to machine to allow service and maintenance.

C. Ground equipment according to Division 16 Section "Grounding and Bonding."

D. Connect wiring according to Division 16 Section "Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Testing: Perform the following field quality-control testing and report results in writing:
   1. After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
   2. Operate electric heating elements through each stage to verify proper operation and electrical connections.
   3. Test and adjust controls and safeties.

B. Remove and replace malfunctioning units and retest as specified above.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain propeller unit heaters. Refer to Division 1 Section "Demonstration and Training."

END OF SECTION 15767

# SECTION 15815 - METAL DUCTS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes metal ducts for supply, return, outside, and exhaust air-distribution systems in pressure classes from minus 2- to plus 10-inch wg (minus 500 to plus 2500 Pa). Metal ducts include the following:
   1. Rectangular ducts and fittings.
   2. Single-wall, round, and flat-oval spiral-seam ducts and formed fittings.

B. Related Sections include the following:
   1. Division 15 Section "Duct Accessories" for dampers, sound-control devices, duct-mounting access doors and panels, turning vanes, and flexible ducts.

### 1.3 SYSTEM DESCRIPTION

A. Duct system design, as indicated, has been used to select size and type of air-moving and -distribution equipment and other air system components. Changes to layout or configuration of duct system must be specifically approved in writing by Engineer. Accompany requests for layout modifications with calculations showing that proposed layout will provide original design results without increasing system total pressure.

### 1.4 SUBMITTALS

A. Shop Drawings: CAD-generated and drawn to 1/4 inch equals 1 foot scale. Show fabrication and installation details for metal ducts.
   1. Fabrication, assembly, and installation, including plans, elevations, sections, components, and attachments to other work.
   2. Duct layout indicating sizes and pressure classes.
   3. Elevations of top and bottom of ducts.
   4. Dimensions of main duct runs from building grid lines.
   5. Fittings.
   6. Reinforcement and spacing.
   7. Seam and joint construction.
   8. Penetrations through fire-rated and other partitions.
   9. Equipment installation based on equipment being used on Project.

10. Duct accessories, including access doors and panels.
11. Hangers and supports, including methods for duct and building attachment and vibration isolation.

B. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
1. Ceiling suspension assembly members.
2. Other systems installed in same space as ducts.
3. Ceiling- and wall-mounting access doors and panels required to provide access to dampers and other operating devices.
4. Ceiling-mounting items, including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

C. Welding certificates.

D. Field quality-control test reports.

## 1.5 QUALITY ASSURANCE

A. NFPA Compliance:
1. NFPA 90A, "Installation of Air Conditioning and Ventilating Systems."
2. NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."

# PART 2 - PRODUCTS

## 2.1 SHEET METAL MATERIALS

A. Comply with the latest edition of SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods, unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

B. Galvanized Sheet Steel: Lock-forming quality; complying with ASTM A 653/A 653M and having G90 (Z275) coating designation; ducts shall have mill-phosphatized finish for surfaces exposed to view.

C. Stainless Steel: ASTM A 480/A 480M, Type 316.

D. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts.

E. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

## 2.2 SEALANT MATERIALS

A. Joint and Seam Sealants, General: The term "sealant" is not limited to materials of adhesive or mastic nature but includes tapes and combinations of open-weave fabric strips and mastics.

B. Joint and Seam Tape: 2 inches (50 mm) wide; glass-fiber-reinforced fabric.

C. Tape Sealing System: Woven-fiber tape impregnated with gypsum mineral compound and modified acrylic/silicone activator to react exothermically with tape to form hard, durable, airtight seal.

D. Water-Based Joint and Seam Sealant: Flexible, adhesive sealant, resistant to UV light when cured, UL 723 listed, and complying with NFPA requirements for Class 1 ducts.

E. Solvent-Based Joint and Seam Sealant: One-part, nonsag, solvent-release-curing, polymerized butyl sealant formulated with a minimum of 75 percent solids.

F. Flanged Joint Mastic: One-part, acid-curing, silicone, elastomeric joint sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use O.

G. Flange Gaskets: Butyl rubber or EPDM polymer with polyisobutylene plasticizer.

## 2.3 HANGERS AND SUPPORTS

A. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
   1. Use powder-actuated concrete fasteners for standard-weight aggregate concretes or for slabs more than 4 inches (100 mm) thick.
   2. Exception: Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches (100 mm) thick.

B. Hanger Materials: Galvanized sheet steel or threaded steel rod.
   1. Hangers Installed in Corrosive Atmospheres: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
   2. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for steel sheet width and thickness and for steel rod diameters.
   3. Galvanized-steel straps attached to aluminum ducts shall have contact surfaces painted with zinc-chromate primer.

C. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.

D. Trapeze and Riser Supports: Steel shapes complying with ASTM A 36/A 36M.
   1. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.
   2. Supports for Stainless-Steel Ducts: Stainless-steel support materials.

## 2.4 RECTANGULAR DUCT FABRICATION

A. Fabricate ducts, elbows, transitions, offsets, branch connections, and other construction according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" and complying with requirements for metal thickness, reinforcing types and intervals, tie-rod applications, and joint types and intervals.
   1. Lengths: Fabricate rectangular ducts in lengths appropriate to reinforcement and rigidity class required for pressure class.
   2. Deflection: Duct systems shall not exceed deflection limits according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."

B. Transverse Joints: Prefabricated slide-on joints and components constructed using manufacturer's guidelines for material thickness, reinforcement size and spacing, and joint reinforcement.
   1. Duct Size: Maximum 30 inches (750 mm) wide and up to 2-inch wg (500-Pa) pressure class.

C. Longitudinal Seams: Pittsburgh lock sealed with noncuring polymer sealant.

D. Cross Breaking or Cross Beading: Cross break or cross bead duct sides 19 inches (480 mm) and larger and 0.0359 inch (0.9 mm) thick or less, with more than 10 sq. ft. (0.93 sq. m) of nonbraced panel area unless ducts are lined.

## 2.5 ROUND AND FLAT-OVAL DUCT AND FITTING FABRICATION

A. Diameter as applied to flat-oval ducts in this Article is the diameter of a round duct with a circumference equal to the perimeter of a given size of flat-oval duct.

B. Round, Spiral Lock-Seam Ducts: Fabricate supply ducts of galvanized steel according to the latest edition of SMACNA's "HVAC Duct Construction Standards--Metal and Flexible." Snap lock will be allowed.

C. Flat-Oval, Spiral Lock-Seam Ducts: Fabricate supply ducts according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."
   1. Manufacturers:
      a. McGill AirFlow Corporation.
      b. SPOT.
      c. Lindab.
      d. GAP.

D. Duct Joints:
   1. Ducts up to 36 Inches (500 mm) in Diameter: Interior, center-beaded slip coupling, sealed before and after fastening, attached with sheet metal screws.
   2. Ducts 37 to 72 Inches (535 to 1830 mm) in Diameter: Flange and gasket joint consisting of two internal with sealant and gasket.
   3. Round Ducts: Prefabricated connection system consisting of single-lipped, EPDM rubber gasket. Manufacture ducts according to connection system manufacturer's tolerances.
      a. Manufacturers:

1) McGill.
2) Lindab Inc.
3) SPOT.
4) GAP.

4. Flat-Oval Ducts: Prefabricated connection system consisting of two flanges and one synthetic rubber or butyl gasket.
   a. Manufacturers:
      1) Lindab.
      2) McGill AirFlow Corporation.
      3) SPOT.
      4) GAP.

E. 90-Degree Tees and Laterals and Conical Tees: Fabricate to comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible," with metal thicknesses specified for longitudinal-seam straight ducts.

F. Diverging-Flow Fittings: Fabricate with entrance to branch taps and with no excess material projecting from fitting onto branch tap entrance.

G. Fabricate elbows using die-formed, gored, pleated, or mitered construction. Center line bend radius of die-formed, gored, and pleated elbows shall be 1-1/2 times duct diameter. Unless elbow construction type is indicated, fabricate elbows as follows:
   1. Mitered-Elbow Radius and Number of Pieces: Welded construction complying with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible," unless otherwise indicated.
   2. Round Mitered Elbows: Welded construction with the same metal thickness as longitudinal seam round duct.
   3. Flat-Oval Mitered Elbows: Welded construction with same metal thickness as longitudinal-seam flat-oval duct.
   4. 90-Degree, 2-Piece, Mitered Elbows: Use only for supply systems or for material-handling Class A or B exhaust systems and only where space restrictions do not permit using radius elbows. Fabricate with single-thickness turning vanes.
   5. Round Elbows 8 Inches (200 mm) and Less in Diameter: Fabricate die-formed elbows for 45- and 90-degree elbows and pleated elbows for 30, 45, 60, and 90 degrees only. Fabricate nonstandard bend-angle configurations or nonstandard diameter elbows with gored construction. Use SMACNA standards for number of gores.
   6. Round Elbows 9 through 14 Inches (225 through 355 mm) in Diameter: Fabricate gored or pleated elbows for 30, 45, 60, and 90 degrees unless space restrictions require mitered elbows. Fabricate nonstandard bend-angle configurations or nonstandard diameter elbows with gored construction. Use SMACNA standards for number of gores.
   7. Round Elbows Larger Than 14 Inches (355 mm) in Diameter and All Flat-Oval Elbows: Fabricate gored elbows unless space restrictions require mitered elbows. Use SMACNA standards for number of gores.
   8. Die-Formed Elbows for Sizes through 8 Inches (200 mm) in Diameter and All Pressures 0.040 inch (1.0 mm) thick with 2-piece welded construction.
   9. Round Gored-Elbow Metal Thickness: Same as non-elbow fittings specified above.
   10. Flat-Oval Elbow Metal Thickness: Same as longitudinal-seam flat-oval duct specified above.

11. Pleated Elbows for Sizes through 14 Inches (355 mm) in Diameter and Pressures through 10-Inch wg (2500 Pa): 0.022 inch (0.55 mm).
12. Adjustable elbows shall not be allowed.
13.

2.6 FABRICATION OF DUCTWORK FOR REMOVAL OF SMOKE AND GREASE-LADEN VAPORS:

A. Grease duct to be factory fabricated, double wall type, suitable for venting of grease laden air from kitchen hoods requiring grease duct as described in NFPA 96. Duct shall have a 0" clearance to combustibles rating.

B. The duct shall conform to the requirements of NFPA-96. Product shall be approved by BOCA Evaluation Services, ICBO and SBCCI as a two hour fire-rated assembly. Copies of code approval shall be submitted along with the manufacture's data.

C. Grease duct shall be rated for continuous operation at 500 F and intermittent operation at 2000 F.

D. The inner wall shall be constructed of 0.035" thick Type 304 stainless steel. The outer wall shall be constructed of 0.025" thick aluminized steel. The annular space between the inner and outer walls shall be filled with a 4" high temperature ceramic fiber insulation.

E. All mechanical joints shall be sealed with Type P080 sealant.

F. All components of the grease duct system shall be provided by the manufacturer to ensure the system meets the requirements of the listing. This includes pipe support and guides, clean-outs, expansion joints, hood/ fan transitions and roof supports.

G. The manufacturer of the grease duct shall provide assembly drawings and certify duct design is in compliance with NFPA 96, Section 4-7.1.

H. The grease duct and all parts supplied by the manufacturer shall have a 12-year warranty, starting from the date of shipment.

I. Acceptable Manufacture: Metal Fab – 4G.

PART 3 - EXECUTION

3.1 DUCT APPLICATIONS

A. Static-Pressure Classes: Unless otherwise indicated, construct ducts according to the following:
1. Supply Ducts (Const. Vol. Air Systems): 1-inch wg.
2. Return Ducts (Negative Pressure): 1-inch wg.
3. Exhaust Ducts (Negative Pressure): 1-inch wg.
4. Exhaust ducts (Negative Pressure): 6-inch wg.

B. All ducts shall be galvanized steel except as follows:
   1. Kitchen Hood Exhaust Ducts: Comply with NFPA 96.
      a. Double-wall, high-temperature grease duct.
      b. Welded steel with fire blanket.

3.2 DUCT INSTALLATION

A. Construct and install ducts according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible," unless otherwise indicated.

B. Install round and flat-oval ducts in lengths not less than 10 feet (3.7 m) unless interrupted by fittings.

C. Install ducts with fewest possible joints.

D. Install fabricated fittings for changes in directions, size, and shape and for connections.

E. Install couplings tight to duct wall surface with a minimum of projections into duct. Secure couplings with sheet metal screws. Install screws at intervals of 12 inches (300 mm), with a minimum of 3 screws in each coupling.

F. Install ducts, unless otherwise indicated, vertically and horizontally and parallel and perpendicular to building lines; avoid diagonal runs.

G. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.

H. Install ducts with a clearance of 1 inch (25 mm), plus allowance for insulation thickness.

I. Conceal ducts from view in finished spaces. Do not encase horizontal runs in solid partitions unless specifically indicated.

J. Coordinate layout with suspended ceiling, fire- and smoke-control dampers, lighting layouts, and similar finished work.

K. Seal all joints and seams. Apply sealant to male end connectors before insertion, and afterward to cover entire joint and sheet metal screws.

L. Electrical Equipment Spaces: Route ducts to avoid passing through transformer vaults and electrical equipment spaces and enclosures.

M. Non-Fire-Rated Partition Penetrations: Where ducts pass through interior partitions and exterior walls and are exposed to view, conceal spaces between construction openings and ducts or duct insulation with sheet metal flanges of same metal thickness as ducts. Overlap openings on 4 sides by at least 1-1/2 inches (38 mm).

N. Fire-Rated Partition Penetrations: Where ducts pass through interior partitions and exterior walls, install appropriately rated fire dampers, sleeves, and firestopping sealant. Fire and

smoke dampers are specified in Division 15 Section "Duct Accessories." Firestopping materials and installation methods are specified in Division 7 Section "Through-Penetration Firestop Systems."

O. Protect duct interiors from the elements and foreign materials until building is enclosed.

P. Paint interiors of metal ducts, that do not have duct liner, for 24 inches (600 mm) upstream of registers and grilles. Apply one coat of flat, black, latex finish coat over a compatible galvanized-steel primer. Paint materials and application requirements are specified in Division 9 painting Sections.

## 3.3 KITCHEN HOOD EXHAUST DUCTS, SPECIAL INSTALLATION REQUIREMENTS

A. Install ducts to allow for thermal expansion through 2000 deg F (1110 deg C) temperature range.

B. Install ducts without dips or traps that may collect residues unless traps have continuous or automatic residue removal.

C. Install access openings at each change in direction and at intervals defined by NFPA 96; locate on sides of duct a minimum of 1-1/2 inches (38 mm) from bottom; and fit with grease-tight covers of same material as duct.

D. Do not penetrate fire-rated assemblies except as permitted by applicable building codes.

## 3.4 SEAM AND JOINT SEALING

A. Seal duct seams and joints according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" to seal class A.

B. Seal ducts before external insulation is applied.

## 3.5 HANGING AND SUPPORTING

A. Support horizontal ducts within 24 inches (600 mm) of each elbow and within 48 inches (1200 mm) of each branch intersection.

B. Support vertical ducts at maximum intervals of 16 feet (5 m) and at each floor.

C. Install upper attachments to structures with an allowable load not exceeding one-fourth of failure (proof-test) load.

D. Install concrete inserts before placing concrete.

E. Install powder-actuated concrete fasteners after concrete is placed and completely cured.
   1. Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches (100 mm) thick.

## 3.6 CONNECTIONS

A. Make connections to equipment with flexible connectors according to Division 15 Section "Duct Accessories."

B. Comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

## 3.7 CLEANING NEW SYSTEMS

A. Mark position of dampers and air-directional mechanical devices before cleaning, and perform cleaning before air balancing.

B. Use service openings, as required, for physical and mechanical entry and for inspection.
   1. Create other openings to comply with duct standards.
   2. Disconnect flexible ducts as needed for cleaning and inspection.
   3. Remove and reinstall ceiling sections to gain access during the cleaning process.

C. Vent vacuuming system to the outside. Include filtration to contain debris removed from HVAC systems, and locate exhaust down wind and away from air intakes and other points of entry into building.

D. Clean the following metal duct systems by removing surface contaminants and deposits:
   1. Air outlets and inlets (registers, grilles, and diffusers).
   2. Supply, return, and exhaust fans including fan housings, plenums (except ceiling supply and return plenums), scrolls, blades or vanes, shafts, baffles, dampers, and drive assemblies.
   3. Air-handling unit internal surfaces and components including mixing box, coil section, air wash systems, spray eliminators, condensate drain pans, humidifiers and dehumidifiers, filters and filter sections, and condensate collectors and drains.
   4. Coils and related components.
   5. Return-air ducts, dampers, and actuators except in ceiling plenums and mechanical equipment rooms.
   6. Supply-air ducts, dampers, actuators, and turning vanes.

E. Mechanical Cleaning Methodology:
   1. Clean metal duct systems using mechanical cleaning methods that extract contaminants from within duct systems and remove contaminants from building.
   2. Use vacuum-collection devices that are operated continuously during cleaning. Connect vacuum device to downstream end of duct sections so areas being cleaned are under negative pressure.
   3. Use mechanical agitation to dislodge debris adhered to interior duct surfaces without damaging integrity of metal ducts, duct liner, or duct accessories.
   4. Clean coils and coil drain pans according to NADCA 1992. Keep drain pan operational. Rinse coils with clean water to remove latent residues and cleaning materials; comb and straighten fins.

F. Cleanliness Verification:

1. Visually inspect metal ducts for contaminants.
2. Where contaminants are discovered, re-clean and reinspect ducts.

END OF SECTION 15815

# SECTION 15820 - DUCT ACCESSORIES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:

1. Backdraft dampers.
2. Volume dampers.
3. Motorized control dampers.
4. Fire dampers.
5. Ceiling fire dampers.
6. Turning vanes.
7. Duct-mounting access doors.
8. Flexible connectors.
9. Flexible ducts.
10. Duct accessory hardware.

B. Related Sections include the following:

1. Division 13 Section "Fire Alarm" for duct-mounting fire and smoke detectors.

### 1.3 SUBMITTALS

A. Product Data: For the following:

1. Backdraft dampers.
2. Volume dampers.
3. Motorized control dampers.
4. Fire dampers.
5. Ceiling fire dampers.
6. Turning vanes.
7. Duct-mounting access doors.
8. Flexible connectors.
9. Flexible ducts.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Special fittings.
2. Manual-volume damper installations.
3. Motorized-control damper installations.
4. Fire-damper, smoke-damper, and combination fire- and smoke-damper installations, including sleeves and duct-mounting access doors.
5. Wiring Diagrams: Power, signal, and control wiring.

C. Coordination Drawings: Reflected ceiling plans, drawn to scale and coordinating penetrations and ceiling-mounting items. Show ceiling-mounting access panels and access doors required for access to duct accessories.

## 1.4 QUALITY ASSURANCE

A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."

## 1.5 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fusible Links: Furnish quantity equal to 10 percent of amount installed.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

## 2.2 SHEET METAL MATERIALS

A. Comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods, unless otherwise indicated.

B. Galvanized Sheet Steel: Lock-forming quality; complying with ASTM A 653/A 653M and having G90 (Z275) coating designation; ducts shall have mill-phosphatized finish for surfaces exposed to view.

C. Stainless Steel: ASTM A 480/A 480M.

D. Aluminum Sheets: ASTM B 209 (ASTM B 209M), alloy 3003, temper H14; with mill finish for concealed ducts and standard, 1-side bright finish for exposed ducts.

E. Extruded Aluminum: ASTM B 221 (ASTM B 221M), alloy 6063, temper T6.

F. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless-steel ducts.

G. Tie Rods: Galvanized steel, 1/4-inch minimum diameter for lengths 36 inches or less; 3/8-inch minimum diameter for lengths longer than 36 inches.

## 2.3 BACKDRAFT DAMPERS

A. Manufacturers:
1. CESCO Products.
2. Greenheck.
3. Ruskin Company.

B. Description: Multiple-blade, parallel action gravity balanced, with blades of maximum 6-inch width, with sealed edges, assembled in rattle-free manner with 90-degree stop, steel ball bearings, and axles; adjustment device to permit setting for varying differential static pressure.

C. Frame: 20 gauge, galvanized sheet steel, with welded corners and mounting flange.

D. Blades: 0.025-inch- thick, roll-formed aluminum.

E. Blade Seals: Vinyl.

F. Blade Axles: Stainless Steel.

G. Tie Bars and Brackets: Galvanized steel.

H. Basis of Design: Ruskin S3G.

## 2.4 VOLUME DAMPERS

A. Manufacturers:
1. Flexmaster U.S.A., Inc.
2. METALAIRE, Inc.
3. Nailor Industries Inc.
4. Ruskin Company.
5. Greenheck.

B. General Description: Factory fabricated, with required hardware and accessories. Stiffen damper blades for stability. Include locking device to hold single-blade dampers in a fixed position without vibration. Close duct penetrations for damper components to seal duct consistent with pressure class.

1. Pressure Classes of 2-Inch wg (750 Pa) or Higher: End bearings or other seals for ducts with axles full length of damper blades and bearings at both ends of operating shaft.

C. Standard Volume Dampers: Multiple- or single-blade, parallel- or opposed-blade design as indicated, standard leakage rating, with linkage outside airstream, and suitable for horizontal or vertical applications.

1. Steel Frames: Hat-shaped, galvanized sheet steel channels, minimum of 22 gauge thick, with mitered and welded corners; frames with flanges where indicated for attaching to walls and flangeless frames where indicated for installing in ducts.
2. Single Skin Steel Blades: 22 gauge, galvanized sheet steel.
3. Blade Axles: Galvanized steel.
4. Bearings: Molded synthetic.
5. Tie Bars and Brackets: Aluminum.
6. Tie Bars and Brackets: Galvanized steel.
7. Basis of Design: Ruskin MD 15 (rectangular) and MDRS25 (round).

D. Jackshaft: 1-inch diameter, galvanized-steel pipe rotating within pipe-bearing assembly mounted on supports at each mullion and at each end of multiple-damper assemblies.

1. Length and Number of Mountings: Appropriate to connect linkage of each damper in multiple-damper assembly.

E. Damper Hardware: Zinc-plated, die-cast core with dial and handle made of 3/32-inch thick zinc-plated steel, and a 3/4-inch hexagon locking nut. Include center hole to suit damper operating-rod size. Include elevated platform for insulated duct mounting.

## 2.5 MOTORIZED CONTROL DAMPERS

A. Manufacturers:
1. CESCO Products.
2. Greenheck.
3. METALAIRE, Inc.
4. Nailor Industries Inc.
5. Ruskin Company.

B. General Description: AMCA-rated, parallel (return air applications) or opposed (outside air applications) blade design; minimum of 16 gauge thick, galvanized-steel frames with holes for duct mounting; minimum of 16 gauge thick, galvanized-steel damper blades with maximum blade width of 8 inches.

1. Secure blades to 1/2-inch diameter, zinc-plated axles using zinc-plated hardware, with nylon blade bearings, blade-linkage hardware of zinc-plated steel and brass, ends sealed against spring-stainless-steel blade bearings, and thrust bearings at each end of every blade.
2. Operating Temperature Range: From minus 40 to plus 200 deg F (minus 40 to plus 93 deg C).

3. Provide closed-cell neoprene edging rated for leakage at less than 10 cfm per sq. ft. of damper area, at differential pressure of 1-inch wg; when tested according to AMCA 500D.

C. Basis of Design: Ruskin CD35.

## 2.6 FIRE DAMPERS

A. Manufacturers:
1. CESCO Products.
2. Greenheck.
3. METALAIRE, Inc.
4. Nailor Industries Inc.
5. Ruskin Company.

B. Fire dampers shall be labeled according to UL 555.

C. Fire Rating: 1-1/2 hours (3 hours as noted).

D. Frame: Curtain type with blades outside airstream; fabricated with roll-formed, 20 gauge galvanized steel; with mitered and interlocking corners.

E. Mounting Sleeve: Factory- or field-installed, galvanized sheet steel.
1. Minimum Thickness: 20 gauge frame complies with sleeve requirements.

F. Mounting Orientation: Vertical or horizontal as indicated.

G. Blades: 24 gauge, galvanized sheet steel. In place of interlocking blades, use full-length, 0.034-inch thick, galvanized-steel blade connectors.

H. Horizontal Dampers: Include blade lock and stainless-steel closure spring.

I. Fusible Links: Replaceable, 165 deg F rated.

J. Basis of Design: 1-1/2 hour – Ruskin 1BD2-B (rectangular) and FDR25 (round), 3 hour – Ruskin 1BD2-B3 (rectangular)

## 2.7 CEILING FIRE DAMPERS

A. Manufacturers:
1. CESCO Products.
2. Greenheck.
3. METALAIRE, Inc.
4. Nailor Industries Inc.
5. Ruskin Company.

B. General Description: Labeled according to UL 555C; comply with construction details for tested floor- and roof-ceiling assemblies as indicated in UL's "Fire Resistance Directory."

C. Frame: 20 gauge galvanized sheet steel, round or rectangular, style to suit ceiling construction.

D. Blades: 20 gauge galvanized sheet steel with refractory insulation.

E. Fusible Links: Replaceable, 165 deg F rated.

F. Thermal Insulating Blanket: ½" mineral wool.

G. Basis of Design: Ruskin CFD5 (rectangular) and CFDR5 (round).

## 2.8 TURNING VANES

A. Fabricate to comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for vanes and vane runners. Vane runners shall automatically align vanes.

B. Manufactured Turning Vanes: Fabricate 1-1/2-inch-wide, double-vane, curved blades of galvanized sheet steel set 3/4 inch o.c.; support with bars perpendicular to blades set 2 inches o.c.; and set into vane runners suitable for duct mounting.

C. Acoustic Turning Vanes: Fabricate airfoil-shaped aluminum extrusions with perforated faces and fibrous-glass fill.

## 2.9 DUCT-MOUNTING ACCESS DOORS

A. General Description: Fabricate doors airtight and suitable for duct pressure class.

B. Door: Double wall, duct mounting, and rectangular; fabricated of galvanized sheet metal with insulation fill and thickness as indicated for duct pressure class. Include vision panel where indicated. Include 1-by-1-inch butt or piano hinge and cam latches.

1. Manufacturers:
    a. CESCO Products.
    b. Flexmaster U.S.A., Inc.
    c. Greenheck.
    d. Nailor Industries Inc.

2. Frame: Galvanized sheet steel, with bend-over tabs and foam gaskets.
3. Provide number of hinges and locks as follows:

    a. Less Than 12 Inches Square: Secure with two sash locks.
    b. Up to 18 Inches Square: Two hinges and two sash locks.
    c. Up to 24 by 48 Inches: Three hinges and two compression latches.
    d. Sizes 24 by 48 Inches and Larger: One additional hinge.

C. Seal around frame attachment to duct and door to frame with neoprene or foam rubber.

D. Insulation: 1-inch-thick, fibrous-glass or polystyrene-foam board.

2.10 FLEXIBLE CONNECTORS

A. Manufacturers:

1. Ductmate Industries, Inc.
2. Duro Dyne Corp.
3. Ventfabrics, Inc.
4. Ward Industries, Inc.

B. General Description: Flame-retardant or noncombustible fabrics, coatings, and adhesives complying with UL 181, Class 1.

C. Metal-Edged Connectors: Factory fabricated with a fabric strip 3-1/2 inches wide attached to two strips of 2-3/4-inch- wide, 0.028-inch-thick, galvanized sheet steel or 0.032-inch-thick aluminum sheets. Select metal compatible with ducts.

D. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.

1. Minimum Weight: 26 oz./sq. yd.
2. Tensile Strength: 480 lbf/inch in the warp and 360 lbf/inch in the filling.
3. Service Temperature: Minus 40 to plus 200 deg F (Minus 40 to plus 93 deg C).

E. Outdoor System, Flexible Connector Fabric: Glass fabric double coated with weatherproof, synthetic rubber resistant to UV rays and ozone.

1. Minimum Weight: 24 oz./sq. yd. (810 g/sq. m).
2. Tensile Strength: 530 lbf/inch in the warp and 440 lbf/inch in the filling.
3. Service Temperature: Minus 50 to plus 250 deg F (Minus 45 to plus 121 deg C).

2.11 INSULATED ACOUSTICAL MEDIUM PRESSURE FLEXIBLE DUCT

A. Where flexible duct is shown on drawings, provide Flexmaster Type 8M UL 181 Class I Air Duct or equal. Min R-Value shall be R-6.

B. The duct shall be constructed of a CPE fabric supported by helical wound galvanized steel. The fabric shall be mechanically locked to the steel helix without the use of adhesives or chemicals.

C. The internal working pressure rating shall be at least 6” w.g. positive and 4” w.g. negative with a bursting pressure of at least 2 ½ time the working pressure

D. The duct shall be rated for a velocity of at lease 4000 feet per minute.

E. The duct must be suitable for continuous operation at a temperature range of -20° F to +250° F.

F. Acoustical performance, when tested by an independent laboratory in accordance with the Air Diffusion Council’s Flexible Air Duct Test Code FD 72-R1, Section 3.0, Sound Properties, shall be as follows:

1. The insertion loss (dB) of a 10 foot length of straight duct when tested in accordance with ASTM E477, at a velocity of 2500 feet per minute, shall be at least:

| Octave Band | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Hz. | 125 | 250 | 500 | 1000 | 2000 | 4000 |
| 6” | 7 | 31 | 40 | 38 | 40 | 27 |
| 8” | 13 | 29 | 36 | 35 | 38 | 22 |
| 12” | 21 | 28 | 29 | 33 | 26 | 12 |

2. The radiated noise reduction (dB) of a 10 foot length of straight duct when tested in accordance with ASTM E477, at a velocity of 2500 feet per minute, shall be at least:

| Octave Band | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Hz. | 125 | 250 | 500 | 1000 | 2000 | 4000 |
| 6” | 5 | 8 | 7 | 8 | 11 | 15 |
| 8” | 10 | 7 | 7 | 8 | 10 | 13 |
| 12” | 9 | 6 | 6 | 5 | 9 | 13 |

3. The self generated sound power levels (LW) dB re $10^{-12}$ Watt of a 10 foot length of straight duct for an empty sheet metal duct when tested in accordance with ASTM E477, at a velocity of 1000 feet per minute, shall not exceed:

| Octave Band | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Hz. | 125 | 250 | 500 | 1000 | 2000 | 4000 |
| 6” | 42 | 31 | 23 | 18 | 17 | 21 |
| 8” | 41 | 34 | 27 | 19 | 18 | 21 |
| 12” | 54 | 45 | 38 | 31 | 27 | 23 |

G. Factory insulate the flexible duct with fiberglass insulation. Provide insulation as required by ASHRAE 90.1.

H. Cover the insulation with a fire retardant metalized vapor barrier jacket reinforced with crosshatched scrim having a permeance of not greater than 0.05 perms when tested in accordance with ASTM #96, Procedure A.

## 2.12 DUCT ACCESSORY HARDWARE

A. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct insulation thickness.

B. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.

# PART 3 - EXECUTION

## 3.1 APPLICATION AND INSTALLATION

A. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards--Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.

B. Provide duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel ducts, stainless-steel accessories in stainless-steel ducts, and aluminum accessories in aluminum ducts.

C. Install backdraft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated.

D. Provide balancing dampers at points on supply, return, and exhaust systems where branches lead from larger ducts as required for air balancing. Install at a minimum of two duct widths from branch takeoff.

E. Provide test holes at fan inlets and outlets and elsewhere as indicated.

F. Install fire and smoke dampers, with fusible links, according to manufacturer's UL-approved written instructions.

G. Install duct access doors to allow for inspecting, adjusting, and maintaining accessories and terminal units as follows:

1. On both sides of duct coils.
2. Downstream from volume dampers and equipment.
3. Adjacent to fire or smoke dampers, providing access to reset or reinstall fusible links.

4. To interior of ducts for cleaning; before and after each change in direction, at maximum 50-foot spacing.
5. On sides of ducts where adequate clearance is available.

H. Install the following sizes for duct-mounting, rectangular access doors:

1. One-Hand or Inspection Access: 8 by 5 inches.
2. Two-Hand Access: 12 by 6 inches.
3. Head and Hand Access: 18 by 10 inches.
4. Head and Shoulders Access: 21 by 14 inches.
5. Body Access: 25 by 14 inches.
6. Body Plus Ladder Access: 25 by 17 inches.

I. Install the following sizes for duct-mounting, round access doors:

1. One-Hand or Inspection Access: 8 inches in diameter.
2. Two-Hand Access: 10 inches in diameter.
3. Head and Hand Access: 12 inches in diameter.
4. Head and Shoulders Access: 18 inches in diameter.
5. Body Access: 24 inches in diameter.

J. Label access doors according to Division 15 Section "Mechanical Identification."

K. Install flexible connectors immediately adjacent to equipment in ducts associated with fans and motorized equipment supported by vibration isolators.

L. For fans developing static pressures of 5-inch wg and higher, cover flexible connectors with loaded vinyl sheet held in place with metal straps.

M. Connect diffusers or light troffer boots to low pressure ducts with maximum 60-inch lengths of flexible duct clamped or strapped in place.

N. Connect flexible ducts to metal ducts with draw bands.

O. Install duct test holes where indicated and required for testing and balancing purposes.

## 3.2 ADJUSTING

A. Adjust duct accessories for proper settings.

B. Adjust fire and smoke dampers for proper action.

C. Final positioning of manual-volume dampers is specified in Division 15 Section "Testing, Adjusting, and Balancing."

END OF SECTION 15820

# SECTION 15838 - POWER VENTILATORS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:
   1. Ceiling-mounting ventilators.
   2. In-line centrifugal fans.

### 1.3 PERFORMANCE REQUIREMENTS

A. Project Altitude: Base air ratings on sea-level conditions.

B. Operating Limits: Classify according to AMCA 99.

### 1.4 SUBMITTALS

A. Product Data: Include rated capacities, furnished specialties, and accessories for each type of product indicated and include the following:
   1. Certified fan performance curves with system operating conditions indicated.
   2. Certified fan sound-power ratings.
   3. Motor ratings and electrical characteristics, plus motor and electrical accessories.
   4. Material gages and finishes, including color charts.
   5. Dampers, including housings, linkages, and operators.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   1. Wiring Diagrams: Power, signal, and control wiring. Differentiate between manufacturer-installed and field-installed wiring.
   2. Design Calculations: Calculate requirements for selecting vibration isolators and for designing vibration isolation bases.
   3. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include auxiliary motor slides and rails, and base weights.

C. Coordination Drawings: Show roof penetration requirements and reflected ceiling plans drawn to scale and coordinating roof penetrations and units mounted above ceiling. Show the following:
   1. Roof framing and support members relative to duct penetrations.
   2. Ceiling suspension assembly members.
   3. Size and location of initial access modules for acoustical tile.
   4. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

D. Maintenance Data: For power ventilators to include in maintenance manuals specified in Division 1.

## 1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. AMCA Compliance: Products shall comply with performance requirements and shall be licensed to use the AMCA-Certified Ratings Seal.

C. NEMA Compliance: Motors and electrical accessories shall comply with NEMA standards.

D. UL Standard: Power ventilators shall comply with UL 705.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver fans as factory-assembled unit, to the extent allowable by shipping limitations, with protective crating and covering.

B. Disassemble and reassemble units, as required for moving to final location, according to manufacturer's written instructions.

C. Lift and support units with manufacturer's designated lifting or supporting points.

## 1.7 COORDINATION

A. Coordinate size and location of structural-steel support members.

B. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3 Section "Cast-in-Place Concrete."

C. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 7 Section "Roof Accessories."

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Ceiling-Mounting Ventilators:
   a. Cook, Loren Company.
   b. Greenheck Fan Corp.

2. In-Line Centrifugal Fans:
   a. Cook, Loren Company.
   b. Greenheck Fan Corp.

2.2 CEILING-MOUNTED VENTILATORS

A. Description: Centrifugal fans designed for installing in ceiling or wall or for concealed in-line applications.

B. Housing: Steel, lined with acoustical insulation.

C. Fan Wheel: Centrifugal wheels directly mounted on motor shaft. Fan shrouds, motor, and fan wheel shall be removable for service.

D. Grille: Plastic, louvered grille with flange on intake and thumbscrew attachment to fan housing.

E. Electrical Requirements: Junction box for electrical connection on housing and receptacle for motor plug-in.

F. Accessories:
   1. Variable-Speed Controller: Solid-state control to reduce speed from 100 percent to less than 50 percent.
   2. Manual Starter Switch: Single-pole rocker switch assembly with cover and pilot light.
   3. Ceiling Radiation Damper: Fire-rated assembly with ceramic blanket, stainless-steel springs, and fusible link.
   4. Isolation: Rubber-in-shear vibration isolators.

G. Basis of Design: Cook “Gemini”

2.3 IN-LINE CENTRIFUGAL FANS

A. Description: In-line centrifugal fans consisting of housing, wheel, outlet guide vanes, fan shaft, bearings, motor and disconnect switch, drive assembly, mounting brackets, and accessories.

B. Housing: Split, spun aluminum with aluminum straightening vanes, inlet and outlet flanges, and support bracket adaptable to floor, side wall, or ceiling mounting.

C. Direct-Driven Units: Motor encased in housing outside of airstream, factory wired to disconnect switch located on outside of fan housing.

D. Belt-Driven Units: Motor mounted on adjustable base, with adjustable sheaves, enclosure around belts within fan housing, and lubricating tubes from fan bearings extended to outside of fan housing.

E. Fan Wheels: Aluminum, airfoil blades welded to aluminum hub.

F. Accessories:

1. Volume-Control Damper: Manually operated with quadrant lock, located in fan outlet.
2. Companion Flanges: For inlet and outlet duct connections.
3. Fan Guards: 1/2- by 1-inch mesh of galvanized steel in removable frame. Provide guard for inlet or outlet for units not connected to ductwork.
4. Motor and Drive Cover (Belt Guard): Epoxy-coated steel.

G. Basis of Design: Cook Model “SQN”

## 2.4 MOTORS

A. Enclosure Type: Guarded dripproof.

## 2.5 SOURCE QUALITY CONTROL

A. Sound-Power Level Ratings: Comply with AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.

B. Fan Performance Ratings: Establish flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests and ratings according to AMCA 210, "Laboratory Methods of Testing Fans for Rating."

# PART 3 - EXECUTION

## 3.1 INSTALLATION

A. Install power ventilators level and plumb.

B. Support units using spring isolators having a static deflection of 1 inch. Vibration- and seismic-control devices are specified in Division 15 Section "Mechanical Vibration Controls."
1. Secure vibration controls to concrete bases using anchor bolts cast in concrete base.

C. Ceiling Units: Suspend units from structure.

D. Support suspended units from structure using threaded steel rods and spring hangers. Vibration-control devices are specified in Division 15 Section "Mechanical Vibration Controls."

E. Install units with clearances for service and maintenance.

F. Label units according to requirements specified in Division 15 Section "Mechanical Identification."

## 3.2 CONNECTIONS

A. Duct installation and connection requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors. Flexible connectors are specified in Division 15 Section "Duct Accessories."

B. Install ducts adjacent to power ventilators to allow service and maintenance.

C. Ground equipment.

D. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

## 3.3 FIELD QUALITY CONTROL

A. Equipment Startup Checks:
   1. Verify that shipping, blocking, and bracing are removed.
   2. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
   3. Verify that cleaning and adjusting are complete.
   4. Disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
   5. Verify lubrication for bearings and other moving parts.
   6. Verify that manual and automatic volume control and fire and smoke dampers in connected ductwork systems are in fully open position.
   7. Disable automatic temperature-control operators.

B. Starting Procedures:
   1. Energize motor and adjust fan to indicated rpm.
   2. Measure and record motor voltage and amperage.

C. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Remove malfunctioning units, replace with new units, and retest.

D. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Shut unit down and reconnect automatic temperature-control operators.

F. Refer to Division 15 Section "Testing, Adjusting, and Balancing" for testing, adjusting, and balancing procedures.

G. Replace fan and motor pulleys as required to achieve design airflow.

H. Repair or replace malfunctioning units. Retest as specified above after repairs or replacements are made.

## 3.4 ADJUSTING

A. Adjust damper linkages for proper damper operation.

B. Lubricate bearings.

## 3.5 CLEANING

A. On completion of installation, internally clean fans according to manufacturer's written instructions. Remove foreign material and construction debris. Vacuum fan wheel and cabinet.

B. After completing system installation, including outlet fitting and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finishes.

## 3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain power ventilators.
   1. Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment and schedules.
   2. Review data in maintenance manuals. Refer to Division 1 Section "Closeout Procedures."
   3. Review data in maintenance manuals. Refer to Division 1 Section "Operation and Maintenance Data."
   4. Schedule training with Owner, through Architect, with at least seven days' advance notice.

END OF SECTION 15838

SECTION 15839 - GENERAL VENTILATION FANS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

1. The fan is the model scheduled with the capacities indicated. The fan shall be furnished with OSHA-compliant guards, a locking position mechanism for rotational adjustments, and a multiple speed controller.

B. Summary of Work

1. Installation of the fan, miscellaneous or structural metal work (if required), field electrical wiring, cable, conduit, fuses and disconnect switches, other than those addressed in the installation scope of work, shall be provided by others. Factory installation services are available through manufacturer company. Consult the appropriate installation scope of work for information on the available factory installation options, overview of customer and installer responsibilities, and details on installation site requirements.

1.2 RELATED SECTIONS

A. Fire Suppression
B. Heating, Ventilating, and Air Conditioning (HVAC)
C. Electrical

1.3 REFERENCES

A. National Fire Protection Agency (NFPA)
B. Underwriters Laboratory (UL)
C. Restriction of Hazardous Substances (ROHS)
D. International Organization for Standardization (ISO)
E. National Electrical Manufacturers Association (NEMA)
F. Occupational Safety and Health Administration (OSHA)

1.4 SUBMITTALS

A. Shop Drawings: Drawings detailing product dimensions, weight, and attachment methods.
B. Product Data: Specification sheets on the ceiling-mounted fan, specifying electrical and installation requirements, features and benefits, and controller information.
C. Installation Guide: The manufacturer shall furnish a copy of all installation, operation, and maintenance instructions for the fan.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications

1. The fan and any accessories shall be supplied by the same company that has a minimum of ten (10) years of product experience with high volume, low speed (HVLS) industrial fans.
2. The manufacturer shall be ISO 9001:2008-certified.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver product in original, undamaged packaging with identification labels intact. The fan shall be new, free from defects, and factory tested.

B. The fan and its components must be stored in a safe, dry location until installation.

1.6 WARRANTY

A. The manufacturer shall replace any products or components defective in material or workmanship for the customer free of charge (including transportation charges within the USA), pursuant to the complete terms and conditions of the manufacturer's Non-Prorated Warranty in accordance to the following schedule:

| | |
|---|---|
| Hub and airfoils | Lifetime (parts)† |
| Motor and controller | 3 years (parts) |
| All other fan components | 3 years (parts) |
| Refurbished units | 6 months (parts) |

† "Lifetime" means a period ending seven (7) years after factory discontinues manufacturing the product.

PART 2 PRODUCT

2.1 MANUFACTURER

A. Delta T Corporation, dba Big Ass Fan Company, PO Box 11307, Lexington, Kentucky 40575. Phone (877) 244-3267. Fax (859) 233-0139. Website: www.bigassfans.com.

2.3. FANS

A. Complete fan assembly
   1. Function: The fan shall be designed for portable use or adaptable mounting in spaces requiring localized air movement.
   2. Color: The fan's standard color shall be yellow. A white appearance package shall be available as an option. Custom colors can be selected by the architect or owner.
   3. Optional feature: The fan shall have an oscillator available as an option to be selected at the time of order. Not all mounting systems are compatible with this option; consult the installation guide for details.
   4. Quality: The fan shall display good workmanship in all aspects of its construction.

B. Motor
   1. The fan shall be equipped with an electrically commutated motor (ECM) rated at 0.5 Hp, 1160 RPM, 100-125 V, 1 ϕ, and 50/60 Hz or 200–250 V, 1 ϕ, and 50/60 Hz.
   2. The motor shall have an IP45 rating and an operational temperature range of -40°F to 122°F (-40°C to 50°C).

C. Motor Frame: The fan motor frame and mount shall be constructed of powder coated steel.

D. Hub: The fan hub shall be precision cast aluminum for high strength, light weight, and resistance to corrosion.

E. Blade System: The fan shall be equipped with 3 progressive pitch nylon blades.

F. Cage and Housing
   1. The fan shall be equipped with a rugged cage and housing to protect both the fan and users during operation.
   2. The fan cage and housing shall be OSHA-compliant.
   3. Fan guards shall be of welded wire construction using steel no less than ⅛" (0.3 cm) thick, and shall be easily removable for servicing and cleaning of the fan.
   4. The fan housing shall be constructed of vibration-damping high density polyethylene.
   5. The fan airflow angle shall be easily adjustable by means of a position locking pin and plate mechanism on the cage and housing.

G. Controller
    1. The fan shall be equipped with an onboard controller that turns the fan on/off and features 10 different speed settings from 300–1300 RPM.
    2. The controller shall be IP45-rated and UL-listed, and shall be shipped with a pre-wired 10′ (3 m) power cord and plug.
    3. The controller shall be preassembled to operate from a 100–125 V, 50/60 Hz power supply, and can be converted in the field to operate on 200–250 V, 50/60 Hz.
    4. A remotely mounted controller shall be available as an optional accessory to operate a fan that is mounted in an inaccessible location. A cable 15′ (4.6 m) in length shall be provided with the remotely mounted speed control; however, the control can be mounted up to 50′ (15.24 m) from the location of the fan using customer-supplied cable.

H. Mounting System
    1. The fan shall admit multiple mounting methods to accommodate a wide variety of airflow needs and building structures.
        a. Portable Base: The portable base allows the fan mobility around a workspace to create airflow where it is needed most. The portable base shall include an ergonomic handle, rubber stoppers and two 8″ (20 cm) shatter resistant rubber wheels for indoor and outdoor mobility. The fan may be secured directly to the portable base or may be mounted on one or two 18″ (46 cm) pedestals, for a maximum height of 36″ (91 cm) above the base.
        b. Yoke Mount: The fan can be mounted to bar joists and horizontal I-beams using the Yoke Mount and customer-supplied hardware. I-beams must have a flange thickness between ⅛″ (3.2 mm) and 1-7/16″ (36.5 mm).
        c. Wall/Column Mount: The fan can be mounted to a wall or column using the Wall/Column Mount and customer-supplied hardware. The column can be one of a variety of shapes, e.g., round, flanged, square.
        d. Suspension Mount: The fan can be hung from a metal or wood superstructure or a concrete ceiling using the Yoke Washer Assembly Kit with a customer-supplied chain or cable and appropriate hardware.
    2. The manufacturer-supplied mounting assembly shall be of welded construction using steel no less than ⅛″ (0.3 cm) thick and shall be shall be powder coated for appearance and resistance to corrosion.
    3. A safety cable shall be supplied for the Yoke Mount and Wall/Column Mount. Field construction of safety cables is not permitted.
    4. Hardware used to mount the fan must be of sufficient strength and quantity to support the weight of the fan and its method of attachment. Consult the installation guide for details.

## PART 3 EXECUTION

### 3.1 PREPARATION

A. Fan location must be free from obstacles such as lights, cables, or other building components.
B. Check fan location for proper electrical requirements. Consult installation guide for appropriate circuit requirements.
C. Each fan requires dedicated branch circuit protection.

D. Structural requirements: Consult a structural engineer to determine the hardware required to safely support the fan from a wall, column, or concrete ceiling. Refer to the installation guide for details.

3.2 INSTALLATION

A. Install the fan according to the manufacturer's Installation Guide. Consult a structural engineer for installation methods outside the manufacturer's recommendation and a certification, in the form of a stamped print or letter, submitted prior to installation.

END OF SECTION 15839

# SECTION 15855 - DIFFUSERS, REGISTERS, AND GRILLES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes ceiling- and wall-mounted diffusers, registers, and grilles.

B. Related Sections include the following:
   1. Division 10 Section "Louvers and Vents" for fixed and adjustable louvers and wall vents, whether or not they are connected to ducts.
   2. Division 15 Section "Duct Accessories" for fire and smoke dampers and volume-control dampers not integral to diffusers, registers, and grilles.

### 1.3 SUBMITTALS

A. Product Data: For each product indicated, include the following:
   1. Data Sheet: Indicate materials of construction, finish, and mounting details; and performance data including throw and drop, static-pressure drop, and noise ratings.
   2. Diffuser, Register, and Grille Schedule: Indicate Drawing designation, room location, quantity, model number, size, and accessories furnished.

B. Coordination Drawings: Reflected ceiling plans, drawn to scale (1/4”=1’0”), on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
   1. Ceiling suspension assembly members.
   2. Method of attaching hangers to building structure.
   3. Size and location of initial access modules for acoustical tile.
   4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
   5. Duct access panels.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

## 2.2 GRILLES, REGISTERS, AND DIFFUSERS

A. Refer to Air Device Schedule on drawings.
   1. Manufacturers:
      a. Price Industries.
      b. Titus.

## 2.3 SOURCE QUALITY CONTROL

A. Verification of Performance: Rate diffusers, registers, and grilles according to ASHRAE 70, "Method of Testing for Rating the Performance of Air Outlets and Inlets."

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Examine areas where diffusers, registers, and grilles are to be installed for compliance with requirements for installation tolerances and other conditions affecting performance of equipment.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 INSTALLATION

A. Install diffusers, registers, and grilles level and plumb.

B. Ceiling-Mounted Outlets and Inlets: Drawings indicate general arrangement of ducts, fittings, and accessories. Air outlet and inlet locations have been indicated to achieve design requirements for air volume, noise criteria, airflow pattern, throw, and pressure drop. Make final locations where indicated, as much as practicable. For units installed in lay-in ceiling panels, locate units in the center of panel. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.

C. Install diffusers, registers, and grilles with airtight connections to ducts and to allow service and maintenance of dampers, air extractors, and fire dampers.

## 3.3 ADJUSTING

A. After installation, adjust diffusers, registers, and grilles to air patterns indicated, or as directed, before starting air balancing.

END OF SECTION 15855

SECTION 15990 - SYSTEM PREPARATION FOR TESTING, ADJUSTING AND BALANCING

PART 1 - GENERAL

A. Related Documents

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Perform all work required to prepare the building HVAC systems for testing, adjusting and balancing indicated by the Contract Documents as follows:

1. Responsibilities of project contractor.

2. Preparation for balancing of air systems.

B. The scope of the TAB work as defined in Section 15991 is indicated in order that the Contractor will be advised of the coordination, adjustment, and system modification which will be required under the project work in order to complete the requirements for final TAB. The TAB firm will not have a contractual relationship with the Mechanical Contractor referred to herein, but will be responsible to the General Contractor for the satisfactory execution of the TAB work. The General Contractor in his original bid shall include the costs required to cover all work which may be required in the TAB phases as defined herein and as may be necessary for the completion of the TAB work as defined by the TAB firm.

1.3 RELATED SECTIONS

Section 15000 - Basic Mechanical Requirements.
Section 15050 – Basic Mechanical Materials and Methods
Section 15060 – Hangers and Supports
Section 15071 - Vibration Isolation.
Section 15075 – Mechanical Identification
Section 15080 – Mechanical Insulation
Section 15738 – Split System Air-Conditioning Units
Section 15738A – Duct-Less Split System Air-Conditioning Units
Section 15815 - Ductwork.
Section 15820 - Ductwork Accessories.
Section 15838 - Power Ventilators.
Section 15855 - Diffusers, Registers, and Grilles.
Section 15991 - System Testing, Adjusting & Balancing.

1.4 SCOPE OF WORK

A. Testing, adjusting, and balancing (TAB) of the air conditioning systems and related ancillary equipment will be performed by an impartial technically qualified TAB firm employed

directly by the General Contractor. However, the preparation for and corrections necessary for the Testing, Adjusting and Balancing of these systems, as described herein, are the responsibility of the Contractor.

B. As a part of this project Construction Contract, the Contractor shall make any changes or replacements to the sheaves, belts, dampers, valves, etc. required for correct balance as advised by the TAB firm, at no additional cost to the Owner.

C. The Contractor shall provide and coordinate the services of qualified, responsible Subcontractors, suppliers and personnel as required to correct, repair, and/or replace any and all deficient items or conditions found during the course of this project, including the testing, adjusting and balancing period.

D. In order that all systems may be properly tested, balanced, and adjusted as required herein by these Specifications, the Contractor shall operate said systems at his expense for the length of time necessary to properly verify their completion and readiness for TAB. This length of time shall be subject to the approval of the Architect/Engineer.

E. Project Contract completion schedules shall allow for sufficient time to permit the completion of TAB services prior to Owner occupancy. The contractor shall allow adequate time for the testing and balancing activities of the owner provided services, during the construction period, and prior to Substantial Completion as defined in the Uniform General Conditions of this Construction Document.

F. The Drawings and Specifications indicate valves, dampers and miscellaneous adjustment devices for the purpose of adjustment to obtain optimum operating conditions, and it will be the responsibility of the Contractor to install these devices in a manner that will leave them accessible and readily adjustable. Should any such device not be readily accessible, the Contractor shall provide access as requested by the TAB firm. Also, any malfunction encountered by TAB personnel and reported to the Contractor or the Architect/Engineer shall be corrected by the Contractor immediately so that the balancing work can proceed with the minimum of delays.

1.5 RESPONSIBILITIES OF THE PROJECT CONTRACTOR:

A. The Contractor shall:

1. Have the building and air conditioning systems in complete operational readiness for TAB work to begin.

2. The contractor shall allow sufficient time for the TAB firm to perform his contracted work within the construction schedule. The contractor shall complete his work by systems or floors whichever is the most efficient for scheduling. After awarding of the contract and the contractor has developed a construction schedule, a TAB coordination meeting shall be held with the TAB agency, the general contractor and his primary subcontractors (i.e. mechanical, electrical, building automation etc.) to develop a testing schedule for the project. The contractor shall submit copies of the

proposed schedule two (2) weeks prior to this meeting to the Architect and TAB Agency.

The following are minimum time requirements: TAB Agency will provide Engineer with tentative schedules for each area, floor and/or system to be included in this section. Note: The air systems are pressure independent and can be balanced by floors, risers, systems, etc., but once the total system is complete the total flows and system tracking will require finalization.

3. Promptly correct deficiencies of materials and workmanship identified as delaying completion of TAB work.

4. Be responsible for any added costs to the Owner resulting from his failure to have the building and air conditioning systems ready for TAB when scheduled, or from his failure to correct deficiencies promptly.

B. Complete operational readiness of the building requires that construction status of the building shall permit the closing of doors, windows, ceilings installed, etc., to obtain simulated or projected operating conditions.

C. Complete operational readiness of the air conditioning systems also requires that the following be accomplished:

1. Air Distribution Systems:

a. Verify installation for conformity to design. All supply, return and exhaust ducts terminated and pressure tested for leakage as required by the Specification.

b. All volume, smoke and fire/smoke dampers are properly located and functional. Dampers serving requirements of minimum and maximum outside, return and relief air shall provide tight closure and full opening, smooth and free operation.

c. All supply, return, exhaust and transfer grilles, registers, diffusers and terminal devices installed.

d. Air handling systems, units and associated apparatus, such as heating and cooling coils, filter sections, access doors, etc., shall be blanked and/or sealed to eliminate excessive bypass or leakage of air.

e. All fans (supply, return and exhaust) operating and verified for freedom from vibration, proper fan rotation and belt tension; heater elements in motor starters to be of proper size and rating; record motor amperage and voltage on each phase at start-up and running, and verify they do not exceed nameplate ratings.

f. All single duct variable and constant volume terminal units ("mixing boxes") shall be installed and functional (i.e. controls functioning).

g. Contractor shall furnish and install any sheave changes as determined to be required.

2. Tabulated Data: The motor amperages, voltages shall be recorded showing "actual" and "nameplate" voltage and amperage and submitted and actual RPM. This applies to each piece of electrically driven air conditioning equipment in the system including supply and exhaust fans, fans of fractional horsepower, etc.

D. Notification of System Readiness:

1. After completion of the Contractor responsibilities, the Contractor shall notify the Architect in writing, certifying that the work has been accomplished and that the building and the air conditioning systems are in operational readiness for testing, adjusting, and balancing. He shall include a copy of the tabulated data described above.

2. The Architect will, in turn, notify the TAB firm of the readiness for balancing and forward copies of the Contractor's certification and the tabulated voltages and currents.

3. Should the TAB firm be notified as described above, and the TAB work commenced and the systems are found NOT to be in readiness or a dispute occurs as to the readiness of the systems, the Contractor shall request an inspection be made by duly appointed representative of the Owner, Architect, TAB firm and the Contractor. This inspection will establish to the satisfaction of the represented parties whether or not the systems meet the basic requirements for TAB services. Should the inspection reveal the TAB services notification to have been premature, all cost of the inspection and wasted work accomplished by the TAB firm shall be reimbursed to the appropriated parties by the Project Contractor.

1.6 RESPONSIBILITIES OF THE TAB FIRM

A. Refer to Section 15991 entitled "System Testing, Adjusting and Balancing".

END OF SECTION 15990

# SECTION 15991 - TESTING, ADJUSTING, AND BALANCING

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes TAB to produce design objectives for the following:
   1. Air Systems:
      a. Constant-volume air systems.
   2. HVAC equipment quantitative-performance settings.
   3. Kitchen hood airflow balancing.
   4. Verifying that automatic control devices are functioning properly.
   5. Reporting results of activities and procedures specified in this Section.

### 1.3 DEFINITIONS

A. Adjust: To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust a damper.

B. Balance: To proportion flows within the distribution system, including submains, branches, and terminals, according to indicated quantities.

C. Barrier or Boundary: Construction, either vertical or horizontal, such as walls, floors, and ceilings that are designed and constructed to restrict the movement of airflow, smoke, odors, and other pollutants.

D. Draft: A current of air, when referring to localized effect caused by one or more factors of high air velocity, low ambient temperature, or direction of airflow, whereby more heat is withdrawn from a person's skin than is normally dissipated.

E. NC: Noise criteria.

F. Procedure: An approach to and execution of a sequence of work operations to yield repeatable results.

G. RC: Room criteria.

H. Report Forms: Test data sheets for recording test data in logical order.

I. Static Head: The pressure due to the weight of the fluid above the point of measurement. In a closed system, static head is equal on both sides of the pump.

J. Suction Head: The height of fluid surface above the centerline of the pump on the suction side.

K. System Effect: A phenomenon that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.

L. System Effect Factors: Allowances used to calculate a reduction of the performance ratings of a fan when installed under conditions different from those presented when the fan was performance tested.

M. TAB: Testing, adjusting, and balancing.

N. Terminal: A point where the controlled medium, such as fluid or energy, enters or leaves the distribution system.

O. Test: A procedure to determine quantitative performance of systems or equipment.

P. Testing, Adjusting, and Balancing (TAB) Firm: The entity responsible for performing and reporting TAB procedures.

## 1.4 SUBMITTALS

A. Qualification Data: Within 30 days from Contractor's Notice to Proceed, submit 4 copies of evidence that TAB firm and this Project's TAB team members meet the qualifications specified in "Quality Assurance" Article.

B. Contract Documents Examination Report: Within 45 days from Contractor's Notice to Proceed, submit 4 copies of the Contract Documents review report as specified in Part 3.

C. Strategies and Procedures Plan: Within 90 days from Contractor's Notice to Proceed, submit 4 copies of TAB strategies and step-by-step procedures as specified in Part 3 "Preparation" Article. Include a complete set of report forms intended for use on this Project.

D. Certified TAB Reports: Submit two copies of reports prepared, as specified in this Section, on approved forms certified by TAB firm.

E. Sample Report Forms: Submit two sets of sample TAB report forms.

F. Warranties specified in this Section.

## 1.5 QUALITY ASSURANCE

A. TAB Firm Qualifications: Engage a TAB firm certified by either AABC or NEBB.

B. TAB Conference: Meet with Owner's and Architect's representatives on approval of TAB strategies and procedures plan to develop a mutual understanding of the details. Ensure the participation of TAB team members, equipment manufacturers' authorized service representatives, HVAC controls installers, and other support personnel. Provide seven days' advance notice of scheduled meeting time and location.
   1. Agenda Items: Include at least the following:
      a. Submittal distribution requirements.
      b. The Contract Documents examination report.
      c. TAB plan.
      d. Work schedule and Project-site access requirements.
      e. Coordination and cooperation of trades and subcontractors.
      f. Coordination of documentation and communication flow.

C. Certification of TAB Reports: Certify TAB field data reports. This certification includes the following:
   1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
   2. Certify that TAB team complied with approved TAB plan and the procedures specified and referenced in this Specification.

D. TAB Report Forms: Use standard forms from TAB firm's forms approved by Engineer.

E. Instrumentation Type, Quantity, and Accuracy: As described in AABC's "National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems."

F. Instrumentation Calibration: Calibrate instruments at least every six months or more frequently if required by instrument manufacturer.
   1. Keep an updated record of instrument calibration that indicates date of calibration and the name of party performing instrument calibration.

## 1.6 PROJECT CONDITIONS

A. Partial Owner Occupancy: Owner may occupy completed areas of building before Substantial Completion. Cooperate with Owner during TAB operations to minimize conflicts with Owner's operations.

## 1.7 COORDINATION

A. Coordinate the efforts of factory-authorized service representatives for systems and equipment, HVAC controls installers, and other mechanics to operate HVAC systems and equipment to support and assist TAB activities.

B. Notice: Provide seven days' advance notice for each test. Include scheduled test dates and times.

C. Perform TAB after leakage and pressure tests on air and water distribution systems have been satisfactorily completed.

1.8 WARRANTY

A. Guarantee: Provide a guarantee on AABC's "National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems" forms stating that AABC will assist in completing requirements of the Contract Documents if TAB firm fails to comply with the Contract Documents or provide a guarantee on NEBB forms stating that NEBB will assist in completing requirements of the Contract Documents if TAB firm fails to comply with the Contract Documents. Guarantee shall include the following provisions:
   1. The certified TAB firm has tested and balanced systems according to the Contract Documents.
   2. Systems are balanced to optimum performance capabilities within design and installation limits.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems' designs that may preclude proper TAB of systems and equipment.
   1. Contract Documents are defined in the General and Supplementary Conditions of Contract.
   2. Verify that balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are required by the Contract Documents. Verify that quantities and locations of these balancing devices are accessible and appropriate for effective balancing and for efficient system and equipment operation.

B. Examine approved submittal data of HVAC systems and equipment.

C. Examine Project Record Documents described in Division 1 Section "Project Record Documents."

D. Examine design data, including HVAC system descriptions, statements of design assumptions for environmental conditions and systems' output, and statements of philosophies and assumptions about HVAC system and equipment controls.

E. Examine equipment performance data including fan curves. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system. Calculate system effect factors to reduce performance ratings of HVAC equipment when installed under conditions different from those presented when the equipment was performance tested at the factory. To calculate system effects for air systems, use tables and charts found in AMCA 201,

"Fans and Systems," Sections 7 through 10; or in SMACNA's "HVAC Systems--Duct Design," Sections 5 and 6. Compare this data with the design data and installed conditions.

F. Examine system and equipment installations to verify that they are complete and that testing, cleaning, adjusting, and commissioning specified in individual Sections have been performed.

G. Examine system and equipment test reports.

H. Examine HVAC system and equipment installations to verify that indicated balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are properly installed, and that their locations are accessible and appropriate for effective balancing and for efficient system and equipment operation.

I. Examine systems for functional deficiencies that cannot be corrected by adjusting and balancing.

J. Examine HVAC equipment to ensure that clean filters have been installed, bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.

K. Examine plenum ceilings used for supply air to verify that they are airtight. Verify that pipe penetrations and other holes are sealed.

L. Examine heat-transfer coils for correct piping connections and for clean and straight fins.

M. Examine equipment for installation and for properly operating safety interlocks and controls.

N. Examine automatic temperature system components to verify the following:
   1. Dampers, valves, and other controlled devices are operated by the intended controller.
   2. Dampers and valves are in the position indicated by the controller.
   3. Integrity of valves and dampers for free and full operation and for tightness of fully closed and fully open positions.
   4. Thermostats and humidistats are located to avoid adverse effects of sunlight, drafts, and cold walls.
   5. Sensors are located to sense only the intended conditions.
   6. Sequence of operation for control modes is according to the Contract Documents.
   7. Controller set points are set at indicated values.
   8. Interlocked systems are operating.

O. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

## 3.2 PREPARATION

A. Prepare a TAB plan that includes strategies and step-by-step procedures.

B. Complete system readiness checks and prepare system readiness reports. Verify the following:
   1. Permanent electrical power wiring is complete.
   2. Automatic temperature-control systems are operational.
   3. Equipment and duct access doors are securely closed.
   4. Balance, smoke, and fire dampers are open.
   5. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
   6. Windows and doors can be closed so indicated conditions for system operations can be met.

## 3.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

A. Perform testing and balancing procedures on each system according to the procedures contained in AABC's "National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems" or NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" and this Section.

B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary to allow adequate performance of procedures. After testing and balancing, close probe holes and patch insulation with new materials identical to those removed. Restore vapor barrier and finish according to insulation Specifications for this Project.

C. Mark equipment and balancing device settings with paint or other suitable, permanent identification material, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, to show final settings.

D. Take and report testing and balancing measurements in inch-pound (IP) units.

## 3.4 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.

B. Prepare schematic diagrams of systems' "as-built" duct layouts.

C. Determine the best locations in main and branch ducts for accurate duct airflow measurements.

D. Check airflow patterns from the outside-air louvers and dampers and the return- and exhaust-air dampers, through the supply-fan discharge and mixing dampers.

E. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.

F. Verify that motor starters are equipped with properly sized thermal protection.

G. Check dampers for proper position to achieve desired airflow path.

H. Check for airflow blockages.

I. Check condensate drains for proper connections and functioning.

J. Check for proper sealing of air-handling unit components.

## 3.5 PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS

A. Adjust fans to deliver total indicated airflows within the maximum allowable fan speed listed by fan manufacturer.
   1. Measure fan static pressures to determine actual static pressure as follows:
      a. Measure outlet static pressure as far downstream from the fan as practicable and upstream from restrictions in ducts such as elbows and transitions.
      b. Measure static pressure directly at the fan outlet or through the flexible connection.
      c. Measure inlet static pressure of single-inlet fans in the inlet duct as near the fan as possible, upstream from flexible connection and downstream from duct restrictions.
      d. Measure inlet static pressure of double-inlet fans through the wall of the plenum that houses the fan.
   2. Measure static pressure across each component that makes up an air-handling unit.
      a. Simulate dirty filter operation and record the point at which maintenance personnel must change filters.
   3. Measure static pressures entering and leaving other devices such as sound traps, heat recovery equipment, and air washers, under final balanced conditions.
   4. Compare design data with installed conditions to determine variations in design static pressures versus actual static pressures. Compare actual system effect factors with calculated system effect factors to identify where variations occur. Recommend corrective action to align design and actual conditions.
   5. Obtain approval from Architect for adjustment of fan speed higher or lower than indicated speed. Make required adjustments to pulley sizes, motor sizes, and electrical connections to accommodate fan-speed changes.
   6. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure that no overload will occur. Measure amperage in full cooling, full heating, economizer, and any other operating modes to determine the maximum required brake horsepower.

B. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows within specified tolerances.
   1. Measure static pressure at a point downstream from the balancing damper and adjust volume dampers until the proper static pressure is achieved.
      a. Where sufficient space in submain and branch ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow for that zone.

2. Remeasure each submain and branch duct after all have been adjusted. Continue to adjust submain and branch ducts to indicated airflows within specified tolerances.

C. Measure terminal outlets and inlets without making adjustments.
1. Measure terminal outlets using a direct-reading hood or outlet manufacturer's written instructions and calculating factors.

D. Adjust terminal outlets and inlets for each space to indicated airflows within specified tolerances of indicated values. Make adjustments using volume dampers rather than extractors and the dampers at air terminals.
1. Adjust each outlet in same room or space to within specified tolerances of indicated quantities without generating noise levels above the limitations prescribed by the Contract Documents.
2. Adjust patterns of adjustable outlets for proper distribution without drafts.

## 3.6 PROCEDURES FOR MOTORS

A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:
1. Manufacturer, model, and serial numbers.
2. Motor horsepower rating.
3. Motor rpm.
4. Efficiency rating.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter thermal-protection-element rating.

B. Motors Driven by Variable-Frequency Controllers: Test for proper operation at speeds varying from minimum to maximum. Test the manual bypass for the controller to prove proper operation. Record observations, including controller manufacturer, model and serial numbers, and nameplate data.

## 3.7 PROCEDURES FOR HEAT-TRANSFER COILS

A. Electric-Heating Coils: Measure the following data for each coil:
1. Nameplate data.
2. Airflow.
3. Entering- and leaving-air temperature at full load.
4. Voltage and amperage input of each phase at full load and at each incremental stage.
5. Calculated kilowatt at full load.
6. Fuse or circuit-breaker rating for overload protection.

## 3.8 PROCEDURES FOR COMMERCIAL KITCHEN HOODS

A. Measure, adjust, and record the airflow of each kitchen hood. For kitchen hoods designed with integral makeup air, measure and adjust the exhaust and makeup airflow. Measure airflow by duct Pitot-tube traverse. If a duct Pitot-tube traverse is not possible, provide an

explanation in the report of the reason(s) why and also the reason why the method used was chosen.

1. Install welded test ports in the sides of the exhaust duct for the duct Pitot-tube traverse. Install each test port with a threaded cap that is liquid tight.

B. After balancing is complete, do the following:

1. Measure and record the static pressure at the hood exhaust-duct connection.
2. Measure and record the hood face velocity. Make measurements at multiple points across the face of the hood. Perform measurements at a maximum of 12 inches (300 mm) between points and between any point and the perimeter. Calculate the average of the measurements recorded. Verify that the hood average face velocity complies with the Contract Documents and governing codes.
3. Check the hood for capture and containment of smoke using a smoke emitting device. Observe the smoke pattern. Make adjustments to room airflow patterns to achieve optimum results.

C. Visually inspect the hood exhaust duct throughout its entire length in compliance with authorities having jurisdiction. Begin at the hood connection and end at the point it discharges outdoors. Report findings.

1. Check duct slopes as required.
2. Verify that duct access is installed as required.
3. Verify that point of termination is as required.
4. Verify that duct air velocity is within the range required.
5. Verify that duct is within a fire-rated enclosure.

D. Report deficiencies.

## 3.9 PROCEDURES FOR TEMPERATURE MEASUREMENTS

A. During TAB, report the need for adjustment in temperature regulation within the automatic temperature-control system.

B. Measure indoor wet- and dry-bulb temperatures every other hour for a period of two successive eight-hour days, in each separately controlled zone, to prove correctness of final temperature settings. Measure when the building or zone is occupied.

C. Measure outside-air, wet- and dry-bulb temperatures.

## 3.10 TEMPERATURE-CONTROL VERIFICATION

A. Verify that controllers are calibrated and commissioned.

B. Check transmitter and controller locations and note conditions that would adversely affect control functions.

C. Record controller settings and note variances between set points and actual measurements.

D. Check the operation of limiting controllers (i.e., high- and low-temperature controllers).

E. Check free travel and proper operation of control devices such as damper and valve operators.

F. Check the sequence of operation of control devices. Note air pressures and device positions and correlate with airflow and water flow measurements. Note the speed of response to input changes.

G. Check the interaction of electrically operated switch transducers.

H. Check the interaction of interlock and lockout systems.

I. Check main control supply-air pressure and observe compressor and dryer operations.

J. Record voltages of power supply and controller output. Determine whether the system operates on a grounded or nongrounded power supply.

K. Note operation of electric actuators using spring return for proper fail-safe operations.

## 3.11 TOLERANCES

A. Set HVAC system airflow rates within the following tolerances:
   1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus 5 to plus 10 percent.
   2. Air Outlets and Inlets: 0 to minus 10 percent.

## 3.12 REPORTING

A. Initial Construction-Phase Report: Based on examination of the Contract Documents as specified in "Examination" Article, prepare a report on the adequacy of design for systems' balancing devices. Recommend changes and additions to systems' balancing devices to facilitate proper performance measuring and balancing. Recommend changes and additions to HVAC systems and general construction to allow access for performance measuring and balancing devices.

B. Status Reports: As Work progresses, prepare reports to describe completed procedures, procedures in progress, and scheduled procedures. Include a list of deficiencies and problems found in systems being tested and balanced. Prepare a separate report for each system and each building floor for systems serving multiple floors.

## 3.13 FINAL REPORT

A. General: Typewritten, or computer printout in letter-quality font, on standard bond paper, in three-ring binder, tabulated and divided into sections by tested and balanced systems.

B. Include a certification sheet in front of binder signed and sealed by the certified testing and balancing engineer.
   1. Include a list of instruments used for procedures, along with proof of calibration.

C. Final Report Contents: In addition to certified field report data, include the following:
   1. Fan curves.
   2. Manufacturers' test data.
   3. Field test reports prepared by system and equipment installers.
   4. Other information relative to equipment performance, but do not include Shop Drawings and Product Data.

D. General Report Data: In addition to form titles and entries, include the following data in the final report, as applicable:
   1. Title page.
   2. Name and address of TAB firm.
   3. Project name.
   4. Project location.
   5. Architect's name and address.
   6. Engineer's name and address.
   7. Contractor's name and address.
   8. Report date.
   9. Signature of TAB firm who certifies the report.
   10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
   11. Summary of contents including the following:
      a. Indicated versus final performance.
      b. Notable characteristics of systems.
      c. Description of system operation sequence if it varies from the Contract Documents.
   12. Nomenclature sheets for each item of equipment.
   13. Data for terminal units, including manufacturer, type size, and fittings.
   14. Notes to explain why certain final data in the body of reports varies from indicated values.
   15. Test conditions for fan performance forms including the following:
      a. Settings for outside-, return-, and exhaust-air dampers.
      b. Conditions of filters.
      c. Cooling coil, wet- and dry-bulb conditions.
      d. Fan drive settings including settings and percentage of maximum pitch diameter.
      e. Settings for supply-air, static-pressure controller.
      f. Other system operating conditions that affect performance.

E. System Diagrams: Include schematic layouts of air distribution systems. Present each system with single-line diagram and include the following:
   1. Quantities of outside, supply, return, and exhaust airflows.
   2. Duct, outlet, and inlet sizes.
   3. Pipe and valve sizes and locations.
   4. Balancing stations.
   5. Position of balancing devices.

F. Instrument Calibration Reports:
   1. Report Data:
      a. Instrument type and make.
      b. Serial number.
      c. Application.
      d. Dates of use.
      e. Dates of calibration.

## 3.14 INSPECTIONS

A. Initial Inspection:
   1. After testing and balancing are complete, operate each system and randomly check measurements to verify that the system is operating according to the final test and balance readings documented in the Final Report.
   2. Randomly check the following for each system:
      a. Measure airflow of at least 10 percent of air outlets.
      b. Measure room temperature at each thermostat/temperature sensor. Compare the reading to the set point.
      c. Verify that balancing devices are marked with final balance position.
      d. Note deviations to the Contract Documents in the Final Report.

B. Final Inspection:
   1. After initial inspection is complete and evidence by random checks verifies that testing and balancing are complete and accurately documented in the final report, request that a final inspection be made by Architect.
   2. TAB firm test and balance engineer shall conduct the inspection in the presence of Architect.
   3. Architect shall randomly select measurements documented in the final report to be rechecked. The rechecking shall be limited to either 10 percent of the total measurements recorded, or the extent of measurements that can be accomplished in 4-hours.
   4. If the rechecks yield measurements that differ from the measurements documented in the final report by more than the tolerances allowed, the measurements shall be noted as "FAILED."
   5. If the number of "FAILED" measurements is greater than 10 percent of the total measurements checked during the final inspection, the testing and balancing shall be considered incomplete and shall be rejected.
   6. TAB firm shall recheck all measurements and make adjustments. Revise the final report and balancing device settings to include all changes and resubmit the final report.
   7. Request a second final inspection. If the second final inspection also fails, Owner shall contract the services of another TAB firm to complete the testing and balancing in accordance with the Contract Documents and deduct the cost of the services from the final payment.

3.15 ADDITIONAL TESTS

A. Within 90 days of completing TAB, perform additional testing and balancing to verify that balanced conditions are being maintained throughout and to correct unusual conditions.

B. Seasonal Periods: If initial TAB procedures were not performed during near-peak summer and winter conditions, perform additional testing, inspecting, and adjusting during near-peak summer and winter conditions.

END OF SECTION 15991

# SECTION 16010-ELECTRICAL GENERAL REQUIREMENTS

## PART 1 - GENERAL

### 1.01 RELATED REQUIREMENTS

A. The General Provisions, Supplemental General Provisions, Special Provisions, Division 1 Specification Sections and all relevant documents shall form a part of this Division of the Specifications, and shall be incorporated in this Section and each Division 16 Section hereinafter as if repeated verbatim herein. All conditions imposed by these documents shall be applicable to all portions of the work under this Division. Certain specific paragraphs of said references may be referred to hereinafter in this Division. These references are intended to point out specific items to the Contractor, but in no way relieve him of the responsibility of reading and complying with all relevant parts of the entire Specification.

B. The Contractor shall examine and coordinate with all Contract Drawings and Specifications, and all Addenda issued. Failure to comply shall not relieve him of responsibility. The omission of details of other portions of the work from this Division shall not be used as a basis for a request for additional compensation.

C. The specific features and details for other portions of the work related to the construction in progress or to the existing building(s) shall be determined by examination at the site.

### 1.02 SCOPE OF WORK

A. The requirements contained in this Section apply to all work performed under Division 16 of these Specifications.

B. The work covered by this Division of the Specifications comprises the furnishing of labor, material, equipment, transportation, tools and services, and performing operations required for, and reasonably incidental to, the installation of the work in accordance with the applicable Contract Documents, and subject to the terms and conditions of the Contract.

C. Refer to other Divisions of the Specifications for related work.

### 1.03 DEFINITION OF "CONTRACTOR"

A. Where the word "Contractor" is used under any Section of this Division of the Specifications, it shall mean the Contractor engaged to execute the work included under that Section.

### 1.04 RESPONSIBILITY OF THE CONTRACTOR

A. The Contractor shall be responsible for all work of every description in connection with this Division of the Specifications. The Contractor shall specifically and distinctly assume, and does so assume, all risk for damage or injury from whatever cause to property or person used or employed on or in connection with this work and of all damages or injury to any person or property wherever located, resulting from an action or operation under the Contract in connection with the work, and undertake the responsibility to defend the Owner against all claims on account of any such damage or injury.

B. The Contractor will be held responsible for the satisfactory execution and completion of the work in accordance with the true intent of the Contract Documents. The Contractor shall provide without extra charge all incidental items required as part of the work, even though it may not be specifically indicated. If the Contractor has reason for objecting to the use of any material, equipment, device or method of construction as indicated, he shall make report of such objections to the Owner's Representative, obtain proper approval and adjustment to the Contract, and shall proceed with the work.

1.05 TERMINOLOGY

A. Whenever the words "furnish", "provide", "furnish and install", "provide and install", and similar phrases occur, it is the intent that the materials, equipment and devices described be furnished, installed and connected under this Division, complete for operation, unless specifically noted to the contrary.

B. It is also the intent, unless specifically noted to the contrary, that all materials, equipment and devices described and specified under this Division of the Specifications be similarly furnished, installed and connected under this Division, whether or not a phrase as described in the preceding paragraph has been actually included.

1.06 ORDINANCES, PERMITS AND CODES

A. It shall be the Contractor's duty to perform the work and provide the materials covered by these specifications in conformance with all ordinances and regulations of all authorities having jurisdiction.

B. All work herein shall conform to all applicable laws, ordinances and regulations of the local utility companies.

C. The Contractor shall obtain and pay for all permit and connection fees as required for the complete installation of the specified systems, equipment, devices and materials.

D. The Contractor shall obtain permits, plan checks, inspections and approvals applicable to the work as required by the regulatory authorities. Fees and costs of any nature whatsoever incidental to these permits, inspections and approvals shall be assumed and paid by the Contractor. The pro-rata costs, if any, for utilities serving this property will be paid for by the Owner and shall not be included as part of this Contract.

E. The work shall be in accordance with, but shall not be limited to, the requirements of:

1. National Fire Protection Association

2. National Electrical Code

3. National Safety Code

4. State of Texas Safety Code

5. Local City Codes

6. State of Texas Building Codes

F. Codes and standards referred to are minimum standards. Where the requirements of the Drawings or Specifications exceed those of the codes and regulations, the Drawings and Specifications govern.

1.07 MATERIALS, EQUIPMENT AND DEVICE DESCRIPTION

A. Materials, equipment and devices shall be of the best quality customarily applied in quality commercial practice, and shall be the products of reputable manufacturers. Each major component shall bear a nameplate giving the name and address of the manufacturer, and the catalog number or designation of the component.

B. Materials, equipment and devices furnished under this Division of the Specifications shall be essentially the standard product of the specified manufacturer, or where allowed, an alternate manufacturer. Where two or more units of the same kind or class of a specific item are required, these shall be the products of a single manufacturer; however, the component parts of the item need not be the products of one manufacturer.

C. In describing the various materials, equipment and devices, in general each item will be described singularly, even though there may be a multiplicity of identical items. Also, where the description is only general in nature, exact sizes, duties, space arrangements, horsepower requirements and other data shall be determined by reference to the Contract Documents.

D. Space allocations for materials, equipment and devices have been made on the basis of present and known future requirements and the dimensions of items of equipment or devices of a particular manufacturer whether indicated or not. The Contractor shall verify that all materials, equipment and devices proposed for use on this project are within the constraints of the allocated space.

1.08 QUALITY ASSURANCE

A. Materials, equipment and devices shall be new and of the quality specified, and shall be free from defects at the time of installation. Materials, equipment and devices damaged in shipment or otherwise damaged or found defective prior to acceptance by the Owner shall not be repaired at the job site, but shall be replaced with new materials, equipment or devices identical with those damaged, unless specifically approved otherwise by the Owner's Representative.

B. Wherever a UL standard has been established for a particular type of material, equipment or device, each item of such material, equipment or device provided on this project shall meet the requirements of the UL standard in every way, and shall be UL listed and labeled.

1.09 REFERENCE STANDARDS

A. Materials, equipment, devices and workmanship shall comply with applicable local, county, state and national codes, laws and ordinances, utility company regulations and industry standards.

B. In case of differences between building codes, state laws, local ordinances, industry standards, utility company regulations and the Contract Documents, the most stringent shall govern. The Contractor shall promptly notify the Owner's Representative in writing of any such difference. Should the Contractor perform any work that does not comply with local codes, laws and

ordinances, industry standards or other governing regulations, the work shall be corrected of noncompliance deficiencies with the Contractor bearing all costs.

C. In addition to the aforementioned ordinances, industry standards published by the following organizations shall apply:

*AABM*-American Association of Battery Manufacturers

*AIA*-American Institute of Architects

*ANSI*-American National Standards Institute

*ASTM*-American Society for Testing and Materials

*CBM*-Certified Ballast Manufacturers Association

*ETL*-Electrical Testing Laboratories

*FM*-Factory Mutual

*ICEA*-Insulated Cable Engineers Associated

*IEEE*-Institute of Electrical and Electronic Engineers

*IES*-Illuminating Engineering Society

*IRI*-Industrial Risk Insurance

*NBS*-National Bureau of Standards

*NEC*-National Electrical Code

*NECA*-National Electrical Contractors Association

*NEMA*-National Electrical Manufacturers Association

*NESC*-National Electrical Safety Code

*NETA*-National Electrical Testing Association

*NFPA*-National Fire Protection Association

*UL*-Underwriters Laboratories

D. Where the Contract Documents exceed the above requirements, the Contract Documents shall govern. In no case shall work be installed contrary to or below the minimum legal standards.

1.10 DRAWINGS AND SPECIFICATIONS

A. The interrelation of the Drawings (including the schedules) and the Specifications are as follows:

1. The Drawings establish quantities, locations, dimensions and details of materials,

equipment and devices. The schedules on the Drawings indicate the capacities, characteristics and components.

2. The Specifications provide written requirements for the quality, standard and nature of the materials, equipment, devices and construction systems.

B. The Drawings and Specifications shall be considered as being compatible; therefore, the work called for by one and not by the other shall be furnished and installed as though called for by both. Resolution of conflicts between Drawings and Specifications shall be as follows:

1. If the Drawings and Specifications disagree in themselves, or with each other, the Contractor's pricing shall be based on furnishing and installing the most expensive combination of quality and quantity of work indicated. In the event of this type of disagreement, the resolution shall be determined by the Architect/Engineer.

2. The Contractor shall be responsible for bringing any conflicts in the Drawings and the Specifications to the attention of the Architect/Engineer prior to any work being performed.

3. Materials, equipment and devices called for on the Drawings and not indicated herein, shall be completely provided and installed as though it were fully described herein.

5. Materials, equipment and devices called for herein shall be completely provided and installed, whether or not it is fully detailed, scheduled or indicated on the Drawings.

C. The Contractor shall examine the Drawings and Specifications of the other portions of the work for fixtures and finishes in connection with this work. The Contractor shall carefully examine the Drawings to determine the general construction conditions, and shall familiarize himself with all limitations caused by such conditions.

D. When discrepancies exist between scale and dimension, or between the Drawings of the various portions of the work, they shall be called to the attention of the Architect/Engineer for further instruction, whose instructions shall be final and binding and work promptly resumed without any additional cost to the Owner.

E. Review the construction details of the building(s) as illustrated on the Drawings of the various portions of the work and be guided thereby. Route conduits and set all boxes as required by the pace of the general construction.

F. The Drawings diagrammatically show the sizes and locations of the various equipment and devices, and the sizes of the major interconnecting wires, without showing exact details as to elevations, offsets, control wiring and other installation requirements. Carefully layout the work at the site to conform to the architectural and structural conditions, to avoid obstructions and to permit proper grading of pipe associated with other portions of the work. Determine the exact location of equipment and devices and connections thereto by reference to the submittals and rough-in drawings, and by measurements at the site. Make relocations necessitated by the conditions at the site, or directed by the Architect/Engineer, without additional cost to the Owner.

G. The Drawings and Specifications are intended to describe and illustrate systems which will not interfere with the structure of the building(s), fit into the available spaces, and insure complete and

satisfactory operating installations. Prepare installation drawings for all critical areas illustrating the installation of the work in this Division as related to the work of all other Divisions and correct all interferences with the other portions of the work or with the building structures before the work proceeds.

H. The Drawings do not indicate the existing electrical installations other than to identify modifications or extensions thereto. Visit the site and ascertain the conditions to be met and the work to be accomplished in removing and modifying the existing work, and in installing the new work. Failure to comply with this shall not constitute grounds for any additional payment in connection with removing or modifying any part of the existing installation or installing any new or temporary work under this Division.

1.11 SHOP DRAWINGS AND SUBMITTAL DATA

A. Process shop drawings and submittal data to insure that the proposed materials, equipment and devices conform to the requirements of the Contract Documents, and that there are no omissions or duplications. Provide layouts, fabrication information and data for systems, materials, equipment and devices proposed for the project.

B. Shop drawings shall be drawn on a scale not less than 1/4 inch equals 1 foot showing actual dimensions. Shop drawings shall include, but not be limited to:

1. Switchboard

2. Distribution Panelboards

3. Lighting/Appliance Panelboards

C. Submittal data (manufacturer's catalog data) shall include, but not be limited to:

1. Equipment: switchboard, panelboards, transformers, disconnect switches, circuit breakers, fuses, etc.

2. Materials: conduit, conductors, connectors, supports, etc.

3. Lighting fixtures and lamps.

4. Wiring devices.

5. All Specification sections requiring electrical submittals.

D. The submittal data shall not consist of manufacturer's catalogs or cut sheets that contain no indication of the exact item offered. The submission on individual items shall designate the exact item offered.

E. Do not submit detailed quantitative listings of materials, equipment and devices. It is the Contractor's responsibility to provide proper sizes and quantities to conform with Contract Documents.

F. Assemble submittals on related items procured from a single manufacturer in a 3 ring binder with

each section identified by Specification Section by tabbed divider rather than submitting a multiplicity of loose or stapled sheets. On the end of the binder and on the front cover the Project Title shall be typed neatly and readily visible when placed in a storage shelf. Submittals not identified by specification section, and incomplete, will be returned to contractor without review for resubmittal.

G. The Contractor shall submit shop drawings whenever equipment proposed varies in physical size and arrangement from that indicated thus causing rearrangement of equipment space, where tight spaces require extreme coordination between this work and other work, where called for elsewhere in these Specifications and where specifically requested by the Architect/ Engineer. Shop drawings shall be prepared at a scale of not less than 1/4 inch equals 1 foot.

1.12 SUBSTITUTIONS

A. Where a single manufacturer is mentioned by trade name or manufacturer's name, unless specifically noted otherwise, it is the only manufacturer that will be accepted.

B. Where multiple manufacturers are listed, none other than those manufacturers will be accepted.

C. It shall be understood that space allocations have been made on the basis of present and known future requirements and the dimensions of items of equipment or devices of a particular manufacturer whether indicated or not. If any item of equipment or device is offered in substitution which differs substantially in dimension or configuration from that indicated on the Drawings or specifications, provide as part of the submittal 1/4 inch equals 1 foot scaled drawings showing that the substitute can be installed in the space available without interfering with other portions of the work or with access for operations and maintenance in the completed project.

D. Where substitute equipment or devices requiring different arrangement or connections from that indicated is accepted by the Architect/Engineer, install the equipment or devices to operate properly and in harmony with the intent of the Contract Documents, making all incidental changes in piping, ductwork or wiring resulting from the equipment or device selection without any additional cost to the Owner. The Contractor shall pay all additional costs incurred by other portions of the work in connection with the substituted equipment or device.

E. The Architect/Engineer reserves the right to call for samples of any item of material, equipment or device offered in substitution, together with a sample of the specific item when, in their opinion, the quality of the item and/or the appearance is involved, and it is deemed that an evaluation of the item may be better made by visual inspection.

F. When any request for a substitution of material, equipment or device is submitted and rejected, the item named in the Contract Documents shall be furnished. Repetitive submittal of substitutions for the same item will not be considered.

1.13 INSTALLATION DRAWINGS

A. Prepare installation drawings for coordinating the work of this Division with the work of other Divisions, to illustrate its concealment in finished spaces, to avoid obstructions, and to demonstrate the adaptability of any item of material, equipment or device in the space upon which the Contract Documents are based.

B. Use these drawings in the field for the actual installation of this work. Provide three (3) copies, not for approval, to the Architect/Engineer for his information, review and record.

1.14 WORKMANSHIP AND INSTALLATION

A. In no case shall the Contractor provide a class of material, equipment, device or workmanship less than that required by the Contract Documents or applicable codes, regulations, ordinances or standards. All modifications which may be required by a local authority having legal jurisdiction over all or any part of the work shall be made by the Contractor without any additional charge. In all cases where such authority requires deviations from the requirements of the Drawings or Specifications, the Contractor shall report same to the Owner's Representative and shall secure his approval before the work is started.

B. The work shall be performed by properly licensed technicians skilled in their respective trades. All materials, equipment and devices shall be installed in accordance with the recommendations of the manufacturer and in the best standard practice to bring about results of a first class condition.

C. The NECA "Standards of Installation" as published by the National Electrical Contractors Association shall be considered a part of these Specifications, except as specifically modified by other provisions contained in these Specifications.

1.15 WARRANTY

A. All materials, equipment, devices and workmanship shall be warranted for a period of one year from the date of acceptance by the Architect/Engineer for beneficial use by the Owner, except that where specific equipment is noted to have extended warranties. The warranty shall be in accordance with AIA Document A201. The Contractor shall be responsible for the proper registration of these warranties so that the Owner can make all proper claims should future need develop.

B. The Contractor shall furnish to the Architect/Engineer for transmittal to the Owner, the name, address and telephone number of those persons responsible for service on systems and equipment covered by the warranty.

1.16 OPERATION PRIOR TO ACCEPTANCE

A. When any equipment is operable, and it is to the advantage of the Contractor to operate the equipment, the Contractor may do so provided that he properly supervises the operation, and retains full responsibility for the equipment operated. Regardless of whether or not the equipment has or has not been operated, the Contractor shall clean the equipment properly, make required adjustments and complete punch list items before final acceptance by the Owner.

1.17 INSTRUCTION OF OWNER'S PERSONNEL

A. Provide the services of competent engineers and/or technicians acceptable to the Architect/ Engineer to instruct other representatives of the Owner in the complete and detailed operation of each item of equipment or device of all the various electrical systems. These instructions shall be provided for whatever periods may be necessary to accomplish the desired results. Upon completion of these instructions, the Contractor shall obtain a letter of release, acknowledged by the Owner or his authorized representative, stating the dates on which the various kinds of

instruction were given, and the personnel to whom the instructions were given.

B. The Contractor shall be fully responsible for proper maintenance of equipment and systems until the instructions have been given to the Owner's personnel and the letter of release acknowledged.

C. In providing the instructions to the Owner's personnel, the written operating and maintenance manuals shall be followed in all instances, and the Owner's personnel shall be familiarized with such manuals. Operating and maintenance manuals used for instructions shall include wiring diagrams, manufacturer's operating and maintenance instructions, parts lists (with sources identified), and other data as appropriate for each system.

1.18 SCHEDULE AND SEQUENCE OF WORK

A. The Contractor shall meet and cooperate with the Owner and Architect/Engineer to schedule and sequence this work so as to insure meeting scheduled completion dates and avoid delaying other portions of the work. Work requiring special sequencing shall be at no additional cost to the Owner and shall have no impact on the schedule.

1.19 INSPECTIONS AND CERTIFICATIONS

A. Obtain timely inspections of the installation by the regulatory authorities. Remedy any deficiencies to the satisfaction of the inspecting official.

B. Upon final completion of the work, obtain certificates of acceptance from the regulatory authorities. Deliver the certificates to the Architect/Engineer for transmission to the Owner.

1.20 EQUIPMENT INSTALLATION

A. Install equipment and devices in a manner to permit access to all surfaces or components, requiring such access, without the need to disassemble other unrelated parts of the work.

B. Equipment specified to be factory assembled and tested prior to shipment shall not be disassembled at the job site and reassembled at its final location. Apparatus not so specified may be disassembled and reassembled in the proper location.

C. Furnish all scaffolding, rigging and hoisting required for the installation of all the work.

D. Large equipment assemblies and components which will be installed in the building, and which are too large to permit access through doorways, stairways or shafts, shall be brought to the site and placed in the appropriate spaces before the enclosing structure is complete.

1.21 EQUIPMENT FOUNDATIONS

A. Where indicated on the Drawings, provide foundations for electrical equipment. This shall consist of concrete housekeeping pads constructed in accordance with the details on the Drawings, these Specifications, manufacturer's recommendations and Division 3.

B. All pads shall be 4" high and extend a maximum 2" beyond the actual equipment size. Coordinate the proper size of the pad with the equipment furnished. Furnish all anchor bolts and other accessories required for casting the concrete pad. After the equipment is set on the pad, the

equipment shall be fully grouted to the pad and all void spaces shall be filled with a non-shrinking grout.

1.22 SLEEVES

A. Each conduit, regardless of material, which passes through a concrete slab, masonry wall, or roof or portion of the building structure shall be free from the structure and shall pass through a sleeve.

B. All sleeves shall be constructed from electrical-metallic tubing or equivalent weight galvanized steel tubing and shall be flush on both sides of the surface penetrated, unless noted otherwise. All sleeves penetrating the roof areas shall extend a minimum 10 inches above the roof with approved weatherproof counter-flashing attached to the conduit above the roof. All sleeves penetrating floors shall extend a minimum of 6 inches above the finished floors. The sleeves shall be sized to allow free passage of the conduit to be inserted.

C. Sleeves passing through walls or floors on or below grade or in moist areas shall be constructed of galvanized rigid steel and shall be designed with a suitable flange in the center to form a waterproof passage. After the conduit has been installed in the sleeves, the void space around the conduit shall be caulked with jute twine and filled with an asphalt-base compound to insure a waterproof penetration.

1.23 ESCUTCHEONS

A. In each finished space, provided a chromium plated, sectional escutcheon on each conduit, or hanger rod penetrating a wall, floor or ceiling.

B. Size escutcheons and collars to fit snugly around conduit and rods.

C. Where required, provide escutcheons with set screws so that they fit snugly against the finished surface.

1.24 ACCESS PANELS

A. Provide wall and ceiling access panels for unrestricted access to all concealed electrical equipment items and devices installed behind furrings, chases or non-removable suspended ceilings.

B. Access panels shall be UL listed and labeled as required to suit the fire rating of the surface in which installed, with mounting straps, concealed hinges, screwdriver locks, 180 degree open door design, 16 gauge steel construction and door and frame finished in prime coat finish. Panels shall be 12-inch by 12-inch minimum size, but shall be larger as the access requirement of the concealed electrical equipment item or device increases.

1.25 EXCAVATION, TRENCHING AND BACKFILLING

A. All excavating, trenching and backfilling shall generally be performed in accordance with the procedures and using the materials as described in Division 2. Provide all excavation required in connection with the installation of the work under this Division. After the work has been installed, tested and approved, backfill all excavations with suitable material.

B. Bottoms of trenches shall be cut to grade. Should rock be encountered, same shall be excavated to

a depth of six (6) inches below bottom of conduit and space shall be filled and tamped as specified hereinafter. Should it be required to lay conduit on fill, fill shall first be compacted.

C. All conduit shall be installed promptly after excavation has been done so as to keep excavations open as short a time as possible.

D. Trenches shall be excavated to the required depths. Depth of cover shall be as required by the NEC or as indicated on Drawings. Keep banks of trenches as nearly vertical as possible, and provide adequate shoring where required.

E. When excavation is below the shale or subgrade level, backfill with granular fill or approved backfill material from the site to a depth of 12 inches above top of conduit, but in no case less than 1'-0" below the subgrade surface. The remainder of backfill to the shale or subgrade surface shall be an impervious material and shall be compacted at not less than 95 percent of the maximum dry density as defined by ASTM D-698. At all times, the top of the subgrade shall be kept in such condition that it will drain readily and effectively. A mud slab shall be placed over excavation where required by the Drawings or Specifications. Backfill above the subsurface shall be granular fill or approved select backfill from site.

F. Beyond building walls or above the shale or subgrade level, backfill with sand or granular fill to a depth of 12 inches above top of conduit and remainder of trench filled with approved select backfill material from the site.

G. Bottoms of trenches shall be tamped hard and graded to secure the maximum fall. Where rock is excavated below the bottom of the conduit, and before laying the conduit, fill the space between the bottom of the conduit and the rock surface with sand, thoroughly tamped.

H. Trenches dug in fill shall have the conduit supported down to load-bearing soil. After conduits have been inspected and approved by the Owner's Representative, trenches shall be filled with approved backfill material which shall be firmly compacted, flooded if necessary and thoroughly tamped. Do not backfill with any fill containing rocks, frozen earth or debris.

I. Include the cutting of all sidewalks, streets and other pavements and repairing the openings in them to return the surface to approximately its original condition.

1.26 CUTTING AND PATCHING

A. Cut all openings required to install the work or to repair any defective work. This cutting shall be performed under the Architect's/Engineer's direction and due diligence exercised to avoid cutting openings larger than required or in the wrong locations.

B. No cutting or drilling of any sort will be permitted in the webs of prestressed, precast concrete structural elements. Use core drills or power driven saws to cut openings in the flanges of other such elements; the use of reciprocating drills will not be permitted. The cutting of structural members without first having received written permission from the Architect/ Engineer is prohibited.

C. Where openings are cut in fire-rated walls or floors, seal the annular space between the work installed and the fire-rated construction. Sealant, as applied, shall be fire rated to maintain the fire

rating of the construction penetrated. Sealant shall be re-enterable (before fire) to alter penetrations. Apply in strict accordance with manufacturer's instructions.

1.27 SEALING OF PENETRATIONS

A. All penetrations in horizontal or vertical fire-rated construction shall be sealed using approved fire-rated sealing materials equivalent to the following:

1. Foam: Dow Corning 3-6548 RTV silicone foam, liquid component Part 4 (black) and liquid component Part B (off-white).

2. Sealant: Dow Corning 96-081 RTV silicone adhesive sealant.

3. Damming Materials: Mineral fiberboard, mineral fiber matting, mineral fiber putty, plywood or particle board, as selected by applicator.

B. Preparation: Remove combustible materials and loose impediments from penetration opening and involved surfaces. Remove free liquid and oil from penetration surfaces.

C. Installation: In accordance with manufacturer's instructions, install damming materials and sealant to cover and seal penetration openings; inject foam mixtures into openings.

1.28 PROTECTION OF APPARATUS

A. At all times take every precaution to properly protect apparatus from damage due to dust, dirt, water, etc. or from damage due to physical forces. Include the erection of temporary shelters as required, to adequately protect any apparatus stored at the site, the cribbing of any apparatus directly above the construction, and the covering of apparatus in the incomplete building with tarpaulins or other protective covering. Failure on the part of the Contractor to comply with the above to the entire satisfaction of the Architect/Engineer will be sufficient cause for the rejection of the pieces of apparatus in question.

B. Responsibility for the protection of apparatus extend also to existing apparatus involved in this Division of the work, whether such apparatus is designated to be used temporarily and later removed, or is to be reused as a part of the permanent installation. Erect temporary sheltering structures, provide temporary bracing and supports, or cover equipment as required or directed to afford proper protection for that equipment.

C. The Contractor shall protect this work and the work of all other Contractors from damage by his work or workmen and shall make good any damage thus caused. He shall also be responsible for the proper protection of his equipment, machinery, materials and accessories delivered and installed on the job.

1.29 INSTALLATION AND CONNECTION OF OTHER DIVISION'S EQUIPMENT

A. Verify the electrical requirements of all equipment furnished under other Divisions, separate contracts, or by the Owner. Install conduit, power wiring, control wiring, devices, etc. as required for complete operation of all equipment.

1.30 OPTION TO RELOCATE OUTLETS AND RELATED DEVICES

A. The location of power, data and telephone outlets, wall switches and other related devices may be relocated at the Owner's option, at no additional cost to the Owner, to a point within **20 feet** of their present location provided the Contractor is notified prior to installation.

1.31 COOPERATION AND CLEAN-UP

A. It shall be the responsibility of the Contractor to cooperate fully to keep the job site in a clean and safe condition. Upon the completion of the job, the Contractor shall immediately remove all of his tools, equipment, surplus materials and debris.

B. After the installation is complete, and before the equipment is energized, clean the interior and exterior of all equipment thoroughly. Clean equipment, removing all debris, rubbish and foreign materials. Each component shall be cleaned and all dust and other foreign material removed. Components shall be cleaned of oxidation. The inside and outside of all switchgear shall also be wiped clean with a lemon-oil rag after all other cleaning is complete.

C. Any portion of the work requiring touch-up finishing shall be so finished to equal the specified finish on the product.

1.32 RECORD DRAWINGS AND DOCUMENTATION FOR OWNER

A. The Contractor shall obtain at his own expense a complete set of blueline prints on which to keep an accurate record of the installation of all materials, equipment and devices covered by the Contract. The record drawings shall indicate the location of all equipment and devices, and the routing of all systems. All piping and conduit buried in concrete slabs, walls and below grade shall be located by dimension; both horizontally and by vertical elevation, unless a surface mounted device in each space indicates the exact location. Obtain one complete reproducible set of the original drawings on which to neatly, legibly and accurately transfer all project related notations and deliver these drawings to the Architect/Engineer at job completion before final payment and delivery to the Owner. The above data, with the exception of the record drawings, shall be delivered prior to final acceptance.

B. The Contractor shall accumulate in duplicate during the job progress, the following data prepared in indexed 3-ring looseleaf, hard-back binders sized for 8-1/2 inch by 11 inch sheets. No binder shall exceed 3-1/2 inches thick. This data shall be turned over to the Architect/Engineer for review and subsequent delivery to the Owner prior to final acceptance.

1. Warranties, guarantees and manufacturer's directions on material, equipment and devices covered by the Contract.

2. Approved lighting fixture brochures, wiring diagrams and control diagrams.

3. Copies of approved submittals and shop drawings.

4. Operating instructions for major apparatus and recommended maintenance procedures.

5. Copies of all other data and/or drawings required during construction.

6. Repair parts list of major apparatus, including name, address and telephone number of local

supplier or representative.

7. Tag charts and diagrams hereinbefore specified.

1.33 FINAL OBSERVATION

A. The purpose of the final observation is to determine whether the Contractor has completed the construction in accordance with the Contract Documents and that in the Owner Representative's opinion the installation is satisfactory for final acceptance by the Owner.

B. It shall be the responsibility of the Contractor to assure that the installation is ready for final acceptance prior to calling upon the Architect/Engineer to make a final observation.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 16010

# SECTION 16055-OVERCURRENT PROTECTIVE DEVICE COORDINATION

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes computer-based, fault-current and overcurrent protective device coordination studies. Protective devices shall be set based on results of the protective device coordination study.

### 1.3 SUBMITTALS

A. Product Data: For computer software program to be used for studies.

B. Product Certificates: For coordination-study and fault-current-study computer software programs, certifying compliance with IEEE 399.

C. Qualification Data: For coordination-study specialist.

D. The following submittals shall be made concurrent with the approval for system protective devices. Submittals shall be in digital form and hard copy.

1. Coordination-study input data, including completed computer program input data sheets.
2. Study and Equipment Evaluation Reports.
3. Coordination-Study Report.
4. Completed power company transformer form.

### 1.4 QUALITY ASSURANCE

A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this Section. Manual calculations are not acceptable.

B. Coordination-Study Specialist Qualifications: An entity experienced in the application of computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.

1. Professional engineer, licensed in the state where Project is located, shall be responsible for the study. All elements of the study shall be performed under the direct supervision and control of engineer.

C. Comply with IEEE 242 for short-circuit currents and coordination time intervals.

D. Comply with IEEE 399 for general study procedures.

## PART 2 - PRODUCTS

### 2.1 COMPUTER SOFTWARE DEVELOPERS

A. Computer Software Developers: Subject to compliance with requirements, provide products by one of the following:
1. SKM Systems Analysis, Inc.
2. ESA Inc.
3. Operation Technology, Inc.

### 2.2 COMPUTER SOFTWARE PROGRAM REQUIREMENTS

A. Comply with IEEE 399.

B. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output. Computer software program shall report device settings and ratings of all overcurrent protective devices and shall demonstrate selective coordination by computer-generated, time-current coordination plots.

1. Features:

a. Arcing faults.
b. Simultaneous faults.
c. Explicit negative sequence.
d. Mutual coupling in zero sequence.
e. Voltage drop and voltage dip.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine Project overcurrent protective device submittals for compliance with electrical distribution system coordination requirements and other conditions affecting performance. Devices to be coordinated are indicated on Drawings.

1. Proceed with coordination study only after relevant equipment submittals have been assembled. Overcurrent protective devices shall be concurrent with submitted and approved coordination study.

## 3.2 POWER SYSTEM DATA

A. Gather and tabulate the following input data to support coordination study:

1. Product Data for overcurrent protective devices specified in other Division 16 Sections and involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Impedance of utility service entrance. Utility transformer size and impedance are typically obtained from the actual serving utility engineer.
3. Electrical Distribution System Diagram: In hard-copy and electronic-copy formats, showing the following:

    a. Circuit-breaker and fuse-current ratings and types.
    b. Relays and associated power and current transformer ratings and ratios.
    c. Transformer kilovolt amperes, primary and secondary voltages, connection type, impedance, and/or X/R ratios.
    d. Generator kilovolt amperes, size, voltage, and source impedance.
    e. Cables: Indicate conduit material, sizes of conductors, conductor material, insulation, and length.
    f. Busway ampacity and impedance.
    g. Motor horsepower and code letter designation according to NEMA MG 1.

4. Data sheets to supplement electrical distribution system diagram, cross-referenced with tag numbers on diagram, showing the following:

    a. Special load considerations, including starting inrush currents and frequent starting and stopping.
    b. Transformer characteristics, including primary protective device, magnetic inrush current, and overload capability.
    c. Motor full-load current, locked rotor current, service factor, starting time, type of start, and thermal-damage curve.
    d. Voltage dip for largest motor based on utility transformer and system layout. Advise engineer if dip is greater than 5%.
    e. Generator thermal-damage curve.
    f. Ratings, types, and settings of utility company's overcurrent protective devices.
    g. Special overcurrent protective device settings or types stipulated by utility company.
    h. Time-current-characteristic curves of devices indicated to be coordinated.
    i. Manufacturer, frame size, interrupting rating in amperes rms symmetrical, ampere or current sensor rating, long-time adjustment range, short-time adjustment range, and instantaneous adjustment range for circuit breakers.

j. Panelboards, switchboards, motor-control center ampacity, and interrupting rating in amperes rms symmetrical.

## 3.3 FAULT-CURRENT STUDY

A. Calculate the maximum available short-circuit current in amperes rms symmetrical at circuit-breaker positions of the electrical power distribution system. The calculation shall be for a current immediately after initiation and for a three-phase bolted short circuit at each of the following:

1. Switchgear and switchboard bus.
2. Medium-voltage controller.
3. Motor-control center.
4. Distribution panelboard.
5. Branch circuit panelboard.

B. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Include studies of system-switching configurations and alternate operations that could result in maximum fault conditions.

C. Calculate momentary and interrupting duties on the basis of maximum available fault current.

D. Calculations to verify interrupting ratings of overcurrent protective devices shall comply with IEEE 242.

1. Transformers:

a. ANSI C57.12.10.
b. ANSI C57.12.22.
c. ANSI C57.12.40.
d. IEEE C57.12.00.
e. IEEE C57.96.

2. Low-Voltage Circuit Breakers: IEEE 1015 and IEEE C37.20.1.
3. Low-Voltage Fuses: IEEE C37.46.

E. Study Report:

1. Show calculated X/R ratios and equipment interrupting rating (1/2-cycle) fault currents on electrical distribution system diagram.
2. Show interrupting (5-cycle) and time-delayed currents assess the sensitivity of overcurrent relays and devices.

F. Equipment Evaluation Report:

1. For 600-V overcurrent protective devices, ensure that interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
2. For devices and equipment rated for asymmetrical fault current, apply multiplication factors listed in the standards to 1/2-cycle symmetrical fault current.

3. Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short-circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

## 3.4 COORDINATION STUDY AND VOLTAGE DIP STUDY

A. Perform coordination study using approved computer software program. Prepare a written report using results of fault-current study. Comply with IEEE 399.

1. Calculate the maximum and minimum 1/2-cycle short-circuit currents.
2. Calculate the maximum and minimum interrupting duty (5 cycles to 2 seconds) short-circuit currents.
3. Calculate the maximum and minimum ground-fault currents.

B. Comply with IEEE 241 recommendations for fault currents and time intervals.

C. Transformer Primary Overcurrent Protective Devices:

1. Device shall not operate in response to the following:

a. Inrush current when first energized.
b. Self-cooled, full-load current or forced-air-cooled, specified for that transformer.
c. Permissible transformer overloads according to IEEE C57.96 if required by unusual loading or emergency conditions.

2. Device settings shall protect transformers according to IEEE C57.12.00, for fault currents.

D. Motors served by system shall be reviewed for voltage dip. Report shall verify dip on start is less than 5%.

E. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-32-382, ICEA P-45-482, and conductor melting curves in IEEE 242. Demonstrate that equipment withstands the maximum short-circuit current for a time equivalent to the tripping time of the primary relay protection or total clearing time of the fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short-circuit current.

F. Coordination-Study Report: Prepare a written report indicating the following results of coordination study:

1. Tabular Format of Settings Selected for Overcurrent Protective Devices:

a. Device tag.
b. Relay-current transformer ratios; and tap, time-dial, and instantaneous-pickup values.

c. Circuit-breaker sensor rating; and long-time, short-time, and instantaneous settings.
d. Fuse-current rating and type.
e. Ground-fault relay-pickup and time-delay settings.

2. Coordination Curves: Prepared to determine settings of overcurrent protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for the switching schemes and for emergency periods where the power source is local generation. Show the following information:

a. Device tag.
b. Voltage and current ratio for curves.
c. Three-phase and single-phase damage points for each transformer.
d. No damage, melting, and clearing curves for fuses.
e. Cable damage curves.
f. Transformer inrush points.
g. Maximum fault-current cutoff point.

3. Motor voltage dip report shall list motors and report on voltage dip expected at motor. Particular attention shall be paid to chiller and fire pump motors.

G. Completed data sheets for setting of overcurrent protective devices.

END OF SECTION 16055

# SECTION 16060-GROUNDING AND BONDING

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes methods and materials for grounding systems and equipment, plus the following special applications:

1. Underground distribution grounding.

### 1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Other Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in Part 3 "Field Quality Control" Article, including the following:

1. Ground rods.

2. Grounding arrangements and connections for separately derived systems.

3. Grounding for sensitive electronic equipment.

C. Field quality-control test reports.

D. Operation and Maintenance Data: For grounding to include the following in operation and maintenance manuals:

1. Instructions for periodic testing and inspection of grounding features at grounding rings and grounding connections for separately derived systems based on NFPA 70B.

a. Tests shall be to determine if ground resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if they do not.

b. Include recommended testing intervals.

### 1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.

3. Tinned Conductors: ASTM B 33.

4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.

5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.2 CONNECTORS

A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 by 96 inches (16 by 2400 mm) in diameter.

B. Refer to plans for XIT grounding system.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.

B. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 2/0 AWG minimum.

1. Bury at least 24 inches (600 mm) below grade.

2. Duct-Bank Grounding Conductor: Bury 12 inches (300 mm) above duct bank when indicated as part of duct-bank installation.

C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

D. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Install bus on insulated spacers 1 inch (25 mm), minimum, from wall 6 inches (150 mm) above finished floor, unless otherwise indicated.

2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, down to specified height above floor, and connect to horizontal bus.

E. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

2. Underground Connections: Welded connectors, except as otherwise indicated.

3. Connections to Structural Steel: Welded connectors.

## 3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

C. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

D. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

E. Signal and Communication Equipment: For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, grounding bar, and central equipment location.

1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-2-by-12-inch (6-by-50-by-300-mm) grounding bus.

2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

F. Metal Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade, unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.

C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.

3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

D. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Where water piping is metal install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes, using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.

E. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

F. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet (18 m) apart.

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.

2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at individual ground rods. Make tests at ground rods before any conductors are connected.

a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.

b. Perform tests by fall-of-potential method according to IEEE 81.

3. Prepare dimensioned drawings locating each ground rod and ground rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results.

B. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity 500 kVA and Less: 10 ohms.

2. Power and Lighting Equipment or System with Capacity 500 to 1000 kVA: 5 ohms.

3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.

4. Power Distribution Units or Panelboards Serving Electronic Equipment: 1 ohm(s).

C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 16060

SECTION 16073- HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Hangers and supports for electrical equipment and systems.

2. Construction requirements for concrete bases.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. IMC: Intermediate metal conduit.

C. RMC: Rigid metal conduit.

1.4 PERFORMANCE REQUIREMENTS

A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.5 SUBMITTALS

A. Product Data: For the following:

1. Steel slotted support systems.

2. Nonmetallic slotted support systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers. Include Product Data for components.

2. Steel slotted channel systems. Include Product Data for components.

3. Nonmetallic slotted channel systems. Include Product Data for components.

4. Equipment supports.

C. Welding certificates.

1.6 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Comply with NFPA 70.

1.7 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 7 Section "Roof Accessories."

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allied Tube & Conduit.

b. Cooper B-Line, Inc.; a division of Cooper Industries.

c. ERICO International Corporation.

d. GS Metals Corp.

e. Thomas & Betts Corporation.

f. Unistrut; Tyco International, Ltd.

g. Wesanco, Inc.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.

4. Channel Dimensions: Selected for applicable load criteria.

B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1) Hilti Inc.

2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.

3) MKT Fastening, LLC.

4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.

2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1) Cooper B-Line, Inc.; a division of Cooper Industries.

2) Empire Tool and Manufacturing Co., Inc.

3) Hilti Inc.

4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.

5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.

4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

6. Toggle Bolts: All-steel springhead type.

7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

B. Materials: Comply with requirements in Division 5 Section "Metal Fabrications" for steel shapes and plates.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slottedsupport system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with two-bolt conduit clamps.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.

2. To New Concrete: Bolt to concrete inserts.

3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.

4. To Existing Concrete: Expansion anchor fasteners.

5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.

6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.

7. To Light Steel: Sheet metal screws.

8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Comply with installation requirements in Division 5 Section "Metal Fabrications" for site-fabricated metal supports.

B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

C. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 3 Section "Cast-in-Place Concrete."

C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

2. Install anchor bolts to elevations required for proper attachment to supported equipment.

3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

## 3.5 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Touchup: Comply with requirements in Division 9 painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 16073

# SECTION 16075-ELECTRICAL IDENTIFICATION

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:

1. Identification for raceway.
2. Identification for conductors and communication and control cable.
3. Underground-line warning tape.
4. Warning labels and signs.
5. Instruction signs.
6. Equipment identification labels.
7. Miscellaneous identification products.

### 1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

### 1.4 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and ANSI C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.145.

### 1.5 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual, and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Color for Printed Legend:

1. Power Circuits: Black letters on an orange field.

2. Legend: Indicate system or service and voltage.

C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

D. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

2.2 CONDUCTOR AND COMMUNICATION- AND CONTROL-CABLE IDENTIFICATION MATERIALS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

2.3 UNDERGROUND-LINE WARNING TAPE

A. Description: Permanent, bright-colored, continuous-printed, polyethylene tape.

1. Not less than 6 inches (150 mm) wide by 4 mils (0.102 mm) thick.

2. Compounded for permanent direct-burial service.

3. Embedded continuous metallic strip or core.

4. Printed legend shall indicate type of underground line.

2.4 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Metal-Backed, Butyrate Warning Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for application. 1/4-inch (6.4-mm) grommets in corners for mounting. Nominal size, 10 by 14 inches (250 by 360 mm).

C. Warning label and sign shall include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."

2.5 INSTRUCTION SIGNS

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. in. (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.

1. Engraved legend with black letters on white face.

2. Punched or drilled for mechanical fasteners.

3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.6 EQUIPMENT IDENTIFICATION LABELS

A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).

2.7 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Cable Ties: Fungus-inert, self-extinguishing, 1-piece, self-locking, Type 6/6 nylon cable ties.

1. Minimum Width: 3/16 inch (5 mm).

2. Tensile Strength: 50 lb (22.6 kg), minimum.

3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).

4. Color: Black, except where used for color-coding.

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 APPLICATION

A. Accessible Raceways, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 20 A: Identify with orange snap-around label.

B. Accessible Raceways and Cables of Auxiliary Systems: Identify the following systems with color-coded, self-adhesive vinyl tape applied in bands:

1. Fire Alarm System: Red

2. Video: Yellow

3. Electrical Supervisory System: Green and blue

4. Telecommunication System: Blue

5. Intercom: White

6. Control Wiring: Green and red

C. Power-Circuit Conductor Identification: For primary and secondary conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, manholes, and handholes use color-coding conductor tape marker tape. Identify source and circuit number of each set of conductors. For single conductor cables, identify phase in addition to the above.

D. Branch-Circuit Conductor Identification: Where there are conductors for more than three branch circuits in same junction or pull box, use marker tape. Identify each ungrounded conductor according to source and circuit number.

E. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source and circuit number.

F. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, signal, sound, intercommunications, voice, and data connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.

2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.

3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and Operation and Maintenance Manual.

G. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable. Install underground-line warning tape for both direct-buried cables and cables in raceway.

H. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Comply with 29 CFR 1910.145 and apply metal-backed, butyrate warning signs. Identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.

1. Equipment with Multiple Power or Control Sources: Apply to door or cover of equipment including, but not limited to, the following:

a. Power transfer switches.

b. Controls with external control power connections.

2. Equipment Requiring Workspace Clearance According to NFPA 70: Unless otherwise indicated, apply to door or cover of equipment but not on flush panelboards and similar equipment in finished spaces.

I. Instruction Signs:

1. Operating Instructions: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

2. Emergency Operating Instructions: Install instruction signs with white legend on a red background with minimum 3/8-inch- (10-mm-) high letters for emergency instructions at equipment used for power transfer.

J. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:

a. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where 2 lines of text are required, use labels 2 inches (50 mm) high.

b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.

c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.

2. Equipment to Be Labeled:

a. Panelboards, electrical cabinets, and enclosures.

b. Access doors and panels for concealed electrical items.

c. Electrical switchgear and switchboards.

d. Transformers.

e. Emergency system boxes and enclosures.

f. Motor-control centers.

g. Disconnect switches.

h. Enclosed circuit breakers.

i. Motor starters.

j. Push-button stations.

k. Power transfer equipment.

l. Contactors.

m. Remote-controlled switches, dimmer modules, and control devices.

n. Battery inverter units.

o. Battery racks.

p. Power-generating units.

q. Master clock and program equipment.

r. Intercommunication and call system master and staff stations.

s. Fire-alarm control panel and annunciators.

t. Security and intrusion-detection control stations, control panels, terminal cabinets, and racks.

u. Monitoring and control equipment.

3.2 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach nonadhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.

F. System Identification Color Banding for Raceways and Cables: Each color band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.

G. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Use the colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color shall be factory applied.

2. Colors for 208/120-V Circuits:

a. Phase A: Black.

b. Phase B: Red.

c. Phase C: Blue.

3. Colors for 480/277-V Circuits:

a. Phase A: Brown.

b. Phase B: Orange.

c. Phase C: Yellow.

4. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

H. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches (400 mm) overall.

I. Painted Identification: Prepare surface and apply paint according to Division 9 painting Sections.

END OF SECTION 16075

# SECTION 16120-CONDUCTORS AND CABLES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:

1. Building wires and cables rated 600 V and less.

2. Connectors, splices, and terminations rated 600 V and less.

3. Sleeves and sleeve seals for cables.

B. Related Sections include the following:

1. Division 16 Section "Common Work Results for Electrical" for sleave and sleave seal requirements.

### 1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Qualification Data: For testing agency.

C. Field quality-control test reports.

### 1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

### 1.5 COORDINATION

A. Set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alcan Products Corporation; Alcan Cable Division.

2. American Insulated Wire Corp.; a Leviton Company.

3. General Cable Corporation.

4. Senator Wire & Cable Company.

5. Southwire Company.

C. Copper Conductors: Comply with NEMA WC 70.

D. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

E. Multiconductor Cable: Comply with NEMA WC 70 for Type SO with ground wire.

2.2 CONNECTORS AND SPLICES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.

2. Hubbell Power Systems, Inc.

3. O-Z/Gedney; EGS Electrical Group LLC.

4. 3M; Electrical Products Division.

5. Tyco Electronics Corp.

6. Burndy Products.

C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SLEEVES FOR CABLES

A. Refer to section 16051-Common Work Results for Electrical.

2.4 SLEEVE SEALS

A. Refer to section 16051-Common Work Results for Electrical.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type XHHW, single conductors in raceway.

B. Exposed Feeders: Type THHN-THWN, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN-THWN, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.

E. Feeders Installed below Raised Flooring: Type THHN-THWN, single conductors in raceway.

F. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-THWN, single conductors in raceway.

G. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

H. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.

I. Branch Circuits Installed below Raised Flooring: Type THHN-THWN, single conductors in raceway.

J. Branch Circuits in Cable Tray: Type THHN-THWN, single conductors in raceway.

K. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

L. Class 1 Control Circuits: Type THHN-THWN, in raceway.

M. Class 2 Control Circuits: Type THHN-THWN, in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

E. Support cables according to Division 16 Section "Electrical Supports and Seismic Restraints."

F. Identify and color-code conductors and cables according to Division 16 Section "Electrical Identification."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least [6 inches (150 mm)] [12 inches (300 mm)] of slack.

3.5 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 7 Section "Through-Penetration Firestop Systems."

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Rectangular Sleeve Minimum Metal Thickness:

1. For sleeve rectangle perimeter less than 50 inches (1270 mm) and no side greater than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).

2. For sleeve rectangle perimeter equal to, or greater than, 50 inches (1270 mm) and 1 or more sides equal to, or greater than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

E. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.

F. Cut sleeves to length for mounting flush with both wall surfaces.

G. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.

H. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and cable unless sleeve seal is to be installed.

I. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.

J. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and cable, using joint sealant appropriate for size, depth, and location of joint according to Division 7 Section "Joint Sealants."

K. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at cable penetrations. Install sleeves and seal with firestop materials according to Division 7 Section "Through-Penetration Firestop Systems."

L. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type flashing units applied in coordination with roofing work.

M. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeves to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

N. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between cable and sleeve for installing mechanical sleeve seals.

3.6 SLEEVE-SEAL INSTALLATION

A. Install to seal underground exterior-wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for cable material and size. Position cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.7 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Division 7 Section "Through-Penetration Firestop Systems."

3.8 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.

B. Perform tests and inspections and prepare test reports.

C. Tests and Inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test for compliance with requirements.

2. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.

    a. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.

    b. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

    c. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

D. Test Reports: Prepare a written report to record the following:

1. Test procedures used.

2. Test results that comply with requirements.

3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

E. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 16120

SECTION 1613-RACEWAYS AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

B. Related Sections include the following:
   1. Division 2 Section "Underground Ducts and Utility Structures" for exterior ductbanks, manholes, and underground utility construction.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. ENT: Electrical nonmetallic tubing.

C. FMC: Flexible metal conduit.

D. IMC: Intermediate metal conduit.

E. LFMC: Liquidtight flexible metal conduit.

F. LFNC: Liquidtight flexible nonmetallic conduit.

G. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work.
   1. Custom enclosures and cabinets.
   2. For handholes and boxes for underground wiring, including the following:
      a. Duct entry provisions, including locations and duct sizes.
      b. Frame and cover design.
      c. Grounding details.
      d. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons.
      e. Joint details.

C. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
   1. Structural members in the paths of conduit groups with common supports.

2. HVAC and plumbing items and architectural features in the paths of conduit groups with common supports.

D. Qualification Data: For professional engineer and testing agency.

E. Source quality-control test reports.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
2. Alflex Inc.
3. Allied Tube & Conduit; a Tyco International Ltd. Co.
4. Anamet Electrical, Inc.; Anaconda Metal Hose.
5. Electri-Flex Co.
6. Manhattan/CDT/Cole-Flex.
7. Maverick Tube Corporation.
8. O-Z Gedney; a unit of General Signal.
9. Wheatland Tube Company.

B. Rigid Steel Conduit: ANSI C80.1.

C. Aluminum Rigid Conduit: ANSI C80.5.

D. IMC: ANSI C80.6.

E. EMT: ANSI C80.3.

F. FMC: or aluminum.

G. LFMC: Flexible steel conduit with PVC jacket.

H. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
2. Fittings for EMT: Steel, set screw.
3. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.

I. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 NONMETALLIC CONDUIT AND TUBING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
2. Anamet Electrical, Inc.; Anaconda Metal Hose.
3. Arnco Corporation.
4. CANTEX Inc.
5. CertainTeed Corp.; Pipe & Plastics Group.
6. Condux International, Inc.
7. ElecSYS, Inc.
8. Electri-Flex Co.
9. Lamson & Sessions; Carlon Electrical Products.
10. Manhattan/CDT/Cole-Flex.
11. RACO; a Hubbell Company.
12. Thomas & Betts Corporation.

B. ENT: NEMA TC 13.

C. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.

D. LFNC: UL 1660.

E. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.

F. Fittings for LFNC: UL 514B.

2.3 OPTICAL FIBER/COMMUNICATIONS CABLE RACEWAY AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Arnco Corporation.
2. Endot Industries Inc.
3. IPEX Inc.
4. Lamson & Sessions; Carlon Electrical Products.

B. Description: Comply with UL 2024; flexible type, approved for plenum installation.

2.4 METAL WIREWAYS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cooper B-Line, Inc.
2. Hoffman.
3. Square D; Schneider Electric.

B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 3R, unless otherwise indicated.

C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Wireway Covers: Flanged-and-gasketed type.

E. Finish: Manufacturer's standard enamel finish.

2.5 SURFACE RACEWAYS

A. Surface Nonmetallic Raceways: Two-compartment, two-piece construction, manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Butler Manufacturing Company; Walker Division.
      b. Enduro Systems, Inc.; Composite Products Division.
      c. Hubbell Incorporated; Wiring Device-Kellems Division.
      d. Lamson & Sessions; Carlon Electrical Products.
      e. Panduit Corp.
      f. Walker Systems, Inc.; Wiremold Company (The).
      g. Wiremold Company (The); Electrical Sales Division.

2.6 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
   2. EGS/Appleton Electric.
   3. Hoffman.
   4. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
   5. RACO; a Hubbell Company.
   6. Thomas & Betts Corporation.
   7. Walker Systems, Inc.; Wiremold Company (The).

B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.

C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

D. Nonmetallic Floor Boxes: Adjustable, rectangular.

E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

F. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized, cast iron with gasketed cover.

G. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
   1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

H. Cabinets:
   1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
   2. Hinged door in front cover with flush latch and concealed hinge.
   3. Key latch to match panelboards.
   4. Metal barriers to separate wiring of different systems and voltage.
   5. Accessory feet where required for freestanding equipment.

## 2.7 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. Description: Comply with SCTE 77.
   1. Color of Frame and Cover: Gray.
   2. Configuration: Units shall be designed for flush burial and have open bottom, unless otherwise indicated.
   3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure.
   4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
   5. Cover Legend: Molded lettering, as indicated for each service.
   6. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
   7. Handholes 12 inches wide by 24 inches long (300 mm wide by 600 mm long) and larger shall have inserts for cable racks and pulling-in irons installed before concrete is poured.

B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel or fiberglass or a combination of the two.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Armorcast Products Company.
      b. Carson Industries LLC.
      c. CDR Systems Corporation.
      d. NewBasis.

## 2.8 SLEEVES FOR RACEWAYS

A. Refer to section 16051-Common Work Results for Electrical.

## 2.9 SLEEVE SEALS

A. Refer to section 16051-Common Work Results for Electrical.

## 2.10 SOURCE QUALITY CONTROL FOR UNDERGROUND ENCLOSURES

A. Handhole and Pull-Box Prototype Test: Test prototypes of handholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.

1. Tests of materials shall be performed by a independent testing agency.
2. Strength tests of complete boxes and covers shall be by either an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.
3. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012, and traceable to NIST standards.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
   1. Exposed Conduit: Rigid steel conduit.
   2. Concealed Conduit, Aboveground: IMC.
   3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
   4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
   5. Boxes and Enclosures, Aboveground: NEMA 250, Type 4.
   6. Application of Handholes and Boxes for Underground Wiring:
      a. Handholes and Pull Boxes in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Polymer concrete, SCTE 77, Tier 15 structural load rating.
      b. Handholes and Pull Boxes in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: Polymer-concrete units, SCTE 77, Tier 8 structural load rating.

B. Comply with the following indoor applications, unless otherwise indicated:
   1. Exposed, Not Subject to Physical Damage: EMT.
   2. Exposed, Not Subject to Severe Physical Damage: IMC.
   3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit. Includes raceways in the following locations:
      a. Loading dock.
      b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
      c. Mechanical rooms.
   4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
   5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
   6. Damp or Wet Locations: Rigid steel conduit.
   7. Raceways for Optical Fiber or Communications Cable in Spaces Used for Environmental Air: Plenum-type, optical fiber/communications cable raceway.
   8. Raceways for Optical Fiber or Communications Cable Risers in Vertical Shafts: Riser-type, optical fiber/communications cable raceway.
   9. Raceways for Concealed General Purpose Distribution of Optical Fiber or Communications Cable: Plenum-type, optical fiber/communications cable raceway.
   10. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.

C. Minimum Raceway Size: 3/4-inch (21-mm) trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.
   1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.
   2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with that material. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer.

E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.

F. Do not install aluminum conduits in contact with concrete.

3.2 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Support raceways as specified in Division 16 Section "Electrical Supports and Seismic Restraints."

E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

H. Raceways Embedded in Slabs:
   1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
   2. Arrange raceways to cross building expansion joints at right angles with expansion fittings. Note that some building or local electrical codes may not permit nonmetallic tubing in fire-rated slabs in subparagraph below.
   3. Change from ENT to rigid steel conduit before rising vertically and penetrating concrete slab. Cover conduit in contact with the concrete and ground with 2-inch electrical tape.
   4. Change from ENT to rigid steel conduit before rising vertically (for exterior applications). Cover conduit in contact with the concrete and ground with 2-inch electrical tape.

I. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

J. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

K. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.

L. Raceways for Optical Fiber and Communications Cable: Install raceways, metallic and nonmetallic, rigid and flexible, as follows:
   1. 3/4-Inch (19-mm) Trade Size and Smaller: Install raceways in maximum lengths of 50 feet (15 m).
   2. 1-Inch (25-mm) Trade Size and Larger: Install raceways in maximum lengths of 75 feet (23 m).
   3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

M. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
   1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
   2. Where otherwise required by NFPA 70.
   3. All conduits entering a building.

N. Expansion-Joint Fittings for RNC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F (17 deg C), and that has straight-run length that exceeds 25 feet (7.6 m).
   1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:
      a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F (70 deg C) temperature change.
      b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F (86 deg C) temperature change.
      c. Indoor Spaces: Connected with the Outdoors without Physical Separation: 125 deg F (70 deg C) temperature change.
      d. Attics: 135 deg F (75 deg C) temperature change.
   2. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F (0.06 mm per meter of length of straight run per deg C) of temperature change.

3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.

O. Flexible Conduit Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations subject to severe physical damage.
2. Use LFMC in damp or wet locations not subject to severe physical damage.

P. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.

Q. Set metal floor boxes level and flush with finished floor surface.

R. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

## 3.3 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:
1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 2 Section "Earthwork" for pipe less than 6 inches (150 mm) in nominal diameter.
2. Install backfill as specified in Division 2 Section "Earthwork."
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 2 Section "Earthwork."
4. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
   a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches (75 mm) of concrete.
   b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.
5. Warning Planks: Bury warning planks approximately 12 inches (300 mm) above direct-buried conduits, placing them 24 inches (600 mm) o.c. Align planks along the width and along the centerline of conduit.

## 3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.

B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: In paved areas, set so cover surface will be flush with finished grade.

D. Install handholes and boxes with bottom below the frost line, below grade.

E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in the enclosure.

F. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

## 3.5 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 7 Section "Through-Penetration Firestop Systems."

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Rectangular Sleeve Minimum Metal Thickness:
   1. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side greater than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
   2. For sleeve cross-section rectangle perimeter equal to, or greater than, 50 inches (1270 mm) and 1 or more sides equal to, or greater than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

E. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.

F. Cut sleeves to length for mounting flush with both surfaces of walls.

G. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.

H. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway unless sleeve seal is to be installed.

I. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.

J. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway, using joint sealant appropriate for size, depth, and location of joint. Refer to Division 7 Section "Joint Sealants" for materials and installation.

K. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway penetrations. Install sleeves and seal with firestop materials. Comply with Division 7 Section "Through-Penetration Firestop Systems."

L. Roof-Penetration Sleeves: Seal penetration of individual raceways with flexible, boot-type flashing units applied in coordination with roofing work.

M. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

N. Underground, Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway and sleeve for installing mechanical sleeve seals.

## 3.6 SLEEVE-SEAL INSTALLATION

A. Install to seal underground, exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway material and size. Position raceway in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

## 3.7 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Through-Penetration Firestop Systems."

## 3.8 PROTECTION

A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
   1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
   2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 16130

SECTION 16140 -WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Receptacles, receptacles with integral GFCI, and associated device plates.

2. Twist-locking receptacles.

3. Isolated-ground receptacles.

4. Snap switches and wall-box dimmers.

5. Pendant cord-connector devices.

6. Cord and plug sets.

7. Floor service outlets, poke-through assemblies, service poles, and multioutlet assemblies.

1.3 DEFINITIONS

A. EMI: Electromagnetic interference.

B. GFCI: Ground-fault circuit interrupter.

C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

D. RFI: Radio-frequency interference.

E. TVSS: Transient voltage surge suppressor.

F. UTP: Unshielded twisted pair.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

C. Samples: One for each type of device and wall plate specified, in each color specified.

D. Field quality-control test reports.

E. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of wiring device and associated wall plate through one source from a single manufacturer. Insofar as they are available, obtain all wiring devices and associated wall plates from a single manufacturer and one source.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

1.6 COORDINATION

A. Receptacles for Owner-Furnished Equipment: Match plug configurations.

1. Cord and Plug Sets: Match equipment requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).

2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).

3. Leviton Mfg. Company Inc. (Leviton).

4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.2 STRAIGHT BLADE RECEPTACLES

A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 5351 (single), 5352 (duplex).

b. Hubbell; HBL5351 (single), CR5352 (duplex).

c. Leviton; 5891 (single), 5352 (duplex).

d. Pass & Seymour; 5381 (single), 5352 (duplex).

B. Isolated-Ground, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

2. Products: Subject to compliance with requirements, provide one of the following:

a. Hubbell; CR 5253IG.

b. Leviton; 5362-IG.

c. Pass & Seymour; IG6300.

3. Description: Straight blade; equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap. Isolation shall be integral to receptacle construction and not dependent on removable parts.

2.3 GFCI RECEPTACLES

A. General Description: Straight blade, non-feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.

B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; GF20.

b. Pass & Seymour; 2084.

C. Isolated-Ground, Duplex Convenience Receptacles:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

2. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; IG5362BLS.

b. Hubbell; IG5362SA.

c. Leviton; 5380-IG.

3. Description: Straight blade, 125 V, 20 A; NEMA WD 6 configuration 5-20R. Equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap. Isolation shall be integral to receptacle construction and not dependent on removable parts.

2.4 TWIST-LOCKING RECEPTACLES

A. Single Convenience Receptacles: Match voltage and current ratings and number of conductors to requirements of equipment being connected.

2.5 PENDANT CORD-CONNECTOR DEVICES

A. Description: Matching, locking-type plug and receptacle body connector; NEMA WD 6 configurations L5-20P and L5-20R, heavy-duty grade.

1. Body: Nylon with screw-open cable-gripping jaws and provision for attaching external cable grip.

2. External Cable Grip: Woven wire-mesh type made of high-strength galvanized-steel wire strand, matched to cable diameter, and with attachment provision designed for corresponding connector.

2.6 CORD AND PLUG SETS

A. Description: Match voltage and current ratings and number of conductors to requirements of equipment being connected.

1. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and equipment-rating ampacity plus a minimum of 30 percent.

2. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

2.7 SNAP SWITCHES

A. Comply with NEMA WD 1 and UL 20.

B. Switches, 120/277 V, 20 A:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 2221 (single pole), 2222 (two pole), 2223 (three way), 2224 (four way).

b. Hubbell; CS1221 (single pole), CS1222 (two pole), CS1223 (three way), CS1224 (four way).

c. Leviton; 1221-2 (single pole), 1222-2 (two pole), 1223-2 (three way), 1224-2 (four way).

d. Pass & Seymour; 20AC1 (single pole), 20AC2 (two pole), 20AC3 (three way), 20AC4 (four way).

C. Single-Pole, Double-Throw, Momentary Contact, Center-Off Switches, 120/277 V, 20 A; for use with mechanically held lighting contactors.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 1995.

b. Hubbell; HBL1557.

c. Leviton; 1257.

d. Pass & Seymour; 1251.

D. Key-Operated, Single-Pole, Double-Throw, Momentary Contact, Center-Off Switches, 120/277 V, 20 A; for use with mechanically held lighting contactors, with factory-supplied key in lieu of switch handle.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cooper; 1995L.

b. Hubbell; HBL1557L.

c. Leviton; 1257L.

d. Pass & Seymour; 1251L.

2.8 WALL PLATES

A. Single and combination types to match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.

2. Material for Finished Spaces: 0.035-inch- (1-mm-) thick, satin-finished stainless steel.

3. Material for Unfinished Spaces: Galvanized steel.

4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."

B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant, die-cast aluminum with lockable cover.

2.9 FLOOR SERVICE FITTINGS

A. Type: Modular, flush-type, dual-service units suitable for wiring method used.

B. Compartments: Barrier separates power from voice and data communication cabling.

C. Service Plate: Rectangular, solid brass with satin finish.

D. Power Receptacle: NEMA WD 6 configuration 5-20R, gray finish, unless otherwise indicated.

E. Voice and Data Communication Outlet: By others.

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2.10 FINISHES

A. Color: Wiring device catalog numbers in Section Text do not designate device color.

1. Wiring Devices Connected to Normal Power System: White, unless otherwise indicated or required by NFPA 70 or device listing.

2. Isolated-Ground Receptacles: Orange.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.

B. Coordination with Other Trades:

1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.

2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.

3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.

4. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:

1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.

2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.

3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.

4. Existing Conductors:

a. Cut back and pigtail, or replace all damaged conductors.

b. Straighten conductors that remain and remove corrosion and foreign matter.

c. Pigtailing existing conductors is permitted provided the outlet box is large enough.

D. Device Installation:

1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.

2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.

3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.

4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.

5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.

6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.

7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.

8. Tighten unused terminal screws on the device.

9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the right.

2. Install hospital-grade receptacles in patient-care areas with the ground pin or neutral blade at the top.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Dimmers:

1. Install dimmers within terms of their listing.

2. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

I. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.2 IDENTIFICATION

A. Comply with Division 16 Section "Electrical Identification."

1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.3 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

1. Test Instruments: Use instruments that comply with UL 1436.

2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.

2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is not acceptable.

3. Ground Impedance: Values of up to 2 ohms are acceptable.

4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.

5. Using the test plug, verify that the device and its outlet box are securely mounted.

6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

C. Test straight blade for the retention force of the grounding blade according to NFPA 99. Retention force shall be not less than 4 oz. (115 g).

END OF SECTION 16140

SECTION 16145 -LIGHTING CONTROL DEVICES

PART 1 – GENERAL

1.1. RELATED DOCUMENTS

A. NA

1.2. SUMMARY

A. The lighting control system specified in this section shall provide time-based, sensor-based (both occupancy and daylight), and manual lighting control.
B. The system shall be capable of turning lighting loads on/off as well as dimming lights (if lighting load is capable of being dimmed)
C. All system devices shall be networked together enabling digital communication and shall be individually addressable.
D. The system architecture shall be capable of enabling stand-alone groups (rooms) of devices to function in some default capacity even if network connectivity to the greater system is lost.
E. The system architecture shall facilitate remote operation via a computer connection.
F. The system shall not require any centrally hardwired switching equipment.

1.3. DEFINITIONS

A. Refer to lighting control sheets for definitions.

1.4. SUBMITTALS

A. Product Datasheets (general device descriptions, dimensions, wiring details, nomenclature)
B. Riser Diagrams – typical per room type (detailed drawings showing device interconnectivity of devices).
C. Other Diagrams – as needed for special operation or interaction with other system(s).
D. Example Contractor Startup/Commissioning Worksheet – must be completed prior to factory start-up.
E. Hardware and Software Operation Manuals.
F. Other operational descriptions as needed.
G. Owner Training documentation.
H. Contractor Installation Training documentation.

1.5 QUALITY ASSURANCE

A. All steps in sensor manufacturing process shall occur in the USA; including population of all electronic components on circuit boards, soldering, programming, wiring, and housing.

B. All components and the manufacturing facility where product was manufactured must be ROHS compliant.

C. In high humidity or cold environments, the sensors shall be conformably coated and rated for condensing humidity and -40 degree Fahrenheit (and Celsius) operation.

D. All applicable products must be UL / CUL Listed or other acceptable national testing organization.

1.6. COORDINATION

A. Coordinate lighting control components to form an integrated interconnection of compatible components.

B. Coordinate lighting controls with BAS either through IP based intercommunication of system or hardwired auxiliary relay outputs.

C. The installing contractor shall be responsible for a complete and functional system in accordance with all applicable local and national codes.

1.7. WARRANTY

A. All devices in lighting control system shall have a 5 year warranty.

PART 2 – PRODUCTS

2.1. MANUFACTURERS

A. This specification is based on the nLight® Network Control System from Sensor Switch, an Acuity Brands Company.

In lighting controls where titles below are column or row headings that introduce lists. The following requirements apply to product selection. The specifying engineer must approve any proposed substitution in writing by addendum. For Engineer's review of proposed substitution products, furnish (2) copies of a side by side comparison submittal identifying any deviation from product submittal of requested substitution shall be made (7) days prior to bid date.

2.2. SYSTEM REQUIREMENTS

A. System shall have an architecture that is based upon three main concepts; 1) intelligent lighting control devices 2) standalone lighting control zones 3) network backbone for remote or time based operation.

B. Intelligent lighting control devices shall consist of one or more basic lighting control components; occupancy sensors, photocell sensors, relays, dimming outputs, manual switch stations, and manual dimming stations. Combining one or more of these components into a single device enclosure should be permissible so as to minimize overall device count of system.

C. Intelligent lighting control devices shall communicate digitally, require ~2 mA of current to function (Graphic WallPod excluded), and posses at least two RJ-45 connectors.

D. Lighting control zones shall consist of one or more intelligent lighting control components, be capable of stand-alone operation, and be capable of being connected to a higher level network backbone.

E. Devices within a lighting control zone shall be connected with CAT-5 low voltage cabling, in a daisy-chain fashion, and in any order.

F. Lighting control zone shall be capable of automatically configuring itself for default operation without any start-up labor required.

G. Individual lighting zones must continue to provide a user defined default level of lighting control in the event of a system communication failure with the backbone network or the management software becoming unavailable.

H. Power for devices within a lighting control zone shall come from either resident devices already present for switching purposes (relay device), or from the network backbone. Standalone “bus power supplies” shall not be required in all cases.

I. All switching and dimming for a specific lighting zone shall take place within the devices located in the zone itself (i.e. not in a remotely located devices such as panels) to facilitate system robustness and minimize wiring requirements. Specific applications that require centralized or remote switching shall be capable of being accommodated.

J. System shall have a primary wall mounted network control “gateway” device that is capable of accessing and controlling all other system devices and linking into an Ethernet LAN.

K. System shall use “bridge” devices that route communication and distribute power for up to 8 lighting zones together for purposes of decreasing system wiring requirements.

L. System shall have a web-based software management program that enables remote system control, status monitoring, and creation of lighting control profiles.

M. Individual lighting zones shall be capable of being segmented into several channels of occupancy, photocell, and switch functionality for more advanced configurations and sequences of operation.

N. System shall be capable of operating a lighting control zone according to several sequences of operation:

a. Auto-On / Auto-Off (via occupancy sensors)
b. Manual-On / Auto-Off
c. Auto-to-Override On
d. Manual-to-Override On
e. Auto On/Predictive Off
f. Multi-Level On (multiple lighting levels per manual button press)

O. A taskbar style application shall be available for individual lighting control.

P. Control software shall enable logging of system performance data.

Q. Control software shall enable a basic level of integration with a BAS.

## 2.3. INDIVIDUAL DEVICE SPECIFICATIONS

A. Control Module (Gateway)

a. Module shall be a wall mounted user accessible device that is capable of communicating and controlling downstream system control devices and linking into an Ethernet.
b. Devices shall be powered by low voltage, fit within a two gang switch box, and have a backlit LCD panel.
c. User control shall be made available via finger-touch buttons with no moving parts. Buttons shall be capable of being locked for security.
d. Device shall have three RJ-45 ports for connection to other backbone devices (bridges) or directly to a lighting control zones devices.
e. Device shall automatically detect all devices downstream of it.
f. Device shall have a standard and astronomical internal time clock.
g. Device shall have one RJ-45 10/100 BaseT Ethernet connection.
h. Each control gateway device shall be capable of linking 400 devices to the management software.
i. Device shall be capable of using a dedicated or DHCP assigned IP address.
j. Network Control Gateway device shall be the following Sensor Switch model number: nGWY

B. Network System Occupancy Sensors

a. Occupancy sensors system shall sense the presence of human activity within the desired space and fully control the on/off function of the lights.

b. Sensors shall utilize passive infrared (PIR) technology, which detects occupant motion, to initially turn lights on from an off state; thus preventing false on conditions. Ultrasonic or Microwave based sensing technologies shall not be accepted.

c. For applications where a second method of sensing is necessary to adequately detect maintained occupancy (such as in rooms with obstructions), a sensor with an additional “dual” technology shall be used.

d. Dual technology sensors shall have one of its two technologies not require motion to detect occupancy. Acceptable dual technology includes PIR/Microphonics (also known as Passive Dual Technology or PDT) which both looks for occupant motion and listens for sounds indicating occupants. Sensors where both technologies detect motion (PIR/Ultrasonic) shall not be acceptable.

e. All sensing technologies shall be <u>acoustically passive</u> meaning they do not transmit sounds waves of any frequency (for example in the Ultrasonic range), as these technologies have the potential for interference with other electronic devices within the space (such as electronic white board readers). Acceptable detection technologies include Passive Infrared (PIR), and/or Microphonics technology. Ultrasonic or Microwave based sensing technologies shall not be accepted.

f. Sensors shall be available with zero, one, or two integrated Class 1 switching relays, and up to one 0-10 VDC dimming output. Senors shall be capable of switching 120 / 277 / 347 VAC. Load ratings shall be 800 W @ 120 VAC, 1200 W @ 277 VAC, 1500 W @ 347 VAC, and ¼ HP motor. Relays shall be dry contacts.
g. Sensors shall be available with one or two occupancy “poles”, each of which provides a programmable time delay.

h. Sensors shall be available in multiple lens options which are customized for specific applications.
i. Communication and Class 2 low voltage power shall be delivered to each device via standard CAT-5 low voltage cabling with RJ-45 connectors.
j. All sensors shall have two RJ-45 ports.
k. Every sensor parameter shall be available and configurable remotely from the software and locally via the device push-button.
l. Sensors shall be able to function together with other sensors in order to provide expanded coverage areas by simply daisy-chain wiring together the units with CAT-5 cabling.
m. Sensors shall be equipped with an automatic override for 100 hour burn-in of lamps. This feature must be available at any time for lamp replacements.
n. Wall switch sensors shall recess into single-gang switch box and fit a standard GFI opening.
o. Wall switch sensors must meet NEC grounding requirements by providing a dedicated ground connection and grounding to mounting strap. Line and load wire connections shall be interchangeable. Sensor shall not allow current to pass to the load when sensor is in the unoccupied (Off) condition.
p. Wall switch sensors shall have optional features for photocell/daylight override, vandal resistant lens, and low temperature/high humidity operation.
q. Wall switch sensors shall be available in four standard colors (Ivory, White, Almond, Gray)
r. Wall switch sensors shall be the following Sensor Switch model numbers, with device color and optional features as specified:

    nWSD (PIR, 1 Relay)

    nWSD-PDT (Dual Technology, 1 Relay)

    nWSD-2P (PIR, 2 Relays)

    nWSD-PDT-2P (Dual Technology, 2 Relays)

    nWSD-NL (PIR w/ Night Light, 1 Relay)

    nWSD-PDT-NL (Dual Technology w/ Night Light, 1 Relay)

    nWSD-LV (PIR, No Relay)

    nWSD-PDT-LV (Dual Technology w/ Night Light, No Relay)

s. Network system shall also have ceiling, fixture, recessed, & corner mounted sensors available.
t. Sensors shall have optional features for photocell/daylight override, dimming control, and low temperature/high humidity operation.
u. Sensors with dimming can control 0 to 10 VDC dimmable ballasts by sinking up to 20 mA of Class 2 current (typically 40 or more ballasts).
v. Sensors shall be the following Sensor Switch model numbers, with device options as specified:

| Model # Series | Occupancy Poles | # of Relays | Lens Type | Detection Technology |
|---|---|---|---|---|
| nCM(B)-9 | 1 | - | Standard | PIR |
| nCM(B)-9-2P | 2 | - | Standard | PIR |
| nCMR(B)-9 | 1 | 1 | Standard | PIR |
| nCMR(B)-9-2P | 2 | 2 | Standard | PIR |
| nCM(B)-PDT | 1 | - | Standard | Dual |
| nCM(B)-PDT-2P | 2 | - | Standard | Dual |
| nCMR(B)-PDT | 1 | 1 | Standard | Dual |
| nCMR(B)-PDT-2P | 2 | 2 | Standard | Dual |
| nCM(B)-10 | 1 | - | Extended | PIR |
| nCM(B)-10-2P | 2 | - | Extended | PIR |
| nCMR(B)-10 | 1 | 1 | Extended | PIR |
| nCMR(B)-10-2P | 2 | 2 | Extended | PIR |
| nCM(B)-PDT-10 | 1 | - | Extended | Dual |
| nCM(B)-PDT-10-2P | 2 | - | Extended | Dual |
| nCMR(B)-PDT-10 | 1 | 1 | Extended | Dual |
| nCMR(B)-PDT-10-2P | 2 | 2 | Extended | Dual |
| nWV-16 | 1 | - | Wide View | PIR |
| nWV-PDT | 1 | - | Wide View | Dual |
| nHW-13 | 1 | - | Hallway | PIR |
| nCM(B)-6 | 1 | - | High Bay | PIR |
| nCMR(B)-6 | 1 | 1 | High Bay | PIR |
| nCMR(B)-6-2P | 2 | 2 | High Bay | PIR |
| nCMR(B)-6-480 | 1 | 2 | High Bay | PIR |

Note: Recessed mount versions of the above ceiling(fixture) mount versions also shall be available (e.g. nCMR(B) 9 => nRMR 9)

C. Network System Daylight (Photocell and or Dimming) Sensors

a. Photocell shall provide for an on/off set-point, and a deadband to prevent the artificial light from cycling. Delay shall be incorporated into the photocell to prevent rapid response to passing clouds.
b. Photocell and dimming sensor's set-point and deadband shall be automatically calibrated through the sensor's microprocessor by initiating an "Automatic Set-point Programming" procedure. Min and max dim settings as well as set-point may be manually entered.
c. Deadband setting shall be verified and modified by the sensor automatically every time the lights cycle to accommodate physical changes in the space (i.e., furniture layouts, lamp depreciation, or lamp outages).
d. Dimming sensors shall control 0 to 10 VDC dimmable ballasts by sinking up to 20 mA of class 2 current (typically 40 or more ballasts).

e. Photocell and dimming sensors shall be equipped with an automatic override for 100 hour burn-in of lamps. This feature must be available at any time for lamp replacements. (Note: This function should be performed prior to any dimming of the lamps including the “auto set-point” setting.)
f. Combination units that have all features of on/off photocell and dimming sensors shall also be available.
g. A dual zone option shall be available for On/Off Photocell, Automatic Dimming Control Photocell, or Combination units. The second zone shall be capable of being controlled as an “offset” from the primary zone.
h. Line voltage versions of the above described photocell and combination photocell/dimming sensors shall be capable of switching both 120 VAC, 277 VAC, and 347 VAC. Load ratings shall be 800 W @ 120 VAC, 1200 W @ 277 VAC, 1500 W @ 347 VAC, and ¼ HP motor load. Relays shall be dry contacts.
i. Sensor shall be the following Sensor Switch model numbers, with device options as specified:

nCM(B) PC (on/off))

nCM(B) ADC (dimming)

nCM(B) PC ADC (on/off, 0-10 VDC dimming)

nCMR(B) PC (on/off, single relay)

nCMR(B) PC ADC (on/off, 0-10 VDC dimming, single relay)

Note: Recessed mount versions of the above ceiling(fixture) mount versions also shall be available (e.g. nCMR(B) PC => nRMR PC)

D. Networked Power (Relay) Packs

a. Power Pack shall incorporate one or more Class 1 relays and contribute low voltage power to the rest of the system. Slave Packs shall incorporate the relay(s), shall have an optional 2nd relay or 0-10 VDC dimming output, but shall not be required to contribute system power. Power Supplies shall provide system power only, but are not required to switch line voltage circuit. Auxiliary Relay Packs shall switch low voltage circuits only.
b. Power Packs shall accept 120 or 277 VAC (or optionally 347 VAC), be plenum rated, and provide Class 2 power to the system.
c. All devices shall have two RJ-45 ports.
d. Every Power Pack parameter shall be available and configurable remotely from the software and locally via the device push-button.
e. Power Pack shall securely mount to junction location through a threaded ½ inch chase nipple. Plastic clips into junction box shall not be accepted. All Class 1 wiring shall pass through chase nipple into adjacent junction box without any exposure of wire leads. Note: UL Listing under Energy Management or Industrial Control Equipment automatically meets this requirement, whereas Appliance Control Listing does not meet this safety requirement.

f. When required by local code, Power Pack must install inside standard electrical enclosure and provide UL recognized support to junction box. All Class 1 wiring is to pass through chase nipple into adjacent junction box without any exposure of wire leads.
g. Class 1 Relays used in Power (Slave) Packs shall provide 16 Amp switching of all load types, and be rated for 400,000 cycles.
h. Power (Relay) Packs and Supplies shall be the following Sensor Switch model numbers:

nPP16 (Power Pack w/ relay)

nSP16 (Slave Pack w/ relay)

nSP5 2P (Slave Pack w/ two relays)

nPS 80 (Power Supply)

nAR 40 (Low voltage auxiliary relay pack)

E. Wall Switches & Dimmers

a. Devices shall recess into single-gang switch box and fit a standard GFI opening.
b. Devices shall be available with zero or one integrated Class 1 switching relay.
c. Communication and Class 2 low voltage power shall be delivered to each device via standard CAT-5 low voltage cabling with RJ-45 connectors.
d. All sensors shall have two RJ-45 ports.
e. All devices shall provide toggle switch control. Dimming control and low temperature/high humidity operation are available options.
f. Devices shall be available in four colors (Ivory, White, Almond, Gray).
g. Devices with dimming control outputs can control 0 to 10 VDC dimmable ballasts by sinking up to 20 mA of Class 2 current (typically 40 or more ballasts).
h. Wall switches & dimmers shall be the following Sensor Switch model numbers, with device options as specified:

nPOD (single on/off, capacitive touch)

nPOD 2P (single on/off, capacitive touch)

nPODR (single on/off, one relay, capacitive touch)

nPODM (single on/off, mechanical buttons)

nPODM 2P (single on/off, mechanical buttons)

F. Graphic Wall Station

a. Device shall have a 3.5” full color touch screen for selecting up to 8 programmable lighting control presets or acting as up to 16 on/off/dim control switches.
b. Device shall enable configuration of lighting presets, switched, and dimmers via password protected setup screens.
c. Device shall enable user supplied .jpg screen saver image to be uploaded.
d. Device shall surface mount to single-gang switch box
e. Device shall have a micro-USB style connector for local computer connectivity.

f. Device shall have two RJ-45 ports for communication
g. Device shall be the following Sensor Switch model number:

nPOD GFX

D. Scene Controller

a. Device shall have four buttons for selecting programmable lighting control profiles or acting as on/off switches.
b. Device shall recess into single-gang switch box and fit a standard GFI opening.
c. Device shall provide user control via touch sensitive buttons which have no mechanical parts.
d. Communication and Class 2 low voltage power shall be delivered to each device via standard CAT-5 low voltage cabling with RJ-45 connectors.
e. All sensors shall have two RJ-45 ports.
f. Device shall have four touch sensitive buttons for selecting programmable lighting control profiles.
g. Device shall have four bi-color LEDs indicating current selection.
h. Scene Selector device shall be the following Sensor Switch model number:

nPODS

1.2. Communication Bridges

a. Device shall surface mount to a standard 4” x 4” square junction box.
b. Device shall have 8 RJ-45 ports.
c. Device shall be capable of aggregating communication from multiple lighting control zones for purposes of minimizing backbone wiring requirements back to Control Gateway.
d. Device shall be powered with Class 2 low voltage supplied locally via a directly wired power supply or delivered via a CAT-5 cabled connection.
e. Device shall be careful of redistributing power from its local supply and connect lighting control zones with excess power to lighting control zones with insufficient local power. This architecture also enables loss of power to a particular area to be less impactful on network lighting control system.
f. Communication Bridge devices shall be the following Sensor Switch model numbers:

nBRG 8 (8 Ports)

2.4. LIGHTING CONTROL PROFILES

A. Changes to the operation of the system shall be capable of being made in real-time or scheduled via lighting control profiles. These profiles are outlines of settings that direct how a collection of devices function for a defined time period.
B. Lighting control profiles shall be capable of being created and applied to a single device, zone of devices, or customized group of zones.

C. All relays and dimming outputs shall be capable of being scheduled to track or ignore information regarding occupancy, daylight, and local user switches via lighting control profiles.
D. Every device parameter (e.g. sensor time delay and photocell set-point) shall be configurable via a lighting control profile.
E. All lighting control profiles shall be stored on the network control gateway device and on the software's host server.
F. Lighting control profiles shall be capable of being scheduled to run according to the following calendar options: start date/hour/minute, end date/hour/minute, and sunrise/sunset +/- timed offsets.
G. Sunrise/sunset times shall be automatically derived from location information using an astronomical clock.
H. Daylight savings time adjustments shall be capable of being performed automatically, if desired.
I. Lighting control profile schedules shall be capable of being given the following recurrence settings: daily, weekday, weekend, weekly, monthly, and yearly.
J. Software shall provide a graphical tool for easily viewing scheduled lighting control profiles.

2.5. MANAGEMENT SOFTWARE

A. Every device parameter (e.g. sensor time delay and photocell set-point) shall be available and configurable remotely from the software
B. The following status monitoring information shall be made available from the software for all devices for which it is applicable: current occupancy status, current PIR Status, current Microphonics Status, remaining occupancy time delay(s), current photocell reading, current photocell inhibiting state, photocell transitions time remaining, current dim level, device temperature, and device relay state(s).
C. The following device identification information shall be made available from the software: model number, model description, serial number, manufacturing date code, custom label(s), and parent network device.
D. A printable network inventory report shall be available via the software.
E. Software shall require all users to login with a User Name and Password.
F. Software shall provide at least three permission levels for users.
G. All sensitive stored information and privileged communication by the software shall be encrypted.
H. All device firmware and system software updates must be available for automatic download and installation via the internet.

2.6. START-UP FEATURES

A. To facilitate start-up, all devices daisy-chained together (using CAT-5) shall automatically be grouped together into a functional lighting control zone.
B. All lighting control zones shall be able to function according to default settings once adequate power is applied and before any system software is installed.
C. Once software is installed, system shall be able to auto-discover all system devices without requiring any commissioning.

D. All system devices shall be capable of being given user defined names.
E. All devices within the network shall be able to have their firmware reprogrammed remotely and without being physically uninstalled for purposes of upgrading functionality at a later date.
F. Contractor shall include in bid eight (8) hours of owner training for programming and configuration of software. Training of software shall be made by N Light ® Network Control system Certified Technician.
G. Contractor shall include in bid eight(8) hours of Training for installation of Nlight ® Network Control system. Training shall be made by nLight ®Network Control System Certified Technician.

END OF SECTION 16145

SECTION 16231-PACKAGED ENGINE GENERATOR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes packaged engine-generator sets for standby power supply with the following features:

1. Diesel engine.

2. Unit-mounted cooling system.

3. Unit-mounted control and monitoring.

4. Performance requirements for sensitive loads.

5. Load banks.

6. Outdoor enclosure.

B. Related Sections include the following:

1. Division 16 Section "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

1.3 DEFINITIONS

A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

B. LP: Liquid petroleum.

1.4 SUBMITTALS

A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:

1. Thermal damage curve for generator.

2. Time-current characteristic curves for generator protective device.

3. Tentative schedule for infrared and load tests.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.

2. Design Calculations: Signed and sealed by a qualified professional engineer. Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.

3. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.

4. Wiring Diagrams: Power, signal, and control wiring.

C. Qualification Data: For installer.

D. Source quality-control test reports.

1. Certified summary of prototype-unit test report.

2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.

3. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.

4. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.

5. Report of sound generation.

6. Report of exhaust emissions showing compliance with applicable regulations.

7. Certified Torsional Vibration Compatibility: Comply with NFPA 110.

E. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following:

1. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

F. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

1. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.

B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 200 miles (321 km) of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

C. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL), and that is acceptable to authorities having jurisdiction.

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

D. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

F. Comply with ASME B15.1.

G. Comply with NFPA 37.

H. Comply with NFPA 70.

I. Comply with NFPA 99.

J. Comply with NFPA 110 requirements for Level 1 emergency power supply system.

K. Comply with UL 2200.

L. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

M. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

1. Ambient Temperature: 5 to 40 deg C.

2. Relative Humidity: 0 to 95 percent.

3. Altitude: Sea level to 1000 feet (300 m).

1.7 COORDINATION

A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

B. Coordinate size and location of roof curbs, equipment supports, and roof penetrations for remote radiators. These items are specified in Division 7 Section "Roof Accessories."

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 5 years from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

C. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:

1. Generac Power Systems, Inc.

2. Kohler Co.; Generator Division.

3. Onan/Cummins Power Generation; Industrial Business Group.

2.2 ENGINE-GENERATOR SET

A. Factory-assembled and -tested, engine-generator set.

B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.

1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.

C. Capacities and Characteristics:

1. Power Output Ratings: Nominal ratings as indicated.

2. Output Connections: Three-phase, four wire.

3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.

D. Generator-Set Performance for Sensitive Loads:

1. Oversizing generator compared with the rated power output of the engine is permissible to meet specified performance.

a. Nameplate Data for Oversized Generator: Show ratings required by the Contract Documents rather than ratings that would normally be applied to generator size installed.

2. Steady-State Voltage Operational Bandwidth: 1 percent of rated output voltage from no load to full load.

3. Transient Voltage Performance: Not more than 10 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 0.5 second.

4. Steady-State Frequency Operational Bandwidth: Plus or minus 0.25 percent of rated frequency from no load to full load.

5. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

6. Transient Frequency Performance: Less than 2-Hz variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within three seconds.

7. Output Waveform: At no load, harmonic content measured line to neutral shall not exceed 2 percent total with no slot ripple. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.

8. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to winding insulation or other generator system components.

9. Excitation System: Performance shall be unaffected by voltage distortion caused by nonlinear load.

    a. Provide permanent magnet excitation for power source to voltage regulator.

10. Start Time: Comply with NFPA 110, Type 10, system requirements.

2.3 ENGINE

A. Fuel: ASTM D975 No. 2-D Grade diesel fuel.

B. Rated Engine Speed: 1800 rpm.

C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).

D. Lubrication System: The following items are mounted on engine or skid:

1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.

2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.

3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

E. Engine Fuel System:

1. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.

2. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.

F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.

G. Governor: Adjustable isochronous, with speed sensing.

H. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.

1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.

3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.

4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.

a. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.

b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

I. Cooling System: Closed loop, liquid cooled, with remote radiator and integral engine-driven coolant pump.

1. Configuration: Horizontal air discharge.

2. Radiator Core Tubes: Aluminum.

3. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.

4. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.

5. Fan: Driven by multiple belts from engine shaft.

6. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

7. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

J. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.

1. Minimum sound attenuation of 25 dB at 500 Hz.

2. Sound level measured at a distance of 21 feet (7 m) from exhaust discharge after installation is complete shall be 60 dBA or less.

K. Air-Intake Filter: Standard-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

L. Starting System: 24-V electric, with negative ground.

1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.

2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.

3. Cranking Cycle: As required by NFPA 110 for system level specified.

4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least twice without recharging.

5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.

6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in Part 1 "Project Conditions" Article. Include accessories required to support and fasten batteries in place.

7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.

8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:

a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-

charging mode and shall continue to operate in that mode until battery is discharged again.

b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.

c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.

d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.

e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.

f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

2.4 FUEL OIL STORAGE

A. Comply with NFPA 30.

B. Day Tank: Comply with UL 142, freestanding, factory-fabricated fuel tank assembly, with integral, float-controlled transfer pump and the following features:

1. Containment: Integral rupture basin with a capacity of 150 percent of nominal capacity of day tank.

a. Leak Detector: Locate in rupture basin and connect to provide audible and visual alarm in the event of day-tank leak.

2. Tank Capacity: As recommended by engine manufacturer for an uninterrupted period of 24 hours' operation at 100 percent of rated power output of engine-generator system without being refilled.

3. Pump Capacity: Exceeds maximum flow of fuel drawn by engine-mounted fuel supply pump at 110 percent of rated capacity, including fuel returned from engine.

4. Low-Level Alarm Sensor: Liquid-level device operates alarm contacts at 25 percent of normal fuel level.

5. High-Level Alarm Sensor: Liquid-level device operates alarm and redundant fuel shutoff contacts at midpoint between overflow level and 100 percent of normal fuel level.

6. Piping Connections: Factory-installed fuel supply and return lines from tank to engine; local fuel fill, vent line, overflow line; and tank drain line with shutoff valve.

7. Redundant High-Level Fuel Shutoff: Actuated by high-level alarm sensor in day tank to operate a separate motor device that disconnects day-tank pump motor. Sensor shall signal solenoid valve, located in fuel suction line between fuel storage tank and day tank, to close. Both actions shall remain in shutoff state until manually reset. Shutoff action shall initiate an alarm signal to control panel but shall not shut down engine-generator set.

C. Base-Mounted Fuel Oil Tank: Factory installed and piped, complying with UL 142 fuel oil tank. Features include the following:

1. Tank level indicator.

2. Capacity: Fuel for four hours' continuous operation at 100 percent rated power output.

3. Vandal-resistant fill cap.

4. Containment Provisions: Comply with requirements of authorities having jurisdiction.

2.5 CONTROL AND MONITORING

A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.

B. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.

C. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common wall-mounted control and monitoring panel.

D. Configuration: Operating and safety indications, protective devices, basic system controls, engine gages, instrument transformers, generator disconnect switch or circuit breaker, and other indicated components shall be grouped in a combination control and power panel. Control and monitoring section of panel shall be isolated from power sections by steel barriers. Retain one of first two paragraphs and associated subparagraphs below to specify minimum control and monitoring panel features. First is for standardized panels for automatically starting units. Second is for a typical manually operated generator system. Coordinate with Drawings. See Editing Instruction No. 9 in the Evaluations.

E. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:

1. AC voltmeter.

2. AC ammeter.

3. AC frequency meter.

4. DC voltmeter (alternator battery charging).

5. Engine-coolant temperature gage.

6. Engine lubricating-oil pressure gage.

7. Running-time meter.

8. Ammeter-voltmeter, phase-selector switch(es).

9. Generator-voltage adjusting rheostat.

10. Generator overload.

F. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

G. Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals. Data system connections to terminals are covered in Division 16 Section "Electrical Power Monitoring and Control."

H. Common Remote Audible Alarm: Signal the occurrence of any events listed below without differentiating between event types. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset.

1. Engine high-temperature shutdown.

2. Lube-oil, low-pressure shutdown.

3. Overspeed shutdown.

4. Remote emergency-stop shutdown.

5. Engine high-temperature prealarm.

6. Lube-oil, low-pressure prealarm.

7. Fuel tank, low-fuel level.

8. Low coolant level.

I. Remote Alarm Annunciator: Comply with NFPA 99. An LED labeled with proper alarm conditions shall identify each alarm event and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.

J. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

2.6 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Circuit Breaker: Molded-case, electronic-trip type; 100 percent rated; complying with UL 489.

1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.

2. Trip Settings: Selected to coordinate with generator thermal damage curve.

3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.

4. Mounting: Adjacent to or integrated with control and monitoring panel.

B. Generator Disconnect Switch: Molded-case type, 100 percent rated.

1. Rating: Matched to generator output rating.

2. Shunt Trip: Connected to trip switch when signaled by generator protector or by other protective devices.

C. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. When signaled by generator protector or other generator-set protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector shall perform the following functions:

1. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.

2. Under single or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.

3. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the generator set.

4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.

2.7 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Comply with NEMA MG 1.

B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

C. Electrical Insulation: Class H or Class F.

D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.

E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

F. Enclosure: Dripproof.

G. Instrument Transformers: Mounted within generator enclosure.

H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.

1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5 percent adjustment of output-voltage operating band.

I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.

J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

K. Subtransient Reactance: 12 percent, maximum.

2.8 OUTDOOR GENERATOR-SET ENCLOSURE

A. Description: Vandal-resistant, weatherproof steel housing, wind resistant up to 120 mph. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.

B. Description: Prefabricated or preengineered walk-in enclosure with the following features:

1. Construction: Galvanized-steel, metal-clad, integral structural-steel-framed building erected on concrete foundation.

2. Structural Design and Anchorage: Comply with ASCE 7 for wind loads.

3. Space Heater: Thermostatically controlled and sized to prevent condensation.

4. Louvers: Equipped with bird screen and filter arranged to permit air circulation when engine is not running while excluding exterior dust, birds, and rodents.

5. Hinged Doors: With padlocking provisions.

6. Ventilation: Louvers equipped with bird screen and filter arranged to permit air circulation while excluding exterior dust, birds, and rodents.

7. Thermal Insulation: Manufacturer's standard materials and thickness selected in coordination with space heater to maintain winter interior temperature within operating limits required by engine-generator-set components.

8. Muffler Location: Within enclosure.

C. Engine Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for 2 hours with ambient temperature at top of range specified in system service conditions.

1. Louvers: Fixed-engine, cooling-air inlet and discharge. Storm-proof and drainable louvers prevent entry of rain and snow.

2. Automatic Dampers: At engine cooling-air inlet and discharge. Dampers shall be closed to reduce enclosure heat loss in cold weather when unit is not operating.

D. Interior Lights with Switch: Factory-wired, vaporproof-type fixtures within housing; arranged to illuminate controls and accessible interior. Arrange for external electrical connection.

1. AC lighting system and connection point for operation when remote source is available.

2. DC lighting system for operation when remote source and generator are both unavailable.

E. Convenience Outlets: Factory wired, GFCI. Arrange for external electrical connection.

2.9 MOTORS

A. General requirements for motors are specified in Division 15 Section "Motors."

1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

2. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in Division 16 Sections.

2.10 VIBRATION ISOLATION DEVICES

A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.

1. Material: Standard neoprene.

2. Durometer Rating: 30.

3. Number of Layers: One.

B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.

1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch- (6-mm-) thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.

2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.

3. Minimum Additional Travel: 50 percent of required deflection at rated load.

4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.

5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.11 FINISHES

A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

2.12 SOURCE QUALITY CONTROL

A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.

1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.

B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:

1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.

2. Full load run.

3. Maximum power.

4. Voltage regulation.

5. Transient and steady-state governing.

6. Single-step load pickup.

7. Safety shutdown.

8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.

9. Report factory test results within 10 days of completion of test.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.

B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.

B. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

C. Install packaged engine generator with elastomeric isolator pads having a minimum deflection of 1 inch (25 mm) on 4-inch- (100-mm-) high concrete base. Secure sets to anchor bolts installed in concrete bases. Concrete base construction is specified in Division 16 Section "Electrical Supports and Seismic Restraints."

D. Install remote radiator with elastomeric isolator pads having a minimum deflection of 1 inch (25 mm) on concrete base on grade.

E. Install Schedule 40, black steel piping with welded joints for cooling water piping between engine-generator set and heat exchanger. Piping materials and installation requirements are specified in Division 15 Section "Hydronic Piping."

F. Install Schedule 40, black steel piping with welded joints and connect to engine muffler. Install thimble at wall. Piping shall be same diameter as muffler outlet. Flexible connectors and steel piping materials and installation requirements are specified in Division 15 Section "Hydronic Piping."

1. Install condensate drain piping to muffler drain outlet full size of drain connection with a shutoff valve, stainless-steel flexible connector, and Schedule 40, black steel pipe with

welded joints. Flexible connectors and piping materials and installation requirements are specified in Division 15 Section "Hydronic Piping."

G. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

3.3 CONNECTIONS

A. Piping installation requirements are specified in Division 15 Sections. Drawings indicate general arrangement of piping and specialties.

B. Connect fuel, cooling-system, and exhaust-system piping adjacent to packaged engine generator to allow service and maintenance.

C. Connect cooling-system water piping to engine-generator set and heat exchanger with flexible connectors.

D. Connect engine exhaust pipe to engine with flexible connector.

E. Connect fuel piping to engines with a gate valve and union and flexible connector.

1. Diesel storage tanks, tank accessories, piping, valves, and specialties for fuel systems outside the building are specified in Division 2 Section "Fuel Oil Distribution."

2. Diesel fuel piping, valves, and specialties inside the building are specified in Division 15 Section "Fuel Oil Piping."

3. Natural- and LP-gas piping, valves, and specialties for gas distribution outside the building are specified in Division 2 Section "Natural Gas Distribution."

4. Natural- and LP-gas piping, valves, and specialties for gas piping inside the building are specified in Division 15 Section "Fuel Gas Piping."

F. Ground equipment according to Division 16 Section "Grounding and Bonding."

G. Connect wiring according to Division 16 Section "Conductors and Cables."

3.4 IDENTIFICATION

A. Identify system components according to Division 15 Section "Mechanical Identification" and Division 16 Section "Electrical Identification."

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.

C. Perform tests and inspections and prepare test reports.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

D. On site Tests and Inspections:

1. Perform tests recommended by manufacturer and each electrical test and visual and mechanical inspection (except those indicated to be optional) for "AC Generators and for Emergency Systems" specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.

2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.

3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.

a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.

b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.

c. Verify acceptance of charge for each element of the battery after discharge.

d. Verify that measurements are within manufacturer's specifications.

4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.

5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.

6. Exhaust Emissions Test: Comply with applicable government test criteria.

7. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.

8. Harmonic-Content Tests: Measure harmonic content of output voltage under 25 percent and at 100 percent of rated linear load. Verify that harmonic content is within specified limits.

9. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at four locations on the property line, and compare measured levels with required values.

E. Coordinate tests with tests for transfer switches and run them concurrently.

F. Test instruments shall have been calibrated within the last 12 months, traceable to standards of NIST, and adequate for making positive observation of test results. Make calibration records available for examination on request.

G. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

H. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.

I. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

J. Remove and replace malfunctioning units and retest as specified above.

K. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

L. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

M. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each power wiring termination and each bus connection. Remove all access panels so terminations and connections are accessible to portable scanner.

1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 11 months after date of Substantial Completion.

2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

3. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

## 3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Division 1 Section "Demonstration and Training."

END OF SECTION 16231

SECTION 16289- SURGE PROTECTION DEVICES DEVICE

PART 1 -GENERAL

1.1 RELATED DOCUMENTS

A Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A This Section includes SPD's for low-voltage power, control, and communication

equipment. B. Related Sections include the following:

1. Division 16 Section "Wiring Devices" for devices with integral SPD's.
2. Division 16 Section "Panelboards" for factory-installed SPD's.

1.3 DEFINITIONS

A ATS: Acceptance Testing Specifications.

B. VPR: Voltage Protection Rating

C. SPD: Surge Protection Device

1.4 SUBMITTALS

A Product Data: For each type of product indicated. Include rated capacities, operating weights, operating characteristics, furnished specialties, and accessories.

B. Product Certificates: For transient voltage suppression devices, signed by product manufacturer certifying compliance with the following standards:

1. UL1283.
2. UL 1449 3rd Edition.
3. RoHS Compliant

C. Qualification Data: For testing agency.

D. Field quality-control test reports, including the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Failed test results and corrective action taken to achieve requirements.

E. Operation and Maintenance Data: For transient voltage suppression devices to include in operation, and maintenance manuals.

F. Warranties: Special warranties specified in this Section.

G. Provide detailed compliance or exception statements to all provisions of this

specification. Additionally, manufacturers shall submit independent test data from a nationally recognized testing laboratory verifying the following. Failure to do so will result in product disapproval.

1. Life cycle testing.
2. Overcurrent protection, when specified.
3. UL 1449 3rd Edition TVSS ratings, with UL test report file number.
4. Noise Attenuation.
5. Single impulse surge current capacity, ANSI.IEE C62.41-1991 standards. Provide third party testing reports proving compliance, failure to do so will result in product being rejected.
6. End of life mode testing, Minimum repetitive surge current capacity testing based on ANSI/IEEE C62.45-1987 Standards. Provide third party testing reports proving compliance, failure to do so will result in product being rejected.
7. NEMA standard LS-1-1992 testing data and unit performance ratings.
8. Blank copy of Factory start up and diagnostic test report to be included in the Electrical Operations and Maintenance Manual.
9. Line by line specification review indicating compliance or deviation. Deviation shall include full description of the deviation.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain suppression devices and accessories through one source from a single manufacturer.

B. Product Options: Drawings indicate size, dimensional requirements, and electrical performance of suppressors and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with IEEE C62.41, "IEEE Guide for Surge Voltages in Low Voltage AC Power Circuits," and test devices according to IEEE C62.45, "IEEE Guide on Surge Testing for Equipment Connected to Low-Voltage AC Power Circuits."

E. Comply with NEMA LS 1, "Low Voltage Surge Protection Devices."

F. Comply with UL 1283, "Electromagnetic Interference Filters," and UL 1449, "Transient Voltage Surge Suppressors."

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

B. Service Conditions: Rate surge protection devices for continuous operation under the following conditions, unless otherwise indicated:

1. Maximum Continuous Operating Voltage: Not less than 115 percent of nominal system operating voltage.
2. Operating Temperature: 30 to 120 deg F (0 to 50 deg C).
3. Humidity: 0 to 85 percent, noncondensing.
4. Altitude: Less than20,000 feet (6090 m) above sea level.

1.7 COORDINATION

A. Coordinate location of field-mounted surge suppressors to allow adequate clearances for maintenance.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of surge suppressors that fail in materials, workmanship, as well as lighting strikes and single phasing, within 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Current Technology Inc.
2. Liebert Corporation; a division of Emerson

2.2 SUPPRESSORS FOR SERVICE ENTRANCE (TYPE A) Type 1 Rated

A. Surge Protection Device Description: Modular or non-modular design with the following features and accessories:
1. LED indicator lights for power and protection status.
2. Audible alarm, with silencing switch, to indicate where protection has failed.
3. One set of dry contacts rated at 5 A and 250-V ac, for remote monitoring of protection status.
4. Surge-event operations counter.
5. Integral Disconnect capable of withstanding, without failure, the published maximum surge current magnitude without failure or damage to the switch

B. Peak Single-Impulse Surge Current Rating: 250 kA per Mode.

C. Connection Means: Permanently wired to the line side of the main service disconnect.

D. Protection modes and UL 1449, Third edition, VPR for grounded wye circuits with voltages of 480Y/277, 3-phase, 4-wire circuits shall be as follows:
1. Line to Neutral: 1200Vfor480Y/277.
2. Line to Ground: 1200 V for 480Y/277.
3. Neutral to Ground: 1000V for 480Y/277.
4. Line to Line: 2000 V for 480Y/277.

2.3 SUPPRESSORS FOR DISTRIBUTION PANEL (TYPE B) Type 1 Rated

A. Surge Protection Device Description: Modular or non-modular design with the following features and accessories:
1. LED indicator lights for power and protection status.
2. Audible alarm, with silencing switch, to indicate when protection has failed.

3. One set of dry contacts rated at 5 A and 250-V ac, for remote monitoring of protection status.
4. Surge-event operations counter.

B. Peak Single-Impulse Surge Current Rating: 150 kA per mode.

C. Connection Means: Permanently wired.

D. Protection modes and UL 1449, Third edition, VPR for grounded wye circuits, 3-phase, 4-wire circuits shall be as follows:
1. Line to Neutral: 1200 V for 480Y/277, or 700 V for 208Y/120.
2. Line to Ground: 1200 V for 480Y/277, or 700 V for 208Y/120.
3. Neutral to Ground: 1000V for 480Y/277, or 700 V for 208Y/120.
4. Line to Line: 2000 V for 480Y/277, or 1200 V for 208Y/120.

2.4 SUPPRESSORS FOR ELECTRONIC-GRADE PANELBOARDS (TYPE C) Type 1 or 2 rated

A. Surge Protection Device Description: Sine-wave-tracking type, modular or non-modular design with the following features and accessories:
1. LED indicator lights for power and protection status.
2. Audible alarm, with silencing switch, to indicate when protection has failed.
3. One set of dry contacts rated at 5 A and 250-V ac, for remote monitoring of protection status.
4. Surge-event operations counter.

B. Peak Single-Impulse Surge Current Rating: 100 kA per mode.

C. Protection modes and UL 1449, Third edition, VPR for grounded wye circuits with voltages of 208Y/120, 3-phase, 4-wire circuits shall be as follows:
1. Line to Neutral: 700 V for 208Y/120.
2. Line to Ground: 700 V for 208Y/120.
3. Neutral to Ground: 700 V for 208Y/120.
4. Line to Line: 1200 V for 208Y/120.

2.5 ENCLOSURES

A. NEMA 250, with type matching the enclosure of panel or device being protected.

B. Panelboard PX3 extension series shall be NEMA 1. TG3 series units shall be NEMA 4 Enclosure.

PART 3 - EXECUTION

3.1 INSTALLATION OF SURGE PROTECTION DEVICES

A. The unit shall be installed as close as practical to the facilities wiring system in accordance with applicable national/local electrical codes and the manufacturer's recommended installation instructions. Connection shall be as short as possible, use a low impedance cable (HPI). Minimum wire size and overcurrent protection shall be provided and as recommended by the manufacturer. Units specified on plans for panel boards, mount directly above or below panel board to be protected.

B. Install devices at service entrance on load side, with ground lead bonded to service entrance ground.

C. Install devices for panel board and auxiliary panels with conductors or buses between suppressor and points of attachment as short and straight as possible to the circuit breaker, neutral and grounding bar. Furnish and install all leads with the same length. Do not exceed manufacturer's recommended lead length.

1. Connect to panel board with the largest breaker size available or indicated on panel board schedules for transient voltage surge suppression. Breaker shall be sized per the TVSS manufacturers' installation instructions.

3.2 PLACING SYSTEM INTO SERVICE

A Do not energize or connect panel boards to their sources until surge protection devices are installed and connected.

3.3 FIELD QUALITY CONTROL

A Manufacturer's Field Service: Engage a factory-authorized service representative to inspect equipment installation, including connections. Report results in writing.
1. Verify that electrical wiring installation complies with manufacturer's written installation requirements.

B. Testing: Perform the following field tests and inspections and prepare test reports:
1. After installing surge protection devices, but before electrical circuitry has been energized, test for compliance with manufacturers' requirements using diagnostic test kit .
2. Complete startup checks according to manufacturer's written instructions.
3. Record information to a product signature card for each product installed, report testing results to the engineer via a written report.

C. Remove and replace malfunctioning units and retest as specified above.

3.4 DEMONSTRATION

A Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain transient voltage suppression devices. Refer to Division 1 Section "Closeout Procedures."

END OF SECTION 16289

SECTION 16410 -ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following individually mounted, enclosed switches and circuit breakers:

1. Fusible switches.

2. Nonfusible switches.

3. Bolted-pressure contact switches.

4. High-pressure, butt-type contact switches.

5. Molded-case switches.

6. Enclosures.

1.3 DEFINITIONS

A. GD: General duty.

B. GFCI: Ground-fault circuit interrupter.

C. HD: Heavy duty.

D. RMS: Root mean square.

E. SPDT: Single pole, double throw.

1.4 SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

1. Enclosure types and details for types other than NEMA 250, Type 1.

2. Current and voltage ratings.

3. Short-circuit current rating.

4. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Qualification Data: For testing agency.

D. Field quality-control test reports including the following:

1. Test procedures used.

2. Test results that comply with requirements.

3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

E. Manufacturer's field service report.

F. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Closeout Procedures," include the following:

1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.

2. Time-current curves, including selectable ranges for each type of circuit breaker.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions, unless otherwise indicated:

1. Ambient Temperature: Not less than minus 22 deg F (minus 30 deg C) and not exceeding 104 deg F (40 deg C).

2. Altitude: Not exceeding 6600 feet (2010 m).

1.7 COORDINATION

A. Coordinate layout and installation of switches, circuit breakers, and components with other construction, including conduit, piping, equipment, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Spares: For the following:

a. Potential Transformer Fuses: Three.

b. Control-Power Fuses: Three of each type.

c. Fuses for Fusible Switches: Refer to division 16 “Fuses”.

d. Fuses for Fused Power Circuit Devices: Refer to division 16 “Fuses”.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 FUSIBLE AND NONFUSIBLE SWITCHES

A. Available Manufacturers:

1. General Electric Co.; Electrical Distribution & Control Division.

2. Siemens Energy & Automation, Inc.

3. Square D/Group Schneider.

B. Fusible Switch, 600 A and Smaller: NEMA KS 1, Type HD, with clips or bolt pads to accommodate specified fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

C. Nonfusible Switch, 600 A and Smaller: NEMA KS 1, Type HD, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

D. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.

2. Neutral Kit: Internally mounted; insulated, capable of being grounded, and bonded; and labeled for copper and aluminum neutral conductors.

3. Auxiliary Contact Kit: Auxiliary set of contacts arranged to open before switch blades open.

2.3 ENCLOSURES

A. NEMA AB 1 and NEMA KS 1 to meet environmental conditions of installed location.

1. Outdoor Locations: NEMA 250, Type 3R.

2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.

3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CONCRETE BASES

A. Coordinate size and location of concrete bases. Verify structural requirements with structural engineer.

B. Concrete base is specified in Division 16 Section "Electrical Supports and Seismic Restraints," and concrete materials and installation requirements are specified in Division 3.

3.3 INSTALLATION

A. Comply with applicable portions of NECA 1, NEMA PB 1.1, and NEMA PB 2.1 for installation of enclosed switches and circuit breakers.

B. Mount individual wall-mounting switches and circuit breakers with tops at uniform height, unless otherwise indicated. Anchor floor-mounting switches to concrete base.

C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

3.4 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 16 Section "Electrical Identification."

B. Enclosure Nameplates: Label each enclosure with engraved metal or laminated-plastic nameplate as specified in Division 16 Section "Electrical Identification."

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Prepare for acceptance testing as follows:

1. Inspect mechanical and electrical connections.

2. Verify switch and relay type and labeling verification.

3. Verify rating of installed fuses.

C. Perform the following field tests and inspections and prepare test reports:

1. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

2. Infrared Scanning:

a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each enclosed switch and circuit breaker. Open or remove doors or panels so connections are accessible to portable scanner.

b. Instruments, Equipment and Reports:

1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

2) Prepare a certified report that identifies enclosed switches and circuit breakers included and describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.6 ADJUSTING

A. Set field-adjustable switches and circuit-breaker trip ranges.

3.7 CLEANING

A. On completion of installation, vacuum dirt and debris from interiors; do not use compressed air to assist in cleaning.

B. Inspect exposed surfaces and repair damaged finishes.

END OF SECTION 16410

# SECTION 16415- TRANSFER SWITCHES

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes transfer switches rated 600 V and less, including the following:

1. Automatic transfer switches.

2. Bypass/isolation switches.

3. Nonautomatic transfer switches.

4. Remote annunciation systems.

5. Remote annunciation and control systems.

### 1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, weights, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings: Dimensioned plans, elevations, sections, and details showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.

1. Single-Line Diagram: Show connections between transfer switch, bypass/isolation switch, power sources, and load; and show interlocking provisions for each combined transfer switch and bypass/isolation switch.

C. Qualification Data: For manufacturer.

D. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Operation and Maintenance Data," include the following:

1. Features and operating sequences, both automatic and manual.

2. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Maintain a service center capable of providing training, parts, and emergency maintenance repairs within a response period of less than eight hours from time of notification.

B. Source Limitations: Obtain automatic transfer switches bypass/isolation switches remote annunciator and control panels through one source from a single manufacturer.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with NEMA ICS 1.

E. Comply with NFPA 70.

F. Comply with NFPA 99.

G. Comply with NFPA 110.

H. Comply with UL 1008 unless requirements of these Specifications are stricter.

1.5 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Contactor Transfer Switches:

a. Generac Power Systems, Inc.

b. Kohler Co: Generation Division

c. Onan/Cummins Power Generation; Industrial Business Group.

2. Transfer Switches Using Molded-Case Switches or Circuit Breakers:

a. Eaton Electrical Inc.; Cutler-Hammer.

b. Hubbell Industrial Controls, Inc.

2.2 GENERAL TRANSFER-SWITCH PRODUCT REQUIREMENTS

A. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.

B. Tested Fault-Current Closing and Withstand Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.

1. Where transfer switch includes internal fault-current protection, rating of switch and trip unit combination shall exceed indicated fault-current value at installation location.

C. Solid-State Controls: Repetitive accuracy of all settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.

D. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.41. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.

E. Electrical Operation: Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism, mechanically and electrically interlocked in both directions.

F. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.

1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components are not acceptable.

2. Switch Action: Double throw; mechanically held in both directions.

3. Contacts: Silver composition or silver alloy for load-current switching. Conventional automatic transfer-switch units, rated 225 A and higher, shall have separate arcing contacts.

G. Neutral Terminal: Solid and fully rated, unless otherwise indicated.

H. Oversize Neutral: Ampacity and switch rating of neutral path through units indicated for oversize neutral shall be double the nominal rating of circuit in which switch is installed.

I. Heater: Equip switches exposed to outdoor temperatures and humidity, and other units indicated, with an internal heater. Provide thermostat within enclosure to control heater.

J. Battery Charger: For generator starting batteries.

1. Float type rated 2 A.

2. Ammeter to display charging current.

3. Fused ac inputs and dc outputs.

K. Annunciation, Control, and Programming Interface Components: Devices at transfer switches for communicating with remote programming devices, annunciators, or annunciator and control panels shall have communication capability matched with remote device.

L. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, either by color-code or by numbered or lettered wire and cable tape markers at terminations. Color-coding and wire and cable tape markers are specified in Division 16 Section "Electrical Identification."

1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.

2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.

3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.

2.3 AUTOMATIC TRANSFER SWITCHES

A. Comply with Level 1 equipment according to NFPA 110.

B. Switching Arrangement: Double-throw type, incapable of pauses or intermediate position stops during normal functioning, unless otherwise indicated.

C. Manual Switch Operation: Under load, with door closed and with either or both sources energized. Transfer time is same as for electrical operation. Control circuit automatically disconnects from electrical operator during manual operation.

D. In-Phase Monitor: Factory-wired, internal relay controls transfer so it occurs only when the two sources are synchronized in phase. Relay compares phase relationship and frequency difference between normal and emergency sources and initiates transfer when both sources are within 15 electrical degrees, and only if transfer can be completed within 60 electrical degrees. Transfer is initiated only if both sources are within 2 Hz of nominal frequency and 70 percent or more of nominal voltage.

E. Motor Disconnect and Timing Relay: Controls designate starters so they disconnect motors before transfer and reconnect them selectively at an adjustable time interval after transfer. Control connection to motor starters is through wiring external to automatic transfer switch. Time delay for reconnecting individual motor loads is adjustable between 1 and 60 seconds, and settings are as indicated. Relay contacts handling motor-control circuit inrush and seal currents are rated for actual currents to be encountered.

F. Programmed Neutral Switch Position: Switch operator has a programmed neutral position arranged to provide a midpoint between the two working switch positions, with an intentional, time-controlled pause at midpoint during transfer. Pause is adjustable from 0.5 to 30 seconds minimum and factory set for 0.5 second, unless otherwise indicated. Time delay occurs for both transfer directions. Pause is disabled unless both sources are live.

G. Automatic Transfer-Switch Features:

1. Undervoltage Sensing for Each Phase of Normal Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage is adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.

2. Adjustable Time Delay: For override of normal-source voltage sensing to delay transfer and engine start signals. Adjustable from zero to six seconds, and factory set for one second.

3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.

4. Time Delay for Retransfer to Normal Source: Adjustable from 0 to 30 minutes, and factory set for 10 minutes to automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.

5. Test Switch: Simulate normal-source failure.

6. Switch-Position Pilot Lights: Indicate source to which load is connected.

7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.

   a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."

   b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."

8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.

9. Transfer Override Switch: Overrides automatic retransfer control so automatic transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.

10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.

11. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.

12. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers

and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods are adjustable from 10 to 30 minutes. Factory settings are for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:

a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.

b. Push-button programming control with digital display of settings.

c. Integral battery operation of time switch when normal control power is not available.

2.4 BYPASS/ISOLATION SWITCHES

A. Comply with requirements for Level 1 equipment according to NFPA 110.

B. Description: Manual type, arranged to select and connect either source of power directly to load, isolating transfer switch from load and from both power sources. Include the following features for each combined automatic transfer switch and bypass/isolation switch:

1. Means to lock bypass/isolation switch in the position that isolates transfer switch with an arrangement that permits complete electrical testing of transfer switch while isolated. While isolated, interlocks prevent transfer-switch operation, except for testing or maintenance.

2. Drawout Arrangement for Transfer Switch: Provide physical separation from live parts and accessibility for testing and maintenance operations.

3. Bypass/Isolation Switch Current, Voltage, Closing, and Short-Circuit Withstand Ratings: Equal to or greater than those of associated automatic transfer switch, and with same phase arrangement and number of poles.

4. Contact temperatures of bypass/isolation switches shall not exceed those of automatic transfer-switch contacts when they are carrying rated load.

5. Operability: Constructed so load bypass and transfer-switch isolation can be performed by 1 person in no more than 2 operations in 15 seconds or less.

6. Legend: Manufacturer's standard legend for control labels and instruction signs shall describe operating instructions.

7. Maintainability: Fabricate to allow convenient removal of major components from front without removing other parts or main power conductors.

C. Interconnection of Bypass/Isolation Switches with Automatic Transfer Switches: Factory-installed copper bus bars; plated at connection points and braced for the indicated available short-circuit current.

## 2.5 REMOTE ANNUNCIATOR SYSTEM

A. Functional Description: Remote annunciator panel shall annunciate conditions for indicated transfer switches. Annunciation shall include the following:

1. Sources available, as defined by actual pickup and dropout settings of transfer-switch controls.

2. Switch position.

3. Switch in test mode.

4. Failure of communication link.

B. Annunciator Panel: LED-lamp type with audible signal and silencing switch.

1. Indicating Lights: Grouped for each transfer switch monitored.

2. Label each group, indicating transfer switch it monitors, location of switch, and identity of load it serves.

3. Mounting: Flush, modular, steel cabinet, unless otherwise indicated.

4. Lamp Test: Push-to-test or lamp-test switch on front panel.

C. Malfunction of annunciator, annunciation and control panel, or communication link shall not affect functions of automatic transfer switch. In the event of failure of communication link, automatic transfer switch automatically reverts to stand-alone, self-contained operation. Automatic transfer-switch sensing, controlling, or operating function shall not depend on remote panel for proper operation.

D. Remote Annunciation and Control Panel: Solid-state components. Include the following features:

1. Controls and indicating lights grouped together for each transfer switch.

2. Label each indicating light control group. Indicate transfer switch it controls, location of switch, and load it serves.

3. Digital Communication Capability: Matched to that of transfer switches supervised.

4. Mounting: Flush, modular, steel cabinet, unless otherwise indicated.

## 2.6 SOURCE QUALITY CONTROL

A. Factory test and inspect components, assembled switches, and associated equipment. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Floor-Mounting Switch: Anchor to floor by bolting.

1. Concrete Bases: 4 inches (100 mm) high, reinforced, with chamfered edges. Extend base no more than 4 inches (100 mm) in all directions beyond the maximum dimensions of switch, unless otherwise indicated or unless required for seismic support. Construct concrete bases according to Division 16 Section "Electrical Supports and Seismic Restraints."

B. Annunciator and Control Panel Mounting: Flush in wall, unless otherwise indicated.

C. Identify components according to Division 16 Section "Electrical Identification."

D. Set field-adjustable intervals and delays, relays, and engine exerciser clock.

3.2 CONNECTIONS

A. Wiring to Remote Components: Match type and number of cables and conductors to control and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.

B. Ground equipment according to Division 16 Section "Grounding and Bonding."

C. Connect wiring according to Division 16 Section "Conductors and Cables."

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified independent testing and inspecting agency to perform tests and inspections and prepare test reports.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.

C. Perform tests and inspections and prepare test reports.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installation, including connections, and to assist in testing.

2. After installing equipment and after electrical circuitry has been energized, test for compliance with requirements.

3. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

4. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.

    a. Check for electrical continuity of circuits and for short circuits.

    b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.

    c. Verify that manual transfer warnings are properly placed.

    d. Perform manual transfer operation.

5. After energizing circuits, demonstrate interlocking sequence and operational function for each switch at least three times.

    a. Simulate power failures of normal source to automatic transfer switches and of emergency source with normal source available.

    b. Simulate loss of phase-to-ground voltage for each phase of normal source.

    c. Verify time-delay settings.

    d. Verify pickup and dropout voltages by data readout or inspection of control settings.

    e. Test bypass/isolation unit functional modes and related automatic transfer-switch operations.

    f. Perform contact-resistance test across main contacts and correct values exceeding 500 microhms and values for 1 pole deviating by more than 50 percent from other poles.

    g. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

6. Ground-Fault Tests: Coordinate with testing of ground-fault protective devices for power delivery from both sources.

    a. Verify grounding connections and locations and ratings of sensors.

D. Testing Agency's Tests and Inspections:

1. After installing equipment and after electrical circuitry has been energized, test for compliance with requirements.

2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

3. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.

    a. Check for electrical continuity of circuits and for short circuits.

    b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.

    c. Verify that manual transfer warnings are properly placed.

    d. Perform manual transfer operation.

4. After energizing circuits, demonstrate interlocking sequence and operational function for each switch at least three times.

    a. Simulate power failures of normal source to automatic transfer switches and of emergency source with normal source available.

    b. Simulate loss of phase-to-ground voltage for each phase of normal source.

    c. Verify time-delay settings.

    d. Verify pickup and dropout voltages by data readout or inspection of control settings.

    e. Test bypass/isolation unit functional modes and related automatic transfer-switch operations.

    f. Perform contact-resistance test across main contacts and correct values exceeding 500 microhms and values for 1 pole deviating by more than 50 percent from other poles.

    g. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

5. Ground-Fault Tests: Coordinate with testing of ground-fault protective devices for power delivery from both sources.

    a. Verify grounding connections and locations and ratings of sensors.

E. Coordinate tests with tests of generator and run them concurrently.

F. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach a label or tag to each tested component indicating satisfactory completion of tests.

G. Remove and replace malfunctioning units and retest as specified above.

H. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switch. Remove all access panels so joints and connections are accessible to portable scanner.

1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.

2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

3. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.4 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment as specified below. Refer to Division 1 Section "Demonstration and Training."

B. Coordinate this training with that for generator equipment.

END OF SECTION 16415

# SECTION 16442-PANELBOARDS

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. This Section includes the following:

1. Distribution panelboards.
2. Lighting and appliance branch-circuit panelboards.
3. Load centers.
4. Transient voltage suppression panelboards.

### 1.3 DEFINITIONS

A. EMI: Electromagnetic interference.

B. GFCI: Ground-fault circuit interrupter.

C. RFI: Radio-frequency interference.

D. RMS: Root mean square.

E. SPDT: Single pole, double throw.

### 1.4 SUBMITTALS

A. Product Data: For each type of panelboard, overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:

a. Enclosure types and details for types other than NEMA 250, Type 1.

b. Bus configuration, current, and voltage ratings.

c. Short-circuit current rating of panelboards and overcurrent protective devices.

d. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

2. Wiring Diagrams: Power, signal, and control wiring.

C. Qualification Data: For testing agency.

D. Field quality-control test reports including the following:

1. Test procedures used.

2. Test results that comply with requirements.

3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

E. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

F. Operation and Maintenance Data: For panelboards and components to include in operation and maintenance manuals. In addition to items specified in Division 1 Section " Closeout Procedures," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.

2. Time-current curves, including selectable ranges for each type of overcurrent protective device.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories through one source from a single manufacturer.

B. Product Options: Drawings indicate size, profiles, and dimensional requirements of panelboards and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with NEMA PB 1.

E. Comply with NFPA 70.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions, unless otherwise indicated:

1. Ambient Temperature: Not exceeding 104 deg F (40 deg C).

2. Altitude: Not exceeding 6600 feet (2000 m).

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.

2. Altitude not exceeding 6600 feet (2000 m).

C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:

1. Notify Owner no fewer than ten working days in advance of proposed interruption of electrical service.

2. Do not proceed with interruption of electrical service without Owner's written permission.

1.7 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to workspace clearance requirements.

B. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Keys: Six spares for each type of panelboard cabinet lock.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Panelboards, Overcurrent Protective Devices, Controllers, Contactors, and Accessories:

a. General Electric Co.; Electrical Distribution & Protection Div.

b. Siemens Energy & Automation, Inc.

c. Cutler Hammer; Eaton

2. Surge Protection Devices Panelboards:

a. Refer to division 16 Section “Surge Protection Devices”.

2.2 MANUFACTURED UNITS

A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 16 Section "Electrical Supports and Seismic Restraints."

B. Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1.

1. Rated for environmental conditions at installed location.

a. Outdoor Locations: NEMA 250, Type 3R.

b. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.

2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.

4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.

5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.

6. Column-Type Panelboards: Narrow gutter extension, with cover, to overhead junction box equipped with ground and neutral terminal buses.

7. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.

8. Directory Card: With transparent protective cover, mounted in metal frame, inside panelboard door.

C. Phase and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity.

2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

3. Isolated Equipment Ground Bus: Adequate for branch-circuit equipment ground conductors; insulated from box.

4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.

5. Split Bus: Vertical buses divided into individual vertical sections.

D. Conductor Connectors: Suitable for use with conductor material.

1. Main and Neutral Lugs: Mechanical type.

2. Ground Lugs and Bus Configured Terminators: Compression type.

3. Feed-Through Lugs: Mechanical type suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.

4. Extra-Capacity Neutral Lugs: Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Service Equipment Label: UL labeled for use as service equipment for panelboards with main service disconnect switches.

F. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

2.3 PANELBOARD SHORT-CIRCUIT RATING

A. Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.4 DISTRIBUTION PANELBOARDS

A. Doors: Secured with vault-type latch with tumbler lock; keyed alike. Omit for fused-switch panelboards. Panels shall have hinged cover to open panel over terminations with out removal of cover.

B. Main Overcurrent Protective Devices: Circuit breaker.

C. Branch Overcurrent Protective Devices:

1. For Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

2. For Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers.

2.5 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

B. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.6 OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker: UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 149 A and SMALLER.

2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

3. Electronic trip-unit circuit breakers shall have RMS sensing; field-replaceable rating plug; and with the following field-adjustable settings, for circuit breakers 150 A and larger.

   a. Instantaneous trip.

   b. Long- and short-time pickup levels.

   c. Long- and short-time time adjustments.

   d. Ground-fault pickup level, time delay, and $I^2t$ response.

B. Molded-Case Circuit-Breaker Features and Accessories: Standard frame sizes, trip ratings, and number of poles.

1. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.

2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.

3. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.

4. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 55 percent of rated voltage.

5. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage with field-adjustable 0.1- to 0.6-second time delay.

6. Auxiliary Contacts: Two SPDT switches with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.

7. Key Interlock Kit: Externally mounted to prohibit circuit-breaker operation; key shall be removable only when circuit breaker is in off position.

8. Zone-Selective Interlocking: Integral with electronic trip unit; for interlocking ground-fault protection function.

9. Multipole units enclosed in a single housing or factory-assembled to operate as a single unit.

C. Fuses are specified in Division 16 Section "Fuses."

## 2.7 ACCESSORY COMPONENTS AND FEATURES

A. All panel boards shall have a hinged cover that allows access to breaker terminals without removing cover.

# PART 3 - EXECUTION

## 3.1 INSTALLATION

A. Install panelboards and accessories according to NEMA PB 1.1.

B. Mount top of trim 74 inches (1880 mm) above finished floor, unless otherwise indicated.

C. Mount plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

D. Install overcurrent protective devices and controllers.

1. Set field-adjustable switches and circuit-breaker trip ranges per coordination study.

E. Install filler plates in unused spaces.

F. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch (27-GRC) empty conduits into raised floor space or below slab not on grade.

G. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 16 Section "Electrical Identification."

B. Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

3.3 CONNECTIONS

A. Ground equipment according to Division 16 Section "Grounding and Bonding."

B. Connect wiring according to Division 16 Section "Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Prepare for acceptance tests as follows:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.

2. Test continuity of each circuit.

B. Perform the following field tests and inspections and prepare test reports:

1. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Section 7.5 for switches and Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.

2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

C. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

1. Measure as directed during period of normal system loading.

2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.

3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.

4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

D. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scanning of each panelboard. Remove panel fronts so joints and connections are accessible to portable scanner.

1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

2. Record of Infrared Scanning: Prepare a certified report that identifies panelboards checked and describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

## 3.5 CLEANING

A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 16442

SECTION 16491-FUSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Cartridge fuses rated 600 V and less for use in switches, controllers, and control transformers.

2. Spare-fuse cabinets.

1.3 SUBMITTALS

A. Product Data: Include the following for each fuse type indicated:

1. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.

2. Let-through current curves for fuses with current-limiting characteristics.

3. Time-current curves, coordination charts and tables, and related data.

4. Fuse size for elevator feeders and elevator disconnect switches.

B. Ambient Temperature Adjustment Information: If ratings of fuses have been adjusted to accommodate ambient temperatures, provide list of fuses with adjusted ratings.

1. For each fuse having adjusted ratings, include location of fuse, original fuse rating, local ambient temperature, and adjusted fuse rating.

2. Provide manufacturer's technical data on which ambient temperature adjustment calculations are based.

C. Operation and Maintenance Data: For fuses to include in operation and maintenance manuals.

1. In addition to items specified in Division 1 Section "Closeout Procedures," include the following:

a. Let-through current curves for fuses with current-limiting characteristics.

b. Time-current curves, coordination charts and tables, and related data.

c. Ambient temperature adjustment information.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain fuses from a single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NEMA FU 1.

D. Comply with NFPA 70.

1.5 PROJECT CONDITIONS

A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F (5 deg C) or more than 100 deg F (38 deg C), apply manufacturer's ambient temperature adjustment factors to fuse ratings.

1.6 COORDINATION

A. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fuses: Quantity equal to 10 percent of each fuse type and size, but no fewer than three of each type and size.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper Bussman, Inc.

2. Eagle Electric Mfg. Co., Inc.; Cooper Industries, Inc.

3. Ferraz Shawmut, Inc.

4. Tracor, Inc.; Littelfuse, Inc. Subsidiary.

2.2 CARTRIDGE FUSES

A. Characteristics: NEMA FU 1, nonrenewable cartridge fuse; class and current rating indicated; voltage rating consistent with circuit voltage.

2.3 SPARE-FUSE CABINET

A. Cabinet: Wall-mounted, 0.05-inch- (1.27-mm-) thick steel unit with full-length, recessed piano-hinged door and key-coded cam lock and pull.

1. Size: Adequate for storage of spare fuses specified with 15 percent spare capacity minimum.

2. Finish: Gray, baked enamel.

3. Identification: "SPARE FUSES" in 1-1/2-inch- (38-mm-) high letters on exterior of door.

4. Fuse Pullers: For each size of fuse.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

B. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

A. Service Entrance: Class L, fast acting.

B. Feeders: Class L, fast acting.

C. Motor Branch Circuits: Class RK5, time delay.

D. Other Branch Circuits: Class J, time delay.

3.3 INSTALLATION

A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

B. Install spare-fuse cabinet(s).

3.4 IDENTIFICATION

A. Install labels indicating fuse replacement information on inside door of each fused switch.

END OF SECTION 16491

SECTION 16511-INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Interior lighting fixtures, lamps, and ballasts.

2. Emergency lighting units.

3. Exit signs.

4. Lighting fixture supports.

B. Related Sections include the following:

1. Division 16 Section "Wiring Devices" for manual wall-box dimmers for incandescent lamps.

2. Division 16 Section "Lighting Control Devices" for automatic control of lighting, including time switches, photoelectric relays, occupancy sensors, and multipole lighting relays and contactors.

3. Division 16 Section "Stage Lighting" for theatrical lighting fixtures and their controls.

1.3 DEFINITIONS

A. BF: Ballast factor.

B. CRI: Color-rendering index.

C. CU: Coefficient of utilization.

D. HID: High-intensity discharge.

E. LER: Luminaire efficacy rating.

F. Luminaire: Complete lighting fixture, including ballast housing if provided.

G. RCR: Room cavity ratio.

1.4 SUBMITTALS

A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:

1. Physical description of lighting fixture including dimensions.

2. Emergency lighting units including battery and charger.

3. Ballast.

4. Energy-efficiency data.

5. Life, output, and energy-efficiency data for lamps.

6. Photometric data, in IESNA format, based on laboratory tests of each lighting fixture type, outfitted with lamps, ballasts, and accessories identical to those indicated for the lighting fixture as applied in this Project.

    a. Photometric data shall be certified by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program (NVLAP) for Energy Efficient Lighting Products.

B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.

1. Wiring Diagrams: Power and control wiring.

C. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Lighting fixtures.

2. Suspended ceiling components.

3. Structural members to which suspension systems for lighting fixtures will be attached.

4. Other items in finished ceiling including the following:

    a. Air outlets and inlets.

    b. Speakers.

    c. Sprinklers.

    d. Smoke and fire detectors.

    e. Occupancy sensors.

    f. Access panels.

5. Perimeter moldings.

D. Samples for Verification: Interior lighting fixtures designated for sample submission in Interior Lighting Fixture Schedule. Each sample shall include the following:

1. Lamps: Specified units installed.

2. Accessories: Cords and plugs.

E. Product Certificates: For each type of ballast for bi-level and dimmer-controlled fixtures, signed by product manufacturer.

F. Qualification Data: For agencies providing photometric data for lighting fixtures.

G. Field quality-control test reports.

H. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.

I. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

D. FMG Compliance: Lighting fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FMG.

1.6 COORDINATION

A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

1.7 WARRANTY

A. Special Warranty for Emergency Lighting Batteries: Manufacturer's standard form in which manufacturer of battery-powered emergency lighting unit agrees to repair or replace components of rechargeable batteries that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Emergency Lighting Unit Batteries: 10 years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining nine years.

2. Warranty Period for Emergency Fluorescent Ballast and Self-Powered Exit Sign Batteries: Seven years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining six years.

B. Special Warranty for Ballasts: Manufacturer's standard form in which ballast manufacturer agrees to repair or replace ballasts that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Electronic Ballasts: Five years from date of Substantial Completion.

C. Special Warranty for T5 and T8 Fluorescent Lamps: Manufacturer's standard form, made out to Owner and signed by lamp manufacturer agreeing to replace lamps that fail in materials or workmanship, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: Two year(s) from date of Substantial Completion.

1.8 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.

2. Plastic Diffusers and Lenses: 1 for every 100 of each type and rating installed. Furnish at least one of each type.

3. Battery and Charger Data: One for each emergency lighting unit.

4. Ballasts: 1 for every 100 Insert quantity of each type and rating installed. Furnish at least one of each type.

5. Globes and Guards: 1 for every 20 Insert quantity of each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In Interior Lighting Fixture Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:

1. Approved substitutions by Bell & McCoy Lighting & Control.
2. Approved Substitutions by 2M Lighting Inc.

2.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

B. Incandescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5A.

C. Fluorescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.

D. HID Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5B.

E. Metal Parts: Free of burrs and sharp corners and edges.

F. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.

G. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

H. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.

2. Specular Surfaces: 83 percent.

3. Diffusing Specular Surfaces: 75 percent.

4. Laminated Silver Metallized Film: 90 percent.

I. Plastic Diffusers, Covers, and Globes:

1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

a. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless different thickness is indicated.

b. UV stabilized.

2. Glass: Annealed crystal glass, unless otherwise indicated.

J. Electromagnetic-Interference Filters: Factory installed to suppress conducted electromagnetic-interference as required by MIL-STD-461E. Fabricate lighting fixtures with one filter on each ballast indicated to require a filter.

2.3 BALLASTS FOR LINEAR FLUORESCENT LAMPS

A. Electronic Ballasts: Comply with ANSI C82.11; instant-start type, unless otherwise indicated, and designed for type and quantity of lamps served. Ballasts shall be designed for full light output unless dimmer or bi-level control is indicated.

1. Sound Rating: A.

2. Total Harmonic Distortion Rating: Less than 10 percent.

3. Transient Voltage Protection: IEEE C62.41, Category A or better.

4. Operating Frequency: 20 kHz or higher.

5. Lamp Current Crest Factor: 1.7 or less.

6. BF: 0.85 or higher.

7. Power Factor: 0.95 or higher.

8. Parallel Lamp Circuits: Multiple lamp ballasts shall comply with ANSI C 82.11 and shall be connected to maintain full light output on surviving lamps if one or more lamps fail.

B. Electronic Programmed-Start Ballasts for T5 and T5HO Lamps: Comply with ANSI C82.11 and the following:

1. Lamp end-of-life detection and shutdown circuit for T5 diameter lamps.

2. Automatic lamp starting after lamp replacement.

3. Sound Rating: A.

4. Total Harmonic Distortion Rating: Less than 20 percent.

5. Transient Voltage Protection: IEEE C62.41, Category A or better.

6. Operating Frequency: 20 kHz or higher.

7. Lamp Current Crest Factor: 1.7 or less.

8. BF: 0.95 or higher, unless otherwise indicated.

9. Power Factor: 0.95 or higher.

C. Electromagnetic Ballasts: Comply with ANSI C82.1; energy saving, high-power factor, Class P, and having automatic-reset thermal protection.

1. Ballast Manufacturer Certification: Indicated by label.

D. Single Ballasts for Multiple Lighting Fixtures: Factory-wired with ballast arrangements and bundled extension wiring to suit final installation conditions without modification or rewiring in the field.

E. Ballasts for Low-Temperature Environments:

1. Temperatures 0 Deg F (Minus 17 Deg C) and Higher: Electronic type rated for 0 deg F (minus 17 deg C) starting and operating temperature with indicated lamp types.

2. Temperatures Minus 20 Deg F (Minus 29 Deg C) and Higher: Electromagnetic type designed for use with indicated lamp types.

F. Ballasts for Low Electromagnetic-Interference Environments: Comply with 47 CFR, Chapter 1, Part 18, Subpart C, for limitations on electromagnetic and radio-frequency interference for consumer equipment.

G. Ballasts for Dimmer-Controlled Lighting Fixtures: Electronic type.

1. Dimming Range: 100 to 5 percent of rated lamp lumens.

2. Ballast Input Watts: Can be reduced to 20 percent of normal.

3. Compatibility: Certified by manufacturer for use with specific dimming control system and lamp type indicated.

H. Ballasts for Bi-Level Controlled Lighting Fixtures: Electronic type.

1. Operating Modes: Ballast circuit and leads provide for remote control of the light output of the associated lamp between high- and low-level and off.

a. High-Level Operation: 100 percent of rated lamp lumens.

b. Low-Level Operation: 50 percent of rated lamp lumens.

2. Ballast shall provide equal current to each lamp in each operating mode.

3. Compatibility: Certified by manufacturer for use with specific bi-level control system and lamp type indicated.

I. Dimming Ballasts: Advance Mark-10 ballast or equal.

2.4 EMERGENCY FLUORESCENT POWER UNIT

A. Internal Type: Self-contained, modular, battery-inverter unit, factory mounted within lighting fixture body and compatible with ballast. Comply with UL 924.

1. Emergency Connection: Operate 1 fluorescent lamp(s) continuously at an output of 1100 lumens each. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture ballast.

2. Night-Light Connection: Operate one fluorescent lamp continuously.

3. Test Push Button and Indicator Light: Visible and accessible without opening fixture or entering ceiling space.

a. Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.

b. Indicator Light: LED indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

4. Battery: Sealed, maintenance-free, nickel-cadmium type.

5. Charger: Fully automatic, solid-state, constant-current type with sealed power transfer relay.

6. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

2.5 EXIT SIGNS

A. Description: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.

B. Internally Lighted Signs:

1. Lamps for AC Operation: LEDs, 70,000 hours minimum rated lamp life.

2.6 EMERGENCY LIGHTING UNITS

A. Description: Self-contained units complying with UL 924.

1. Battery: Sealed, maintenance-free, lead-acid type.

2. Charger: Fully automatic, solid-state type with sealed transfer relay.

3. Operation: Relay automatically turns lamp on when power supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.

4. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.

5. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

6. Wire Guard: Heavy-chrome-plated wire guard protects lamp heads or fixtures.

7. Integral Time-Delay Relay: Holds unit on for fixed interval of 15 minutes when power is restored after an outage.

8. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

2.7 LIGHTING FIXTURE SUPPORT COMPONENTS

A. Comply with Division 16 Section "Electrical Supports and Seismic Restraints" for channel- and angle-iron supports and nonmetallic channel and angle supports.

B. Single-Stem Hangers: 1/2-inch (13-mm) steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.

C. Twin-Stem Hangers: Two, 1/2-inch (13-mm) steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.

D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage (2.68 mm).

E. Wires for Humid Spaces: ASTM A 580/A 580M, Composition 302 or 304, annealed stainless steel, 12 gage (2.68 mm).

F. Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.

G. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.

B. Support for Lighting Fixtures in or on Grid-Type Suspended Ceilings: Use grid as a support element.

1. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than 6 inches (150 mm) from lighting fixture corners.

2. Support Clips: Fasten to lighting fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.

3. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two 3/4-inch (20-mm) metal channels spanning and secured to ceiling tees.

4. Install at least one independent support rod or wire from structure to a tab on lighting fixture. Wire or rod shall have breaking strength of the weight of fixture at a safety factor of 3.

C. Suspended Lighting Fixture Support:

1. Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.

2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.

3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.

D. Adjust aimable lighting fixtures to provide required light intensities.

E. Connect wiring according to Division 16 Section "Conductors and Cables."

3.2 FIELD QUALITY CONTROL

A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.

B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 16511

SECTION 16521-EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Exterior luminaires with lamps and ballasts.

2. Poles and accessories.

B. Related Sections include the following:

1. Division 16 Section "Interior Lighting" for exterior luminaires normally mounted on exterior surfaces of buildings.

1.3 DEFINITIONS

A. CRI: Color-rendering index.

B. HID: High-intensity discharge.

C. Luminaire: Complete lighting fixture, including ballast housing if provided.

D. Pole: Luminaire support structure, including tower used for large area illumination.

E. Standard: Same definition as "Pole" above.

1.4 STRUCTURAL ANALYSIS CRITERIA FOR POLE SELECTION

A. Dead Load: Weight of luminaire and its horizontal and vertical supports, and supporting structure, applied as stated in AASHTO LTS-4.

B. Live Load: Single load of 500 lbf (2224 N), distributed as stated in AASHTO LTS-4.

C. Wind Load: Pressure of wind on pole and luminaire, calculated and applied as stated in AASHTO LTS-4.

1. Wind speed for calculating wind load for poles exceeding 50 feet (15 m) in height is 110 mph (177 km/h).

2. Wind speed for calculating wind load for poles 50 feet (15 m) or less in height is 110 mph (177 km/h).

1.5 SUBMITTALS

A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:

1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.

2. Details of attaching luminaires and accessories.

3. Details of installation and construction.

4. Luminaire materials.

5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.

a. Photometric data shall be certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

6. Ballasts, including energy-efficiency data.

7. Lamps, including life, output, and energy-efficiency data.

8. Materials, dimensions, and finishes of poles.

9. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.

10. Anchor bolts for poles.

B. Shop Drawings:

1. Anchor-bolt templates keyed to specific poles and certified by manufacturer.

2. Wiring Diagrams: Power and control wiring.

C. Pole and Support Component Certificates: Signed by manufacturers of poles, certifying that products are designed for indicated load requirements in AASHTO LTS-4 and that load imposed by luminaire has been included in design.

D. Qualification Data: For agencies providing photometric data for lighting fixtures.

E. Field quality-control test reports.

F. Operation and Maintenance Data: For luminaires and poles to include in operation and maintenance manuals.

G. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with IEEE C2, "National Electrical Safety Code."

D. Comply with NFPA 70.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Package aluminum poles for shipping according to ASTM B 660.

B. Store poles on decay-resistant-treated skids at least 12 inches (300 mm) above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.

C. Retain factory-applied pole wrappings on metal poles until right before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Substantial Completion.

2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.

3. Warranty Period for Color Retention: Five years from date of Substantial Completion.

4. Warranty Period for Lamps: Replace lamps and fuses that fail within 12 months from date of Substantial Completion; furnish replacement lamps and fuses that fail within the second 12 months from date of Substantial Completion.

5. Warranty Period for Poles: Repair or replace lighting poles and standards that fail in finish, materials, and workmanship within manufacturer's standard warranty period, but not less than five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In Exterior Lighting Device Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:

1. Approved substitutions by Bell & McCoy Lighting & Control.
2. Approved Substitutions by 2M Lighting Inc.

2.2 LUMINAIRES, GENERAL REQUIREMENTS

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.

J. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:

1. White Surfaces: 85 percent.

2. Specular Surfaces: 83 percent.

3. Diffusing Specular Surfaces: 75 percent.

K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.

M. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."

2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a. Color: As selected from manufacturer's standard catalog of colors.

N. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.

3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

2.3 POLES AND SUPPORT COMPONENTS, GENERAL REQUIREMENTS

A. Structural Characteristics: Comply with AASHTO LTS-4.

1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in Part 1 "Structural Analysis Criteria for Pole Selection" Article, with a gust factor of 1.3.

2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.3 to obtain the equivalent projected area to be used in pole selection strength analysis.

B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts, unless otherwise indicated.

C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.

2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication, unless stainless-steel items are indicated.

3. Anchor-Bolt Template: Plywood or steel.

D. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange.

2.4 STEEL POLES

A. Poles: Comply with ASTM A 500, Grade B, carbon steel with a minimum yield of 46,000 psig (317 MPa); 1-piece construction up to 40 feet (12 m) in height with access handhole in pole wall.

1. Shape: As specified on the Light Fixture Scherdule.

2. Mounting Provisions: Butt flange for bolted mounting on foundation or breakaway support.

B. Steel Mast Arms: Single-arm type, continuously welded to pole attachment plate. Material and finish same as pole.

C. Brackets for Luminaires: Detachable, cantilever, without underbrace.

1. Adapter fitting welded to pole and bracket, then bolted together with stainless-steel bolts.

2. Cross Section: Tapered oval, with straight tubular end section to accommodate luminaire.

3. Match pole material and finish.

D. Pole-Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fastened to pole top.

E. Intermediate Handhole and Cable Support: Weathertight, 3-by-5-inch (76-by-127-mm) handhole located at midpoint of pole with cover for access to internal welded attachment lug for electric cable support grip.

F. Grounding and Bonding Lugs: Welded 1/2-inch (13-mm) threaded lug, complying with requirements in Division 16 Section "Grounding and Bonding," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.

G. Cable Support Grip: Wire-mesh type with rotating attachment eye, sized for diameter of cable and rated for a minimum load equal to weight of supported cable times a 5.0 safety factor.

H. Platform for Lamp and Ballast Servicing: Factory fabricated of steel with finish matching that of pole.

I. Galvanized Finish: After fabrication, hot-dip galvanize complying with ASTM A 123/A 123M.

J. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."

2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.

3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a. Color: As selected by Architect from manufacturer's full range, matching luminaire .

2.5 POLE ACCESSORIES

A. Duplex Receptacle: 120 V, 20 A in a weatherproof assembly complying with Division 16 Section "Wiring Devices" for ground-fault circuit-interrupter type.

1. Recessed, 12 inches (300 mm) above finished base.

2. Nonmetallic polycarbonate plastic or reinforced fiberglass cover, with color to match pole, that when mounted results in NEMA 250, Type 3R enclosure.

3. With lockable hasp and latch that complies with OSHA lockout and tag-out requirements.

B. Minimum 1800-W transformer, protected by replaceable fuses, mounted behind access cover.

C. Base Covers: Manufacturers' standard metal units, arranged to cover pole's mounting bolts and nuts. Finish same as pole.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

A. Install lamps in each luminaire.

B. Fasten luminaire to indicated structural supports.

C. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources.

3.2 POLE INSTALLATION

A. Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.

B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features, unless otherwise indicated on Drawings:

1. Fire Hydrants and Storm Drainage Piping: 60 inches (1520 mm).

2. Water, Gas, Electric, Communication, and Sewer Lines: 10 feet (3 m).

3. Trees: 15 feet (5 m).

C. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer.

D. Foundation-Mounted Poles: Mount pole with leveling nuts, and tighten top nuts to torque level recommended by pole manufacturer.

1. Install base covers, unless otherwise indicated.

2. Use a short piece of 1/2-inch- (13-mm-) diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.

E. Poles and Pole Foundations Set in Concrete Paved Areas: Install poles with minimum of 6-inch- (150-mm-) wide, unpaved gap between the pole or pole foundation and the edge of adjacent concrete slab. Fill unpaved ring with pea gravel to a level 1 inch (25 mm) below top of concrete slab.

F. Raise and set poles using web fabric slings (not chain or cable).

3.3 INSTALLATION OF INDIVIDUAL GROUND-MOUNTING LUMINAIRES

A. Install on concrete base with top 4 inches (100 mm) above finished grade or surface at luminaire location. Cast conduit into base, and finish by troweling and rubbing smooth. Concrete materials, installation, and finishing are specified in Division 3 Section "Cast-in-Place Concrete."

3.4 CORROSION PREVENTION

A. Steel Conduits: Comply with Division 16 Section "Raceways and Boxes." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.5 GROUNDING

A. Ground metal poles and support structures according to Division 16 Section "Grounding and Bonding."

1. Install grounding electrode for each pole, unless otherwise indicated.

2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

B. Ground nonmetallic poles and support structures according to Division 16 Section "Grounding and Bonding."

1. Install grounding electrode for each pole.

2. Install grounding conductor and conductor protector.

3. Ground metallic components of pole accessories and foundations.

3.6 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.

1. Verify operation of photoelectric controls.

END OF SECTION 16521

**AI-43353** **Purchasing Department** **15. E. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Martha L. Salazar **Submitted By:** Rocio Villarreal, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

Acceptance and approval of "First Amendment" to the current lease agreement with WIC Program to reflect name change of lessor from A&J Martinez, LP to Julcar, LLC.

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1292-441-00-350-001-4-441

**FUNDS AVAILABLE Y/N?:** Y **MATCHING FUNDS Y/N?:** N

**BUDGETARY IMPACT:**

Funds available as of 2/28/2014.

## Attachments

Amendment

Draft by legal-Email

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/28/2014 02:03 PM |
| Budget & Management | Debbie Tamez | 02/28/2014 02:05 PM |
| Obdett Calzada | Obdett Calzada | 02/28/2014 02:51 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Rocio Villarreal Started On: 02/26/2014 04:22 PM

Final Approval Date: 02/28/2014

**STATE OF TEXAS §**
**COUNTY OF HIDALGO §**

## FIRST AMENDEDMENT TO LEASE AGREEMENT

This **Amendment to Lease Agreement By And Between The County Of Hidalgo, Texas** and **JULCAR, L.L.C.** is made this ____ day of _____ 2014, between the parties, as follows:

**WHEREAS**, on June 26, 2012, Hidalgo County (the "Lessee") entered into a Lease Agreement (the "Lease Agreement") with A&J Martinez, LP (the "Lessor"), in which the Lessee would rent certain premises from the Lessor as described in the Agreement;

**WHEREAS**, Lessor transferred its fee interest in the real property which is the subject of the Lease Agreement to Augustin Martinez by deed dated August 26, 2013 and recorded in the Official Records of Hidalgo County under Document Number 2013-2450173;

**WHEREAS,** Augustin Martinez transferred the real property which is the subject of the Lease Agreement to **JULCAR, L.L.C.** by deed dated September 24, 2013 and recorded in the Official Records of Hidalgo County, Texas under Document Number 2013-2451352;

**WHEREAS, JULCAR, L.L.C.** desires to ratify and confirm the terms and provisions of the Lease Agreement; and substitute itself for the original lessor; and

**WHEREAS,** the parties desire to amend the Lease as hereinafter provided.

**NOW THEREFORE**, for and in consideration of the terms and provisions of this First Amendment to Lease Agreement and other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, **JULCAR, L.L.C.** as Lessor, and **COUNTY OF HIDALGO, TEXAS,** as Lessee effective as of the 24th day of September, 2013 (the "Effective Date") hereby agrees to the following amendment to the Lease:

1. **JULCAR, L.L.C.** shall be the lessor under the Lease Agreement and the name of **JULCAR, L.L.C.** substituted throughout the Lease Agreement in lieu of the name of A&J Martinez, LP wherever the name of A&J Martinez appears in the Lease Agreement.

2. Except as modified herein, all terms and conditions of the Agreement, as amended, remain in full force and effect and **JULCAR, L.L.C.** and Lessee ratify and confirm the terms and provisions of the Lease as amended.

**EXECUTED IN DUPLICATE ORIGINALS** and effective as of the day and year first written above.

**COUNTY OF HIDALGO**

By:_____
Ramon Garcia, County Judge

**ATTEST:**

By:_____
Arturo Guajardo, Jr., County Clerk

**JULCAR, L.L.C.**

By: _____

Printed Name:_____

**APPROVED AS TO FORM:**

**ATLAS, HALL & RODRIGUEZ, LLP**

By: _____
Stephen L. Crain, Attorney

# FW: A. & J. Martinez, L.P. - Transfer to JULCAR, L.L.C.

**From :** Stephen L. Crain <scrain@atlashall.com> Fri, Feb 21, 2014 01:34 PM
**Subject :** FW: A. & J. Martinez, L.P. - Transfer to JULCAR, L.L.C. 1 attachment
**To :** 'Rocio Villarreal' <rocio.villarreal@co.hidalgo.tx.us>

Hi Rocio,

Attached is the amendment.

---

**From:** Rocio Villarreal [mailto:rocio.villarreal@co.hidalgo.tx.us]
**Sent:** Wednesday, February 19, 2014 3:31 PM
**To:** Steve Crain
**Subject:** Re: A. & J. Martinez, L.P. - Transfer to JULCAR, L.L.C.

Yes please.

ROCIO VILLARREAL
HIDALGO COUNTY PURCHASING DEPT.
CONTRACTS MANAGER
(956) 318-2626 Work
(956) 292-7000 Ext. 4868 Work
rocio.villarreal@co.hidalgo.tx.us
2812 S. Business Hwy 281
Edinburg, Texas 78539

---

**From:** "Steve Crain" <scrain@atlashall.com>
**To:** "Rocio Villarreal" <rocio.villarreal@co.hidalgo.tx.us>
**Sent:** Wednesday, February 19, 2014 3:25:07 PM
**Subject:** RE: A. & J. Martinez, L.P. - Transfer to JULCAR, L.L.C.

The deed should work. Do you want us to prepare a lease amendment?

---

**From:** Rocio Villarreal [mailto:rocio.villarreal@co.hidalgo.tx.us]
**Sent:** Wednesday, February 19, 2014 2:47 PM
**To:** Steve Crain
**Subject:** Re: A. & J. Martinez, L.P. - Transfer to JULCAR, L.L.C.

Attached as requested is the lease agreement with A&J Martinez, LP.

---

**From:** "Steve Crain" <scrain@atlashall.com>
**To:** "Rocio Villarreal" <rocio.villarreal@co.hidalgo.tx.us>

**AI-43160** **Purchasing Department** **15. F. 1.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Hon. Lupe Trevino, HC-Sheriff **Submitted By:** Elena Gomez, PURCHASING DEPT.

**Department:** PURCHASING DEPT.

## Information

### CAPTION

Presentation of sole bid received as detailed in tabulation sheet contained herein meeting all specifications and/ or requirements for the purpose of award and approval of contract for Request for Bid titled: Hidalgo County Sheriff's Office- "Polygraph Examiner for (Pre-Employment, Criminal, Suitability)" through project No.: 2014-018-02-05-MEG.

### BACKGROUND

## Fiscal Impact

**FISCAL YEAR:** 2014 **ACCT. #:** 4-1100-421-00-280-001-0-339

**FUNDS AVAILABLE Y/N?:** y **MATCHING FUNDS Y/N?:** n

**BUDGETARY IMPACT:**

Funds available as of 2/27/2014.

## Attachments

Participating Sheet

Tabulation Sheet

Recommendation Memo

Contract

Legal

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Purchasing Department | Marty Salazar | 02/26/2014 02:04 PM |
| Budget & Management | Debbie Tamez | 02/26/2014 03:29 PM |
| Obdett Calzada | Obdett Calzada | 02/27/2014 02:06 PM |
| Auditor's Office | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Elena Gomez Started On: 02/12/2014 02:58 PM

Final Approval Date: 02/28/2014

**HIDALGO COUNTY PURCHASING DEPARTMENT**
**PARTICIPATING BIDDER=S LOG**
**SPECIFICATIONS/ RFSQ PACKETS**

**RFB OPENING DATE: February 05, 2014** **RFB OPENING TIME: 9:30 A.M.**

**DEPARTMENT/ RFB DESCRIPTION: Polygraph Examiner (Pre-Employment)-Sheriff's Office**

**RFB NO: 2014-018-02-05-MEG**

| NAME OF BIDDER: COMPANY/FIRM | BID REQUEST *VIA | SIGNATURE (IF APPLICABLE) OR INITIALS OF STAFF ADDRESSING MAILOUT | DATE | ADDRESS E-MAIL & PHONE NO |
|---|---|---|---|---|
| Arbitration Polygraph Services LLC.<br>Gilbert Capuchina<br>**as per email no bid 01/21/14** | Email | Elena Gomez | 01/21/14 | PO Box 3974<br>McAllen, Texasa 78502<br>956-212-5586<br>gilbertocapuchina@att.net |
| Continental Polygraph<br>Jose Flores III | Email | Elena Gomez | 01/21/14 | 905 East 8th<br>San Juan, Texas 78589<br>956-778-0300<br>jflores101@aol.com |
| Purpose Driven Polygraph Investigative Consultants LLC.<br>Ronnie Munoz | Email | Elena Gomez | 01/21/14 | 624 N. Tio Suite B<br>Weslaco, Texas 78596<br>956-266-3090<br>956-343-7123<br>ronnie6199@gmail.com |

**IN PERSON (IP)**
**E-MAIL (EM)**
**TELEPHONE REQUEST (TR)**
**BIDDER LIST MAIL OUT (BLM)**

| **PURPOSE DRIVEN<br>624 N. TIO STE B<br>WESLACO, TEXAS 78596** | | | | |
|---|---|---|---|---|
| **Hours of Operations** | **Days** | **Hours** | **Unit Price** | **Total Amount** |
| Criminal | M-F | 8-5 PM | $250.00 | $250.00 |
| Pre-Employment | M-F | 8-5 PM | $250.00 | $250.00 |
| Suitability | M-F | 8-5 PM | $250.00 | $250.00 |

| **Timeframe for results** | **Days** | **Hours** |
|---|---|---|
| Verbal | SAME DAY | 8-5 PM |
| Documentation | 1-2 DAY | 8-5 PM |
| Alternate test location(s) | 624 N. TIO, STE B<br>WESLACO, TEXAS 78596 | |

**Hidalgo County Purchasing Department**
**2812 S. Business Highway 281**
**New Administration Building**
**Edinburg, Texas 78539**
**(956) 318-2626/ Fax: (956) 318-2629**

# MEMORANDUM

(Department's Recommendation)

**To:** Capt. Richard Ozuna

**From:** Elena Gomez, Buyer II
Hidalgo County Purchasing Dept.

**Date:** **December 5, 2013**

**Re:** **Approval of Specifications for: BID NO. -2014-018-02-05-MEG**
**Hidalgo County Sheriff's Office** "Polygraph Examiner for (Pre-Employment, Criminal, Suitability)"

---

We have received **One (1) qualified responded** to the above mentioned project. Enclosed you will find a copy of the tabulation sheet along with copy of the bid response for your review and recommendation.

We would like to present your recommendation on the next Commissioner's Count Meeting; therefore, we need your response no later than **Monday, February 24, 2014 @ 10:00 a.m.** (Due to the time constrain) to be able to present to Commissioner's Court **as soon as possible.** Please indicate your recommendation or any concerns on the space provided below and reply to the Purchasing Department **via fax to (956)-318-2629 or via email to: elena.gomez@co.hidalgo.tx.us.**

Should you have any questions or require further information please do not hesitate to call me at 318-2626- ext. 4855. Thank you for your attention and cooperation to this matter.

| AWARD TO VENDOR(S): | RECOMMENDATION (BASIS) |
|---|---|
| 1. Purpose Driven | Meeting All Specifications. |
| 2. | |

Please include the budget account number(s) for the above reference project.

Budget Acct No.: 4-1160-421-00-280-001-0-339

Capt. R. Ozuna Captain. Richard Ozuna H.C.S.O. 2-6-14

AUTHORIZED SIGNATURE PRINTED NAME DEPARTMENT DATE

Enclosures

HIDALGO COUNTY
TABULATION SHEET
"POLYGRAPH EXAMINER FOR (Pre-Employment, Criminal, Suitability)"
RFB NO.: 201-018-02-05-MEG

| **PURPOSE DRIVEN**<br>**624 N. TIO STE B**<br>**WESLACO, TEXAS 78596** | | | | |
|---|---|---|---|---|
| **Hours of Operations** | **Days** | **Hours** | **Unit Price** | **Total Amount** |
| Criminal | M-F | 8-5 PM | $250.00 | $250.00 |
| Pre-Employment | M-F | 8-5 PM | $250.00 | $250.00 |
| Suitability | M-F | 8-5 PM | $250.00 | $250.00 |

| **Timeframe for results** | **Days** | **Hours** |
|---|---|---|
| Verbal | SAME DAY | 8-5 PM |
| Documentation | 1-2 DAY | 8-5 PM |
| Alternate test location(s) | 624 N. TIO, STE B<br>WESLACO, TEXAS 78596 | |

TRANSMISSION VERIFICATION REPORT

TIME : 02/07/2014 11:09
NAME : QM
FAX : 9563936021
TEL : 9563936020
SER.# : BROK5J364425

| | |
|---|---|
| DATE,TIME | 02/07 11:08 |
| FAX NO./NAME | 93182629 |
| DURATION | 00:00:16 |
| PAGE(S) | 01 |
| RESULT | OK |
| MODE | STANDARD ECM |

**Hidalgo County Purchasing Department**
**2812 S. Business Highway 281**
**New Administration Building**
**Edinburg, Texas 78539**
**(956) 318-2626/ Fax: (956) 318-2629**

# MEMORANDUM

(Department's Recommendation)

**To:** Capt. Richard Ozuna

**From:** Elena Gomez, Buyer II
Hidalgo County Purchasing Dept.

**Date:** **December 5, 2013**

**Re:** **Approval of Specifications for: BID NO. -2014-018-02-05-MEG**
**Hidalgo County Sheriff's Office** "Polygraph Examiner for (Pre-Employment, Criminal, Suitability)"

We have received **One (1) qualified responded** to the above mentioned project. Enclosed you will find a copy of the tabulation sheet along with copy of the bid response for your review and recommendation.

We would like to present your recommendation on the next Commissioner's Count Meeting; therefore, we need your response no later than **Monday, February 24, 2014 @ 10:00 a.m.** (Due to the time constrain) to be able to present to Commissioner's Court **as soon as possible.** Please indicate your recommendation or any concerns on the space provided below and reply to the Purchasing Department **via fax to (956)-318-2629 or via email to: elena.gomez@co.hidalgo.tx.us.**

Should you have any questions or require further information please do not hesitate to call me at 318-2626- ext. 4855. Thank you for your attention and cooperation to this matter.

| AWARD TO VENDOR(S): | RECOMMENDATION (BASIS) |
|---|---|
| 1. | |

**THE STATE OF TE AS**

**COUNTY OF HIDALGO**

**SERVICE CONTRACT**
**C-14-018-0 -0**

**THIS CONTRACT** is made and entered into this t day of **Marc , 2014** by and between the **County o Hidalgo, Texas** ("County") and **Ronaldo Muno** d/b/a **Purpose Dri e Polygrap In estigati e Consultants, LLC.,** (“Company").

**WHEREAS,** Company responded to notices for Request for Sealed Bids (RFB) for: **Poly Grap Examiners (Pre-Employment, Criminal and Suita ility) (on an as needed asis)** for **Hidalgo County** (the "Services");

**WHEREAS,** Company submitted a sealed bid to provide services in accordance with Request for Sealed Bids, a copy of such Request for Bids and Company’s sealed bid attached hereto respectively as Exhibits “A” and “B”, and incorporated herein for all purposes (collectively the "RFB"); and;

**WHEREAS,** in recognition of and in consideration of Company's agreement to perform the Services in accordance with Specifications within Exhibit “A” Request for Sealed Bids (RFB) Procurement Packet, the Commissioners’ Court of County awarded the sealed bid to Company.

**NOW, THEREFORE,** in mutual consideration of the foregoing and the further consideration of the following, the parties hereto agree as follows:

1. County and Company hereby agrees that this Contract is entered into in order to provide the Services to **Hidalgo County**. This Contract does not extend to any third parties any duties or benefits conferred in any manner hereunder or otherwise.

2. Company hereby promises and agrees to render and provide, during the term of this Contract, and shall be obligated to render and provide the services in accordance with the specifications contained in Exhibit “A” Request for Sealed Bids (RFB) Procurement Packet within **Hidalgo County** following a request for Services by the **Hidalgo County S eri s O ice**. Company agrees in performing the Services that it will use proper professional standards, comply with any and all appropriate laws and regulations in providing the Services, and devote such time as is necessary to safely and efficiently provide the Services. Further Hidalgo County reserves the right to request these services from other sources other than the successful vendor and shall not be in violation of any terms or conditions of said contract.

3. This Contract shall be for a period of **one (1) year**, commencing on **Marc , 2014** and expiring on **Marc 4, 201** and may be extended at the sole discretion of the County for an additional two (2) one (1) year terms under the same rates, terms and conditions. Hidalgo County also reserves the right to continue this sealed bid for an additional sixty (60) day grace period at the end of the contract term for unforeseen delay of award for the next term and contingent upon cost remaining unchanged.

4. As a condition of this Contract, Company shall hold and maintain throughout the term of this Contract all licenses and permits required, or which may be required by any authority during the term hereof to provide the Services.

5. All trucks or vehicles operated by the Company to perform the Services shall contain all equipment required by any authority to operate on streets and roads and all persons in the employ of Company who operate such trucks or vehicles shall have the required licenses, qualifications, skill and expertise to perform such Services and shall comply with all laws, rules and regulations prescribed by any agency or authority having jurisdiction with regard to the operation of such trucks or vehicles in providing the Services.

6. As consideration for rendering the Service provided for in this Contract, the County agrees to pay Company the amounts specified in Exhibit "B" attached hereto payable against written invoice submitted by Company.

7. Company shall provide insurance in force on all its vehicles and all persons connected with providing services under this Contract naming County as an additional insured (with the coverages and in the amounts described on Exhibit "C" attached hereto and incorporated herein at this point for all purposes), and shall furnish to County certificates of such insurance coverage.

8. Company shall provide a sufficient number of trucks, vehicles, personnel and equipment available to safely and efficiently provide the Services.

9. Company shall indemnify and hold harmless County, its elected officials, employees and agents from any and all claims, damages, losses, and expenses including attorney's fees for the defense of any action against County arising out of, resulting from, or connected with the provision of the Service by Company under this Contract. Said indemnity shall cover any act or failure to act by the Company, its agents or employees.

10. This Contract shall not be assignable in whole or in part by either party without prior written consent of the other party.

11. It is expressly agreed that this Contract and the performance by the parties

hereunder does not create any agency relationship or master-servant relationship, that County has no supervision of the performance of the Services provided by Company, and that Company is an independent contractor under this Contract.

12. Any notice required or permitted to be given hereunder shall be in writing and shall be delivered personally or sent by certified mail, postage prepaid, as set forth below:

If to County: County of Hidalgo
Attn: County Judge
302 West University Drive
Edinburg, Texas 78539

If to Company: **Ronaldo Muno** d/b/a
**Purpose Dri en Polygrap In estigati e Consultants, LLC**
Attn: Ronaldo Munoz, Owner/ President
624 North Tio, Suite B
Weslaco, Texas 78596

13. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

14. This Agreement may be terminated by County without cause upon thirty (30) days written notice.

15. This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective heirs, executors, administrators, legal representatives, successors, and assigns where permitted by this Agreement.

16. This Agreement shall be governed by and construed in accordance with the laws of the State of Texas and shall be performable in Hidalgo County.

17. **Commitment o Current Re enues Only**. In the event that, during any term hereof, the Commissioners Court does not appropriate sufficient funds to meet the obligations of County under this Agreement, County may terminate this Agreement upon ninety (90) days written notice to Company. County agrees, however, to use reasonable efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of County pursuant to the provisions of Tex. Loc. Govt. Code Ann. ' 271.903 (Vernon Supp. 1996).

18. **Entire Agreement**. This Agreement contains the entire contract between the parties hereto, and each party acknowledges that neither has made (either directly or through any agent or representative) any representation or agreement in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by agreement in writing executed by the parties hereto, and not otherwise.

**WITNESS** our hands in duplicate originals this ____day of _____, 2014.

**APPROVED AS TO FORM**
Atlas,Hall&Rodriguez, L.L.P.

By:_____
Stephen L. Crain, Attorney

**COUNTY OF HIDALGO**

**ATTEST:**

By: _____
Ramon Garcia, County Judge

By: _____
Arturo Guajardo, Jr., County Clerk

**COMPANY:**
**Ronaldo Muni** d/b/a
**Purpose Dri en Polygrap In estigati e Consultants, LLC**

By:_____
Printed Name: Ronaldo Munoz
Title: Owner/President

# E HIBIT A

REQUEST FOR SEALED BIDS (RFB) PROCUREMENT PACKET

January 21, 2014

_____

_____

_____

_____

Re: **HIDALGO COUNTY**
Request for Bids -**"Polygraph Examiners for (Pre-Employment, Criminal, Suitability)**
**Bid No: 2014-018-02-05-MEG**

Dear Gentleman/Ladies:

Enclosed please find a Request for Bid (RFB) packet for your review and consideration.

Hidalgo County Purchasing Department welcomes and appreciates your participation in the bid process.

If any further assistance is required, please do not hesitate to call the Purchasing Department 956/318-2626.

Sincerely,

Martha L. Salazar, CPPB
Hidalgo County Purchasing Agent

MLS/meg

Enclosures

# REQUEST FOR BID (RFB)
# CHECKLIST

## HIDALGO COUNTY
## "Polygraph Examiners for (Pre-Employment, Criminal, Suitability)"
## Bid No: 2014-018-02-05-MEG

1. Request For Bid Letter, consisting of 1 page.
2. Request for Bid, Legal Notice, consisting of 7 pages.
3. Exhibit "A" Specifications consisting of 3 pages
4. Exhibit "B" Bid Page consisting of 1 page.
5. Exhibit "C" Insurance Requirements consisting of 4 pages.
6. Exhibit "D" CIQ Conflict of Interest Questionnaire, consisting of 1 page.
7. Vendor/Bidder Application and W-9 form consisting of 6 pages.
8. Draft Requirements Agreement consisting of 8 pages.
9. Certification Regarding Debarment consists of 1 page.

The above mentioned items shall be found in the Request for Bid (RFB) packet that is attached herewith. Should you find that any of the items are not attached in its entirety please contact Purchasing by calling (956) 318-2626, advise of missing documentation, and Purchasing will forward information either through facsimile or by U.S. Mail.

Thank you.

Martha L. Salazar, CPPB
Purchasing Agent

January 21, 2014
Date

| BID: 2014-018-02-05-MEG | Buyer II: Elena Gomez | Tel. No: (956) 318-2626 Ext. 4855 |
|---|---|---|

# REQUEST FOR BIDS

## HIDALGO COUNTY
## (SHERIFF'S OFFICE)
## "POLYGRAPH EXAMINERS FOR (PRE-EMPLOYMENT, CRIMINAL, SUITABILITY)"

## BID OPENING DATE:
## February 05, 2014

Contact Person:

Martha L. Salazar, CPPB,Purchasing Agent
Hidalgo County Purchasing Department
2812 S. Bus Hwy 281 New Administration Building
Edinburg, Texas 78539

1. Sealed bids will be received for **HIDALGO COUNTY SHERIFF'S OFFICE -POLYGRAPH EXAMINERS FOR (PRE-EMPLOYMENT, CRIMINAL, SUITABILITY)"** in accordance with the specifications attached as Exhibit "A" hereto. Bids should address all specifications set forth. Bidders may suggest substitutions of features which they feel would be in the best interest of Hidalgo County ("County"). Strong rationale must be presented for any deviation from the specifications. Hidalgo County reserves the right to reject the deviation and its effect on the overall bid.

2. **One (1) original and Three (3)** copies of all bids are required with the bidders name and return address clearly typed/printed on upper left hand corner and the proper notation clearly typed/printed on the lower left hand corner of the envelope and/or package: **BID-2014-018-02-05-MEG - HIDALGO COUNTY SHERIFF'S OFFICE --"POLYGRAPH EXAMINERS FOR (PRE-EMPLOYMENT, CRIMINAL, SUITABILITY)"** and in County's Purchasing Department, 2812 S. Business Highway 281, Edinburg, Texas, **on or before 9:30 A.M., February 05, 2014. NO FACSIMILES OR LATE ARRIVALS WILL BE ACCEPTED. ANY RFB RECEIVED AFTER THAT TIME WILL NOT BE OPENED AND WILL BE RETURNED. OVERNIGHT MAIL MUST ALSO BE PROPERLY LABELED ON THE OUTSIDE OF EXPRESS ENVELOPE OR PACKAGE WITH REFERENCE TO REQUEST FOR BIDS-2014-018-02-05-MEG.** Hidalgo County reserves the right to refuse and reject any/all RFB and to waive any/all formalities or technicalities, or to accept the RFB considered the best and most advantageous to Hidalgo County.

3. Hidalgo County reserves the right to: A. separate and accept, or eliminate any item(s) listed under this bid that it deems necessary to accommodate budgetary and/or operational requirements; B. reject any or all bids submitted and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid for approval; and C. award the bid to one bidder or to multiple bidders if the County determines it is in its best interest to do so."

4. The Bidder shall not substitute items named in the bid without the express written consent of Hidalgo County. Failure of the delivered item(s) to perform as specified, or failure to meet the stated delivery schedule shall release Hidalgo County from all obligations to the contracting party with regard to the item(s) in question. In such event, County may elect to award the contract to the next-lowest responsible bidder, or to reject all bids and re-advertise.

5. For work to be performed at a County owned or operated location, each bidder shall, in its sole discretion, visit the job site before preparing the bid and thoroughly familiarize himself/herself with existing conditions. Bidder should take field dimensions and note all circumstances which affect the dollar amount of the bid.

6. Descriptive specifications are referenced in this document to indicate the general kind and quality of equipment desired by Hidalgo County. Due to various styles and models of equipment, bidders are required to include illustrations, specifications, explanation of warranties, and service data with their bid including catalogue numbers and any necessary references.

7. No bid may be withdrawn within thirty (30) days from the scheduled time to open bids.

8. Proposed prices are to remain firm for a minimum of ninety (90) days after bid opening.

9. Any interpretations, amendments, corrections or changes to this bid document must be in a written addendum and signed by the County Judge or his designee. Addenda will be mailed to all who are

known to have received a copy of the Request for Bids. Bidders shall acknowledge receipt of all addenda as a part of their bid.

10. County reserves the right to accept or reject any or all bids.

11. Costs are to be net F.O.B., County Prepaid.

12. County is exempt from Federal Excise Tax, State Tax and Local Tax. Do Not include tax in cost figure. If it is determined that tax was included in the cost figures it will not be included in the tabulation of any awards. Tax exemption certificates will be furnished upon request.

13. Funds for this procurement have been provided through the County budget for this fiscal year only. County, on an annual basis, has the right to reconsider a contract during the budget process for ensuing years if financial resources of County are insufficient to meet the liabilities of said contract. The award of a bid or contract hereunder will not be construed to create a debt of the County which is payable out of funds beyond the current fiscal year.

14. Upon award and prior to execution of a contract, Sole Proprietorships are required to submit a copy of their social security cards to the Hidalgo County Auditor's Office in order to establish an account with the County. All awarded vendors must submit a completed W-9 and a copy o their Federal ID Number Certificate.

15. **DELIVERY INSTRUCTIONS:**

- No deliveries accepted after 3:00 P.M., Monday-Friday.
- At least seventy two (72) hours prior notice of delivery must be given to Martha L. Salazar, Purchasing Agent before delivery will be accepted.
- If you need additional information call the office listed below:

Hidalgo County Purchasing Department
Martha L. Salazar, Purchasing Agent
(956) 318-2626

16. **BILLING AND PAYMENT INSTRUCTIONS:**

- Invoices must include:
  a) Name and address of successful bidder
  b) Name and address of receiving department or official
  c) Purchase Order Number (if any)
  d) Notation - **HIDALGO COUNTY SHERIFF'S OFFICE - "POLYGRAPH EXAMINERS FOR (PRE-EMPLOYMENT, CRIMINAL, SUITABILITY)"** Descriptive information as to the items or services delivered, including product code, item number, quantity, etc.

- Discount payments will be considered when offered.

- Contact person for Billing and Payment questions:

Hidalgo County Sheriff's Office
Attn: Guadalupe Lupe Trevino
711 E. El Cibolo Rd.
Edinburg, Texas 78539
(956) 383-8114

17. **SCHEDULE OF EVENTS:**

| | |
|---|---|
| **Bid Opening, 9:30 AM** | **February 05, 2014** |
| Award of Contract | _____, 2014 |
| Commence Work or Deliver Products | _____, 2014 |

18. **BID OR PERFORMANCE BOND AND DEBARMENT CERTIFICATION; PAYMENT UNDER CONTRACT:**

. If the contract proposed is for the construction of public works or is for a contract for goods & services exceeding $100,000, all bidders shall furnish a good and sufficient bid bond in the amount of five percent of the total contract price. A bid bond must be executed with a surety company authorized to do business in Texas. All bidders are also required to furnish a certification or acknowledgment stating that the contractor or vendor is free from suspension or debarment pursuant to federal regulation 45CFR Part 76.

. Together with the signing of a contract or issuance of a purchase order following the acceptance of a bid, and prior to commencement of the actual work, the bidder shall furnish a performance bond to the County for the full amount of the contract, if that contract exceeds $50,000.

. If the contract is for $50,000 or less, no money will be paid to the contractor until completion and acceptance of the work or the fulfillment of the purchase obligation to the County, and, if applicable, the receipt by County of satisfactory evidence that all subcontractors and material men have been paid.

. If a contract is for the construction, alteration or repair of public buildings or public works, the contractor *shall* provide a payment bond for a contract in excess of Twenty Five Thousand Dollars ($25,000.00), as required by Tex. Govt. Code Ch. 2253.

. For requirements contracts, bond requirements are determined by applying the proposed unit price to the estimated quantities included in the specifications.

19. **ETHICAL STANDARDS:**

. It shall be a breach of ethics to offer, give or agree to give any elected official, department head or employee, or former elected official, department head or employee, of the County, or for any elected official, department head or employee or former elected official, department head or employee of the County, to solicit, demand, accept or agree to accept from another person, entity or organization, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter pertaining to any program requirement or a contract or subcontract, or to any

solicitation or proposal therefore pending before any department or agency of the County.

. It shall be a breach of ethics for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor for any contract for the County, or any person associated therewith, as an inducement for the award of a subcontract or order.

. No public official shall have an interest in a contract awarded hereunder except in accordance with Tex. Loc. Govt. Code Chapter 171.

20. **DISCLOSURE OF CONFLICT OF INTEREST:**

. Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor, person, consultant or contractor considering doing business with Hidalgo County ("the County") to disclose in the Conflict of Interest Questionnaire (the "CIQ") attached as Exhibit D, the vendor, person, consultant or contractor's affiliation or business relationship that might cause a conflict of interest with the County. By law, the CIQ must be filed with the Hidalgo County Clerk's Office no later than the seventh business day after the date the person becomes aware of facts that require that statement to be filed. The disclosure requirement applies to a person or business who contracts or seeks to contract with Hidalgo County for the sale or purchase of property, goods or service. Any purchase order or contract resulting from this process shall be considered null and void if the successful bidder fails to comply with Texas Local Government Code Chapter 176. Vendors, consultants, contractors and others who desire to conduct business with Hidalgo County are encouraged to refer to Texas Local Government Code Chapter 176 for the details of this law. An offense under Texas Local Government Code Chapter 176 is a Class C Misdemeanor.

Please Submit completed CIQ forms to the Hidalgo County Clerk's Office located at 100 N. Closner, Edinburg, Texas 78539-Hidalgo County Courthouse
**COMPLETION AND SUBMISSION OF FORM CIQ IS THE SOLE RESPONSIBILITY OF THE PROSPECTIVE BIDDER.**

21. If, during the life of any contract or bid awarded, the successful bidder's net prices generally available to other customers for items awarded herein are reduced below the contracted price, it is understood and agreed that the benefits of such reduction shall be extended to County.

22. Bids, and all goods and services provided there under, shall comply with all federal, state and local laws concerning this type(s) of goods and/or services.

23. Minimum Standards for Responsible Prospective Bidders: A prospective bidder must affirmatively demonstrate bidder's responsibility. A prospective bidder, by submitting a bid, represents to County that it meets the following requirements:

. Possess or is able to obtain adequate financial resources as required to perform under the bid;
. Be able to comply with the required or proposed delivery schedule;
. Have a satisfactory record of performance;
. Have a satisfactory record of integrity and ethics;
. Be otherwise qualified and eligible to receive an award.

24. Successful bidder will pay or cause to be paid, without cost or expenses to County, all FICA, FUTA/SUTA and Federal Income Withholding Taxes of all employees, and all wages and benefits as

required by Federal or State law. Successful bidder's officers, agents and/or employees will not be entitled to any benefits of an employee or elected official of County, including, but not limited to, benefits associated with County's civil service system.

25. Any contract award to a successful bidder will be in effect until (a) the contract expires, (b) delivery and acceptance of products, and/or performance of services ordered, or (c) terminated by County with thirty day's written notice prior to cancellation.

26. County reserves the right to enforce performance of any contract awarded hereunder in any manner prescribed by law or deemed to be in the best interest of the County in the event of breach or default by successful bidder; County reserves the right to terminate any contract immediately in the event a successful bidder fails to:

    A. Meet schedules;
    B. Pay any required fees or taxes; or
    C. Otherwise perform in accordance with the specifications.

27. Successful bidder shall defend, indemnify and save harmless County and all its elected officials, officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful bidder, or of any agent, employee, subcontractor or supplier of successful bidder in the execution of, or performance under, any contract which may result from bid award or which arises from any event or casualty happening on or within County premises themselves or happening upon or in any halls, elevators, entrances, stairways or approaches of or to such County facilities. Successful bidder shall pay any judgment with costs which may be obtained against County growing out of such injury or damages, and shall, upon request, provide a defense to County by counsel reasonably acceptable to County. Successful bidder's indemnity hereunder shall include, but is not limited to, claims relating to patent, copyright or trademark infringement, and the like, arising out of the goods and services provided by successful bidder.

28. Successful bidder shall warrant that all items/services shall conform with the specifications and/or all warranties provided under the Uniform Commercial Code and be free from all defects in material, workmanship and the like. Items supplied under a contract pursuant to this Request for Bids shall be subject to County's approval. Items found to be defective or not meeting specifications shall be replaced by successful bidder within two business days at no expense to County. Items not picked up within one (1) week after notification shall be deemed a donation to County and may be used or disposed of at County's discretion and without waiver of any other rights of County as to the item's nonconformity.

29. This document and any disputes arising hereunder shall be governed and construed according to the laws of the State of Texas, and will be performable exclusively in Hidalgo County, Texas.

30. The successful bidder shall not assign, sell, transfer or convey its rights under any awarded contract, in whole or in part, without the prior written consent of County.

**HIDALGO COUNTY**
**"POLYGRAPH EXAMINERS FOR (PRE-EMPLOYMENT, CRIMINAL, SUITABILITY)"**
**BID NO.: 2014-018-02-05-MEG**

To: Martha L. Salazar, CPPB, Purchasing Agent
Hidalgo County Purchasing Department
2812 S Business Hwy 281 -New Administration Building
Edinburg, Texas 78539

In accordance with the Specifications, and subject to all laws and regulations of the United States and state and local laws, the undersigned bidder proposes and commits to furnish all labor, equipment, material, software and services as set forth in the documents hereinbefore mentioned. The undersigned bidder further agrees, upon acceptance of its bid, to execute a contract and/or Purchase Order issued by Hidalgo County for performing and completing the work described in the Specifications within the time stated and for the prices proposed in the documents attached hereto and made a part hereof.

Bidder acknowledges receipt of all of the pages of the documents referenced in the Invitation to Bid Checklist presented in connection with this procurement. Bidder understands that Hidalgo County reserves the right to reject any or all bids and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best bid.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) calendar days after the scheduled closing time for receiving bids, as contained in the Specifications.

Respectfully submitted,

Bidder: _____

Address: _____

By: _____

Printed Name: _____

Title: _____

**Specifications:**
Hidalgo County Sheriff's Office is seeking qualified vendor(s) to furnish Polygraph Examiners on an "As Needed Basis". The following are the minimum requirements and/or specifications that will be acceptable. Any bid that does not meet the minimum requirements and/or specifications will be rejected these specifications are to include, but not limited to, the following:

**Location(s):**
Hidalgo County Sheriff's Office 711 El Cibolo Road Edinburg, Texas 78542

**Type of Examinations:**
All exam questions will be reviewed and approved by the Hidalgo County Sheriff's Office prior to the exam.

- Criminal
- Pre-Employment
- Suitability

**Requirements:**
Polygraph Examiner must be licensed by the State of Texas and keep current with renewals at his/her expense. (Must submit a copy of certification)

Polygraph Examiner must have a minimum of Five (5) years experience in specific field of Law Enforcement.

Polygraph Examiner (s) must follow rules set out by Texas Department of Licensing and Regulation 16 Texas Administrative Code, Chapter 88

**Response Time:**
Polygraph Examiner must be available within 8 hours of notification.

**Response of Enquiry:**

- Please specify timeframe for exam(s) results, both verbal & documented
- Provide days/hrs of the operation services will be available.
- List an alternate location where polygraph examinations may be provided other than at the Hidalgo County Sheriff's Office.

**Standard Terms & Condition:**

1. All services will be done on an **"As Needed Basis".**
2. Term of contract is for one (1) year period with County's option to renew contract for additional two (2) one (1) year term under the same rates and conditions.
3. County reserves the right to continue this bid for an additional sixty (60) day grace period at the end of the contract term for unforeseen delay in award of new bid for next contract term.
4. County will seek purchases from state awarded vendors whenever it is, its best interest to do so.
5. After bid is awarded and successful awarded contractor defaults in meeting the general instructions to bidders(s) and/or in complying with the contract agreement, Hidalgo County reserves the right to seek the services of the next lowest bidder(s). In such event, Hidalgo County shall charge the successful bidder the difference for any additional cost to the County.

6. Any contract awarded to a successful bidder will be in effect until;
   a) The contract expires
   b) Delivery acceptance of products and/or performance of services ordered, or
   c) Terminated by County with thirty (30) days written notice prior to be cancellation.

7. Hidalgo County reserves the right to award the bid to MULTIPLE bidders if the County determines it is in its best interest to do so.

8. The successful awarded vendor will submit and maintain General Liability, Auto Liability and Workers Compensation insurance and its limits through out the contract term, as described and listed in: Exhibit "C" Insurance Requirements.

9. Hidalgo County reserves the right to reject any/all bids, to waive any/all formalities or technicalities, or to accept the bid considered the best and most advantage to the County.

10. Hidalgo County reserves the right to hold bids for a period of ninety (90) days without taking any action.

11. All costs and expenses associated with the preparation and submission of (bids, proposals and/or quotes) shall be the responsibility of the bidder and no reimbursements for such charges or expenses shall be passed onto Hidalgo County.

**Market Volatility and Unit Price Adjustments:**
Hidalgo County recognizes that during periods of national crisis and unstable economic conditions, unforeseen price increases might affect costs for goods and services contracted on an annual basis. The following procedure may be employed to mediate price volatility:

**1. Requesting Price Adjustment:** Upon written request of the Vendor to the County Purchasing Agent, the County may review evidence of prevailing industry-wide market conditions that warrant an adjustment in bid prices contained in the contract.

- A Vendor must tie any price change clause to an industry-wide or otherwise nationally recognized index, or some other form of verifiable document. Such written request must be accompanied by a certified copy of the suppliers advisory or notification to the vendor of the price changes.
- The Vendor must put the Purchasing Agent on the mailing lists for such publications so that the Purchasing Agent can monitor said changes. Such membership shall be at no cost to the County.
- The County Purchasing Agent retains the right to determine whether or not such proposed price changes are in the best interest of the County.
- No price escalation will be authorized in excess of the amount of the increase referred to in the suppliers notice.
- The County may only grant a price increase if the evidence presented is deemed reliable. Should the County allow a price increase, the approved price change shall be honored for all orders received by the vendor or contractor after the effective date of such price change. Approved price changes are not applicable to orders already issued and in process at time of price change.

**2. Price Reduction:** Vendor shall notify the County at the time when the Vendor's costs for items and/or supplies reduce due to stabilization in the market at which time prices for items

on this contract shall be reduced accordingly. Failure by the Vendor to notify the County of a decrease in costs for items and/or supplies for which the Vendor was granted a price adjustment, may result in immediate termination of this contract and the County shall not be obligated to pay the Vendor the difference between the contract price and the price adjustment.

3. **Time frame for Adjusted Price Increases:** Price increases are only valid for the quarter in which they are requested and approved. Prices shall return to the original contract price at the beginning of the following quarter unless a Vendor notifies the County in writing within ten (10) days of expiration of the quarter in which the price increase is in effect, that it desires to have the price increase continue or that the Vendor is requesting a different price increase for the following quarter. Such request must be supplemented with sufficient justification to demonstrate that the price increase remains necessary. The County Purchasing Department shall have sole discretion whether to grant the price increase extension. The County too, shall have discretion to unilaterally reduce, eliminate or extend a price adjustment to the Vendor at any time upon written notice from the County to the Vendor demonstrating justification for such reduction, elimination or extension of the price adjustment.

4. **Allowable Review Periods:** Price adjustment reviews may only be requested by the Vendor on a quarterly basis. However, the County may at its own discretion, conduct temporary price adjustment reviews at any time. The County Purchasing Agent and/or the County Auditor reserve the right to audit and/or examine any pertinent books, documents, papers, records or invoices relating directly to the contract transaction in question after reasonable notice and during normal business hours.

5. **Dollar Limit to Price Changes:** The total increase in contract price shall not exceed twenty-five percent (25%) of the original contract price during the contract term.

**ADDITIONAL INFORMATION**

All costs and expenses associated with the preparation and submission of bids shall be the responsibility of the bidder and no reimbursements for such charges or expenses shall be passed on to Hidalgo County.

Hidalgo County is requesting that any and all questions, inquiries, and clarifications regarding quotes, bids, proposals, or statements of qualifications be addressed to, Martha L. Salazar, CPPB, Purchasing Agent, 2802 S. Bus. Hwy 281, Edinburg, Texas 78539. **TELEPHONE INQUIRIES WILL NOT BE ACCEPTED.**

**ALL WRITTEN QUESTIONS WILL BE ACCEPTED VIA EMAIL NO LATER THAN, January 28, 2014 at 5:00 p.m.** at elena.gomez@co.hidalgo.tx.us . Responses to said inquiries will be sent to all applicants via facsimile by no later than **January 30, 2014 at 5:00 P.M.**

| Hours of Operations | | |
|---|---|---|
| | **Days** | **Hours** |
| Criminal | | |
| Pre- Employment | | |
| Suitability | | |
| **Timeframe for results** | | |
| | **Days** | **Hours** |
| Verbal | | |
| Documentation | | |
| Alternate test location(s) | | |

**BIDDER/COMPANY NAME:** _____

**ADDRESS:** _____

**CITY/STATE/ZIP CODE:** _____

**PHONE & FAX NO.'S:** _____

**CELL PHONE:** _____

**AUTHORIZED SIGNATURE:** _____

**PRINTED NAME:** _____

**TITLE:** _____

**EMAIL:** _____

# EXHIBIT "C"

## Insurance Requirements
## Applicable to the Acquisition of Goods and /or Services
## (other than Professional Services)

The Bidder awarded the contract shall furnish proof of insurance, which will also include any subcontractor that is subcontracted by the bidder in at least the following limits, to be in place prior to providing any services under this Contract and to continue at all times in force in effect during the term of this Contract:

1. A Five Hundred Thousand Dollar ($500,000.00) Comprehensive General Liability insurance policy providing additional coverage to all underlying liabilities of County.

2. Automobile liability insurance policy with limits of at least Three Hundred Thousand Dollars ($300,000.00) per person and Five Hundred Thousand Dollars ($500,000.00) per occurrence. Coverage should include injury to or death of persons and property damage claims with limits up to Five Hundred Thousand ($500,000.00) arising out of the services provided to County hereunder.

3. Uninsured/Underinsured motorist coverage in an amount equal to the bodily injury limits set forth immediately above;

4. Workers compensation insurance in amounts established by Texas law, unless the Bidder is specifically exempted from the Texas Workers Compensation Act, Texas Labor Code Chapter 401, et. seq.

**Hidalgo County will only accept certificates of insurance on an Acord form (as attached hereto).** Certificates of insurance shall name Hidalgo County as additional insured and must be submitted to County for approval prior to any services being performed by Contractor. Each policy of insurance required hereunder shall extend for a period equivalent to, or longer than the term of the Contract, and any insurer hereunder shall be required to give at least thirty (30) days written notice to the County prior to the cancellation of any such coverage on the termination date, or otherwise. This Contract shall be automatically suspended upon the cancellation, or other termination, of any required policy of insurance hereunder, and such suspension shall continue until evidence adequate replacement coverage is provided to County. If replacement coverage is not provided within thirty (30) days following suspension of the Contract, this Contract shall automatically terminate.

Revised 10/01/08

# ACORD CERTIFICATE OF INSURANCE

DATE (MM/DD/YY)

| PRODUCER | THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. |
|---|---|
| | **INSURERS AFFORDING COVERAGE** |
| INSURED | INSURER A: |
| | INSURER B: |
| | INSURER C: |
| | INSURER D: |
| | INSURER E: |

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THER TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | POLICY NUMBER | POLICY EFFECTIVE DATE (MM/DD/YY) | POLICY EXPIRATION DATE | LIMITS | |
|---|---|---|---|---|---|---|
| A | **GENERAL LIABILITY**<br>☐ COMMERCIAL GENERAL LIABILITY<br>☐ CLAIMS MADE ☐ OCCUR<br>☐ OWNER'S & CONT PROT<br>☐ OWNER'S PROTECTIVE LIABILITY<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>☐ POLICY ☐ PROJECT ☐ LOC | | | | EACH OCCURRENCE | $ |
| | | | | | FIRE DAMAGE (Any one fire) | $ |
| | | | | | MED (Any one person) | $ |
| | | | | | PERS & ADV INJURY | $ |
| | | | | | GENERAL AGGREGATE | $ |
| | | | | | PRODUCTS – COMP/OP AGG | $ |
| | | | | | | |
| B | **AUTOMOBILE LIABILITY**<br>☐ ANY AUTO<br>☐ ALL OWNED AUTOS<br>☐ SCHEDULED AUTOS<br>☐ HIRED AUTOS<br>☐ NON-OWNED AUTOS | | | | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | | | | | BODILY INJURY (Per person) | $ |
| | | | | | BODILY INJURY (Per accident) | $ |
| | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | **GARAGE LIABILITY**<br>☐ ANY AUTO | | | | AUTO ONLY-EA ACCIDENT | $ |
| | | | | | OTHER THAN AUTO ONLY EA ACC | $ |
| | | | | | AGG | $ |
| C | **EXCESS LIABILITY**<br>☐ OCCUR ☐ CLAIMS MADE<br>☐ DEDUCTIBLE<br>☐ RETENTION $ | | | | EACH OCCURENCE | $ |
| | | | | | AGGREGATE | $ |
| | | | | | | $ |
| | | | | | | $ |
| | | | | | | $ |
| D | **WORKERS COMPENSATION AND EMPLOYER'S LIABILITY** | | | | WC STATU-TORY LIMITS ☐ OTHER | |
| | | | | | E.L. EACH ACCIDENT | $ |
| | | | | | E.L. DISEASE-EA EMPLOYEE | $ |
| | | | | | E.L. DISEASE-POLICY LIMIT | $ |
| | **OTHER** | | | | | |

DESCRIPTION OF OPERATIONS / LOCATION / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

**County of Hidalgo shall be named as additional insured on all Commercial General Liability policies.**

| CERTIFICATE HOLDER | ADDITIONAL INSURED; INSURER LETTER: _____ CANCELLATION |
|---|---|
| **Hidalgo County**<br>**Attn: Purchasing Department**<br>**2812 S Highway Bus. 281**<br>**Edinburg, Texas 78539** | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BY CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.<br>AUTHORIZED REPRESENTATIVE |

SAMPLE

# Insurance Requirement Acknowledgment

I, _____, authorized representative for _____,
Company/Vendor

hereby acknowledge receipt of the County's required insurance limits. Said requirements:

☐ will be acquired within 10 working days after notification from Purchasing Department of bid awarded by the Hidalgo County Commissioners' Court;

☐ will acquire additional amounts required to meet the County's requirements within 10 working days after notification from Purchasing Department of bid award by the Hidalgo County Commissioners' Court; currently carry the following:

Automobile Liability: $_____ General Liability: $_____

☐ have already been met, see attached copy of insurance certificate.

_____ _____.
Authorized Representative Date

**Notice to Bidder:**
A certificate of insurance for the required insurance limits shall be provided to the Purchasing Department's Contract Managers in order to qualify for award of bid and to execute a contract between your Company and the County

Failure to provide Certificates of Insurance to the Purchasing Department's Contract Managers will cause the bid award to be rescinded and re-awarded to next lowest bidder. Certificates of Insurance will be monitored and verified on a **quarterly basis** to ensure coverage policy is in place. It is the Company's obligation to maintain the appropriate insurance coverage throughout the term of the contract.

**THIS FORM MUST ACCOMPANY BID PACKET**

# PROJECT REQUIREMENTS ACKNOWLEDGMENT

This is to certify that I, _____, possess all of the APPLICABLE:

1. Licenses: _____.
2. Bonds: _____.
3. Certificates: _____.
4. Permits: _____.
5. Other: _____.

necessary to carry out the required project. Furthermore, I am providing copies of the required documentation so that, if my company is awarded this bid, I may be eligible to enter into a contract with Hidalgo County and proceed to complete the project in a timely manner.

* Any licenses, bonds, certificates, permits, etc. which are required must be presented as part of the bid packet in order to expedite the bid evaluation process. Failure to provide said documentation will result in the disqualification of your bid.

_____ _____.

Authorized Signature Date

_____.

Company

_____.

Address

_____.

City, State, Zip

# EXHIBIT "D"

## CONFLICT OF INTEREST QUESTIONNAIRE — FORM CIQ

For vendor or other person doing business with local governmental entity

**This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.**

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code.

A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

| OFFICE USE ONLY |
| --- |
| Date Received |

1 **Name of person who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 **Name of local government officer with whom filer has employment or business relationship.**

_____
Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A: Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

☐ Yes ☐ No

B: Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

C: Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ No

D. Describe each employment or business relationship with the local government officer named in this section.

4

_____ _____
Signature of person doing business with the governmental entity Date

Adopted 06/29/2007

# HIDALGO COUNTY
# PURCHASING DEPARTMENT
# Bidder/Vendor Application

**Complete in print or type. Please return this application to the Hidalgo County Purchasing Department thru Facsimile: (956) 318-2629 or Fax (956) 292-7612 in person or regular mail to: 2812 S. Business Hwy. 281 , Edinburg, Texas 78539 or email: purchasing@co.hidalgo.tx.us**

| | |
|---|---|
| **Company Name:** | **Telephone No. (  )** |
| **dba Name:** | |
| **Legal Name:** | |
| **Mailing Address :** | **Fax No. (  )** |
| **Physical Address:** | |
| **City, State, Zip** | **Tax I.D. No.** |
| **Remit to Address :** | **City, State, Zip** |
| **E-Mail Address:** | |
| **Representative(s) Name(s) & Title(s)** | |

**Type of Organization (check one):** _____ Individual _____ Partnership _____ Corporation _____Non-Profit _____ LLC _____ Sole Proprietor _____ Other, Specify

**State Identification No.**_____ **(Please attached completed W-9 form with this application)**

**Federal Identification No. or (if individual) SS No.**

**State of Incorporation:** _____ **Date:**_____ **Other:**

**Type of Business (check one):** _____ Manufacturer _____ Wholesaler _____ Retailer _____ Broker _____ Distributor _____ Service Organization _____ Other, Specify

**Name & Title of Person(s) Authorized to Sign Bids, Proposals, and/or Contracts:**

**Small and/or Disadvantaged Business Information (check application criteria)**

**Small Business:** _____ **Disadvantaged Business (At Least 51% Ownership)**

- ☐ Less than 125,000 annual gross receipt
- ☐ Less than 250,000 annual gross receipt
- ☐ Less than 499,000 annual gross receipt
- ☐ More than 500,000 annual gross receipt

- ☐ Black American
- ☐ Hispanic American
- ☐ Asian Pacific American

- ☐ Native American
- ☐ Women
- ☐ Other

**Have you been certified as a HUB or an MBE/WBE source?:** ☐ Yes ☐ No

**Indicate Certification No.(s):**_____ **or are Certificate(s) attached?:** ☐ Yes ☐ No

**What type of product(s) is/are solicited by your company?:**

**Would you like to be provided with specifications for procurements of such products?:** ☐ Yes ☐ No

**To Be Completed by the County: Rec'd by (Purchasing):**_____ **Date Rec'd by (Purchasing):**

**Date Forwarded Information to Auditor's Office:**_____**Entry Date:** _____ **Vendor No.:**

Revised12/14/06

## HISTORICALLY UNDERUTILIZED BUSINESS (HUB) DECLARATION

The primary objective of the Hidalgo County HUB Program is to ensure Historically Underutilized Businesses receive a fair and equal opportunity for participation in the County's procurement process. This fact holds true for Services (Professional & Non-Professional), Commodities, and Construction contracts and any subcontracts thereto. The program strongly encourages Prime Contractors to provide subcontracting opportunities to Certified Hub Contractors/Vendors. Our goal for HUB contractor/vendor participation, as well as HUB subcontractor participation is 30%. To be considered as a "Certified HUB Contractor/Vendor" the contractor/vendor must have been certified by, and hold a current and valid certification with any of the three agencies listed below.

Have you been Certified as a HUB or an MBE/WBE source?: ❒Yes ❒ No

If yes, by whom?: ❒ Texas Building & Procurement Commission ❒ Other_____

Indicate Certification No(s).:_____ or Are Certificate(s) Attached?: ❒ Yes ❒ No

## LIST OF CERTIFIED HUB SUBCONTRACTORS

(Attach additional pages if necessary)

What percentage of the Bid, RFP,or RFQ is to be subcontracted with Certified HUB sources?: _____%
(List HUB Subcontractor information below).

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ❒Texas Building & Procurement Commission ❒ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ❒Texas Building & Procurement Commission ❒ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

HUB Subcontractor Name: _____ HUB Status:
Certifying Agency (Check all applicable): ❒Texas Building & Procurement Commission ❒ Other
Address: _____ City: _____ State: _____ Zip:
Contact Person: _____ Title: _____ Phone No.: ( )
Subcontract Amount: $_____ Description of Work to be Performed:

---

Form **W-9**
(Rev. November 2005)
Department of the Treasury
Internal Revenue Service

# Request for Taxpayer Identification Number and Certification

**Give form to the requester. Do not send to the IRS.**

Print or type. See Specific Instructions on page 2.

Name (as shown on your income tax return)

Business name, if different from above

Check appropriate box: ☐ Individual/ Sole proprietor ☐ Corporation ☐ Partnership ☐ Other ► ..... ☐ Exempt from backup withholding

Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

City, state, and ZIP code

List account number(s) here (optional)

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

**Social security number**

or

**Employer identification number**

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. person (including a U.S. resident alien).

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 4.)

**Sign Here** Signature of U.S. person ► Date ►

## Purpose of Form

A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

**U.S. person.** Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee.

In 3 above, if applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

**Note.** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

For federal tax purposes, you are considered a person if you are:

- An individual who is a citizen or resident of the United States,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, or
- Any estate (other than a foreign estate) or trust. See Regulations sections 301.7701-6(a) and 7(a) for additional information.

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

• The U.S. grantor or other owner of a grantor trust and not the trust, and

• The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

***Example.*** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments (after December 31, 2002). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the Part II instructions on page 4 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate Instructions for the Requester of Form W-9.

Also see *Special rules regarding partnerships* on page 1.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

# Specific Instructions

## Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

**Limited liability company (LLC).** If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, enter the owner's name on the "Name" line. Enter the LLC's name on the "Business name" line. Check the appropriate box for your filing status (sole proprietor, corporation, etc.), then check the box for "Other" and enter "LLC" in the space provided.

**Other entities.** Enter your business name as shown on required federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

**Note.** You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).

## Exempt From Backup Withholding

If you are exempt, enter your name as described above and check the appropriate box for your status, then check the "Exempt from backup withholding" box in the line following the business name, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

**Exempt payees.** Backup withholding is not required on any payments made to the following payees:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),

2. The United States or any of its agencies or instrumentalities,

3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,

4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or

5. An international organization or any of its agencies or instrumentalities.

Other payees that may be exempt from backup withholding include:

6. A corporation,

7. A foreign central bank of issue,

8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,

9. A futures commission merchant registered with the Commodity Futures Trading Commission,

10. A real estate investment trust,

11. An entity registered at all times during the tax year under the Investment Company Act of 1940,

12. A common trust fund operated by a bank under section 584(a),

13. A financial institution,

14. A middleman known in the investment community as a nominee or custodian, or

15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, 1 through 15.

| IF the payment is for . . . | THEN the payment is exempt for . . . |
|---|---|
| Interest and dividend payments | All exempt recipients except for 9 |
| Broker transactions | Exempt recipients 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker |
| Barter exchange transactions and patronage dividends | Exempt recipients 1 through 5 |
| Payments over $600 required to be reported and direct sales over $5,000 [1] | Generally, exempt recipients 1 through 7 [2] |

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees; and payments for services paid by a federal executive agency.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner LLC that is disregarded as an entity separate from its owner (see *Limited liability company (LLC)* on page 2), enter your SSN (or EIN, if you have one). If the LLC is a corporation, partnership, etc., enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at *www.socialsecurity.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer ID Numbers under Related Topics. You can get Forms W-7 and SS-4 from the IRS by visiting *www.irs.gov* or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** *A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.*

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt recipients, see *Exempt From Backup Withholding* on page 2.

**Signature requirements.** Complete the certification as indicated in 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

## What Name and Number To Give the Requester

| For this type of account: | Give name and SSN of: |
|---|---|
| 1. Individual | The individual |
| 2. Two or more individuals (joint account) | The actual owner of the account or, if combined funds, the first individual on the account [1] |
| 3. Custodian account of a minor (Uniform Gift to Minors Act) | The minor [2] |
| 4. a. The usual revocable savings trust (grantor is also trustee) | The grantor-trustee [1] |
| b. So-called trust account that is not a legal or valid trust under state law | The actual owner [1] |
| 5. Sole proprietorship or single-owner LLC | The owner [3] |
| **For this type of account:** | **Give name and EIN of:** |
| 6. Sole proprietorship or single-owner LLC | The owner [3] |
| 7. A valid trust, estate, or pension trust | Legal entity [4] |
| 8. Corporate or LLC electing corporate status on Form 8832 | The corporation |
| 9. Association, club, religious, charitable, educational, or other tax-exempt organization | The organization |
| 10. Partnership or multi-member LLC | The partnership |
| 11. A broker or registered nominee | The broker or nominee |
| 12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments | The public entity |

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or "DBA" name on the second name line. You may use either your SSN or EIN (if you have one). If you are a sole proprietor, IRS encourages you to use your SSN.

[4] List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules regarding partnerships* on page 1.

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, the District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

# E HIBIT B

VENDOR'S BID PRICE & TABULATION

| Hours of Operations | Days | Hours | Unit Price | Total Amount |
|---|---|---|---|---|
| Criminal | M-F | 8A-5P | $250.00 | $250.00 |
| Pre-Employment | M-F | 8A-5P | $250.00 | $250.00 |
| Suitability | M-F | 8A-5P | $250.00 | $250.00 |

* Also as required. RM

| Timeframe for results | Days | Hours |
|---|---|---|
| Verbal | Same Day | 8A-5P |
| Documentation | 1-2 Days | 8A-5P |
| Alternate test location(s) | 624 N. Tio, Ste. B, Weslaco, TX. 78596 | |

BIDDER/COMPANY NAME: Purpose Driven Polygraph Investigative Consultants LLC
ADDRESS: 624 N. Tio Ste. B.
CITY/STATE/ZIP CODE: Weslaco, Texas 78596
PHONE & FAX NO.'S: 956-968-7065 - FAX 968-7065
CELL PHONE: 956-266-3090
AUTHORIZED SIGNATURE:
PRINTED NAME: Ronaldo Muñoz
TITLE: Owner/Pres.
EMAIL: ronnie6199@gmail.com

OPENED
02/05/14
9:33am
Witnessed

| **PURPOSE DRIVEN<br>624 N. TIO STE B<br>WESLACO, TEXAS 78596** | | | | |
|---|---|---|---|---|
| **Hours of Operations** | **Days** | **Hours** | **Unit Price** | **Total Amount** |
| Criminal | M-F | 8-5 PM | $250.00 | $250.00 |
| Pre-Employment | M-F | 8-5 PM | $250.00 | $250.00 |
| Suitability | M-F | 8-5 PM | $250.00 | $250.00 |

| **Timeframe for results** | **Days** | **Hours** |
|---|---|---|
| Verbal | SAME DAY | 8-5 PM |
| Documentation | 1-2 DAY | 8-5 PM |
| Alternate test location(s) | 624 N. TIO, STE B<br>WESLACO, TEXAS 78596 | |

# E HIBIT C

INSURANCE REQUIREMENTS

OP ID: DR

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 02/19/2014

**THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.**

**IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).**

| | |
|---|---|
| **PRODUCER**<br>AMIS/Alliance Mktg. & Ins Serv<br>CA Surplus Line Lic # 0E25579<br>355 Via Vera Cruz #7<br>San Marcos, CA 92078<br>William R. West | CONTACT NAME:<br>PHONE (A/C, No, Ext):<br>FAX (A/C, No):<br>E-MAIL ADDRESS:<br>PRODUCER CUSTOMER ID #: PURPO-1 |
| **INSURED**<br>Ronaldo Munoz<br>d/b/a Purpose Driven Polygraph<br>Investigative Consultants,LLC<br>4403 N Mile 5 1/2 West<br>Weslaco, TX 78596 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A : First Mercury Insurance Co. — 10657<br>INSURER B :<br>INSURER C :<br>INSURER D :<br>INSURER E :<br>INSURER F : |

**COVERAGES** **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| A | **GENERAL LIABILITY**<br>X COMMERCIAL GENERAL LIABILITY<br>[ ] CLAIMS-MADE [X] OCCUR<br>X **Errors & Omission**<br>X **Owners & Contract**<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>X POLICY [ ] PRO-JECT [ ] LOC | | | SE-CGL-0000002850-03 | 12/19/2013 | 12/19/2014 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG<br> | $ 1,000,000<br>$ 100,000<br>$ 5,000<br>$ 1,000,000<br>$ 5,000,000<br>$ Incl in Agg<br>$ |
| | **AUTOMOBILE LIABILITY**<br>[ ] ANY AUTO<br>[ ] ALL OWNED AUTOS<br>[ ] SCHEDULED AUTOS<br>[ ] HIRED AUTOS<br>[ ] NON-OWNED AUTOS<br>[ ] | | | | | | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (PER ACCIDENT)<br> | $<br>$<br>$<br>$<br>$<br>$ |
| | [ ] **UMBRELLA LIAB** [ ] OCCUR<br>[ ] **EXCESS LIAB** [ ] CLAIMS-MADE<br>[ ] DEDUCTIBLE<br>[ ] RETENTION $ | | | | | | EACH OCCURRENCE<br>AGGREGATE<br> | $<br>$<br>$ |
| | **WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] **(Mandatory in NH)**<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N / A | | | | | [ ] WC STATU-TORY LIMITS [ ] OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | <br>$<br>$<br>$ |
| | | | | | | | | |

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)**

Polygraph License #: 1099

Investigation, TX --

**CERTIFICATE HOLDER**

Hildago County
100 N Closner
Edinburg, TX 78539

**CANCELLATION**

**SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.**

**AUTHORIZED REPRESENTATIVE**

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 02/18/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | |
|---|---|
| PRODUCER<br>Tito Resendez, Agent<br>State Farm Insurance<br>StateFarm 922 E Harrison<br>Harlingen, TX 78550-7122 | CONTACT NAME: Lauren Haire<br>PHONE (A/C, No, Ext): 956-423-8486 FAX (A/C, No): 956-423-8765<br>E-MAIL ADDRESS: Lauren.Haire.KQL3@statefarm.com |
| INSURED<br>Ronaldo Munoz DBA: Purpose Driven Polygraph<br>Investigative Consultants, LLC<br>624 N Tio Ste. B<br>Weslaco, TX 78596 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A : State Farm Mutual Automobile Insurance Company — 25178<br>INSURER B :<br>INSURER C :<br>INSURER D :<br>INSURER E :<br>INSURER F : |

**COVERAGES** **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | GENERAL LIABILITY | | | | | | EACH OCCURRENCE | $ |
| | ☐ COMMERCIAL GENERAL LIABILITY | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $ |
| | ☐ CLAIMS-MADE ☐ OCCUR | | | | | | MED EXP (Any one person) | $ |
| | | | | | | | PERSONAL & ADV INJURY | $ |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | GENERAL AGGREGATE | $ |
| | ☐ POLICY ☐ PRO-JECT ☐ LOC | | | | | | PRODUCTS - COMP/OP AGG | $ |
| | | | | | | | | $ |
| A | AUTOMOBILE LIABILITY | | | 132 8839-A15-53E-001 | 01/15/2014 | 07/15/2014 | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | ☐ ANY AUTO | | | | | | BODILY INJURY (Per person) | $ 100,000 |
| | ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS | | | | | | BODILY INJURY (Per accident) | $ 200,000 |
| | ☒ HIRED AUTOS ☐ NON-OWNED AUTOS | | | | | | PROPERTY DAMAGE (Per accident) | $ 50,000 |
| | | | | | | | | $ |
| | ☐ UMBRELLA LIAB ☐ OCCUR | | | | | | EACH OCCURRENCE | $ |
| | ☐ EXCESS LIAB ☐ CLAIMS-MADE | | | | | | AGGREGATE | $ |
| | ☐ DED ☐ RETENTION $ | | | | | | | $ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N | | | | | | ☐ WC STATU-TORY LIMITS ☐ OTH-ER | |
| | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? ☐ N/A | | | | | | E.L. EACH ACCIDENT | $ |
| | (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | E.L. DISEASE - EA EMPLOYEE | $ |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | $ |
| | | | | | | | | |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

**CERTIFICATE HOLDER**

**Ronaldo Munoz DBA: Purpose Driven Polygraph**
**Investigative Consultants, LLC**
**624 N Tio Ste. B**
**Weslaco, TX 78596**

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Tito Resendez by Lauren Haire

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Affidavit & Indemnity Agreement

Date: 2-13-2014

Affiant Ronaldo Muñoz

Affiant on oath swears that the following statements are true and are within the personal knowledge of Affiant.

Affiant Ronaldo Muñoz is a sole proprietor doing business as Purpose Driven PIC LLC with Hidalgo County. Affiant will provide service for Hidalgo County.

Affiant further, states that he has no employees and does not anticipate employing any. In the event Affiant does employee any staff during the contract, Affiant must immediately notify Hidalgo County and obtain the Workers Compensation required by law.

Affiant agrees to indemnify, defend and hold harmless the County of Hidalgo and its agents, employees and elected officials from and against any and all claims, suits, demands and causes of action, of any kind or nature, arising out of or in any way relating to the services performed by Affiant.

Further Affiant sayeth not.

Printed Name of Affiant: Ronaldo Muñoz

SWORN AND SUBSCRIBED TO under oath before me on February 14, 2014.

Notary Public, State of Texas

MIRTHA M GARCIA
Notary Public, State of Texas
My Commission Expires
MARCH 11, 2017

**Zimbra** **leticia.saenz@co.hidalgo.tx.us**

# Re: Contract# C-14-018-02-25-Ronaldo Munoz d/b/a Purpose Driven Polygraph Investigative Consultants, LLC-HCSO

**From :** scrain@atlashall.com Wed, Feb 26, 2014 02:23 PM

**Subject :** Re: Contract# C-14-018-02-25-Ronaldo Munoz d/b/a Purpose Driven Polygraph Investigative Consultants, LLC-HCSO 1 attachment

**To :** Leticia H. Saenz <leticia.saenz@co.hidalgo.tx.us>

External images are not displayed. Display images below

Good to go

-----Original Message-----
**From:** Leticia H. Saenz [mailto:leticia.saenz@co.hidalgo.tx.us]
**Sent:** Wednesday, February 26, 2014 03:16 PM
**To:** 'Steve Crain', 'Marynel Trevino'
**Subject:** Re: Contract# C-14-018-02-25-Ronaldo Munoz d/b/a Purpose Driven Polygraph Investigative Consultants, LLC-HCSO
**Importance:** High

---

Good afternoon, Mr. Crain-

Please review and approve as to form contract# **C-14-018-03-05** (attached hereto) with modification as advised**.**

Please advise.

Thank you.

***Leticia H. Saenz, CPPB/Contracts Manager***
*Hidalgo County Purchasing Department*
*2812 South Business Highway 281*
*Edinburg, Texas 78539*
***P****(956) 318-2626* ***F****(956) 318-2629*
*Email: leticia.saenz@co.hidalgo.tx.us*

Laughing**...DON'T WORRY...BE HAPPY...**Laughing

---

**From:** "Steve Crain" <scrain@atlashall.com>
**To:** "Leticia H. Saenz" <leticia.saenz@co.hidalgo.tx.us>
**Sent:** Tuesday, February 25, 2014 4:35:36 PM
**Subject:** RE: Contract# C-14-018-02-25-Ronaldo Munoz d/b/a Purpose Driven Polygraph Investigative Consultants, LLC-HCSO

**AI-43374** **Closed Session 16. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Monica Badillo, EXECUTIVE OFFICE

**Department:** EXECUTIVE OFFICE

## Information

### CAPTION

C-2643-11-C; Thomas Fonseca et al v. City of Weslaco and County of Hidalgo

### BACKGROUND

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/27/2014 02:22 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Monica Badillo Started On: 02/27/2014 02:04 PM

Final Approval Date: 02/28/2014

**AI-43344** **Closed Session 16. D.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Claim of Veronica Espinoza

**BACKGROUND**

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/26/2014 04:00 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/26/2014 02:57 PM

Final Approval Date: 02/28/2014

**AI-43349** **Closed Session 16. E.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Claim of Juan L. Fonseca

**BACKGROUND**

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/26/2014 04:01 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/26/2014 03:37 PM

Final Approval Date: 02/28/2014

**AI-43387** **Closed Session 16. F.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Claim of Carlos Silva

**BACKGROUND**

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/27/2014 04:54 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/27/2014 04:31 PM

Final Approval Date: 02/28/2014

**AI-43375** **Open Session 17. C.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted By:** Monica Badillo, EXECUTIVE OFFICE

**Department:** EXECUTIVE OFFICE

## Information

### CAPTION

C-2643-11-C; Thomas Fonseca et al v. City of Weslaco and County of Hidalgo

### BACKGROUND

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/27/2014 02:22 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Monica Badillo Started On: 02/27/2014 02:05 PM

Final Approval Date: 02/28/2014

**AI-43345** **Open Session 17. D.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Claim of Veronica Espinoza

**BACKGROUND**

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/26/2014 04:01 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/26/2014 02:58 PM

Final Approval Date: 02/28/2014

**AI-43350** **Open Session 17. E.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Claim of Juan L. Fonseca

**BACKGROUND**

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/26/2014 04:02 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/26/2014 03:38 PM

Final Approval Date: 02/28/2014

**AI-43388** **Open Session 17. F.**

**CC REGULAR**

**Meeting Date:** 03/05/2014

**Submitted For:** Valde Guerra **Submitted By:** Aida Alvarez, SAFETY DIVISION

**Department:** SAFETY DIVISION

## Information

**CAPTION**

Claim of Carlos Silva

**BACKGROUND**

## Form Review

| Inbox | Reviewed By | Date |
|---|---|---|
| Budget & Management | Debbie Tamez | 02/27/2014 04:58 PM |
| Purchasing Department | Monica Badillo | 02/28/2014 05:19 PM |

Form Started By: Aida Alvarez Started On: 02/27/2014 04:34 PM

Final Approval Date: 02/28/2014