28D 1. AI-87333 Constable Pct. #3:
A. Requesting approval to rescind action taken by (CC 08/19/2022 AI-87036) for the purchase of body worn camera/video equipment and maintenance subscription (through our membership with Sourcewell contract #010720-WCH)from Motorola Solutions in the amount $51,166.00 for Hid. Co. Constable Precinct 3 due to lacking approval from legal.

B. Requesting authority for the purchase of body worn camera/video equipment and maintenance subscription from Motorola Solutions through our membership with Buy Board contract #648-21 in the amount of $51,166 for Hid. Co. Constable Precinct 3; with authority for County Judge to sign all required documents.

28D 2. AI-87321 Constable Pct. #4:
A. Requesting approval to rescind action taken (CC 08/09/2022 AI-86891) for the purchase of body worn camera/video equipment and maintenance subscription (through our membership with Sourcewell Contract #010720-WCH)from Motorola Solutions in the amount $51,166.00 due to lacking the approval from our legal team.
B. Requesting authority for the purchase of body worn camera/video equipment and maintenance subscription from Motorola Solutions through our membership with Buy Board contract #648-21 in the amount of $51,166.00 for Hid. Co. Constable Precinct 4; with authority for County Judge to sign all required documents.

28 E. **Pct. 1**

28E 1. AI-87244 A. Point of reference to inform Commissioners' Court of need to accept the sole incomplete response received for Lease of Parcel for Citizen Collection Site in Mercedes due to the need of service for constituents in that area

B. Requesting approval to award and contract [C-22-0421-09-06] with Amy Ayala, Owner of the Parcel of Land for the Citizen Collection Site in Mercedes, subject to receipt of 1295 form.

28 F. **Pct. 2** - Verbal application - Required forms

28F 1. AI-87346 Requesting acceptance and approval of the final negotiated Construction Contract [C-22-0094-06] (ARPA-22-122-109) to award the lowest responsible bidder, GO Underground, LLC in the amount of $3,694,806.64 as the General Contractor for the Hidalgo County Precinct 2 Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project with authority to issue notice to proceed.

28F 2. AI-87337 A. Requesting approval to execute the final form of a professional engineering services agreement (subject to HC/DA/Civil Section legal approval) for the provision of Geo-Technical & Construction Material Testing Services with Terracon Consultants [approved for negotiations CC 7/26/22 AI#86754] for the Hidalgo Health Clinic Renovation or Reconstruction Project (ARPA-22-122-088), subject to compliance with Form 1295.
B. Approval of Work Authorization No. 1 with an estimated cost of $12,125.00 submitted by Terracon Consultants (C-22-0449-09-06) to provide professional engineering services required for a property condition assessment and asbestos and indoor air quality services for the Hidalgo Health Clinic Renovation or Reconstruction Project.

28F 3. AI-87286 Requesting authority to purchase "Inclusive Accessibility Toolbar" with Recite Me, Na, LLC, in the amount of $1,500 per/year for a three (3) year term in the total amount of $4,500 providing Hidalgo County users with disabilities to accessible communication; with authority for the County Judge to sign all required documents.

28 G. **Pct. 3**

28G 1. AI-87279 Requesting authority to advertise with approval of RFP procurement packet as attached hereto for: Hidalgo County Pct. 3 and other areas within Hidalgo County on an as needed basis for "Emergency Ambulance

2 year base with 3, one year renewals
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

Carolyn Thornton
E-signed 2022-09-12 10:07AM CDT
carolyn.thornton@co.hidalgo.tx.us

THE STATE OF TEXAS §
§
COUNTY OF HIDALGO §

CONSTRUCTION CONTRACT
C-22-0094-09-06

(ARPA-22-122-109)

This Agreement entered into this 6th day of September, 2022, by and between the **County of Hidalgo** (hereinafter called the "**OWNER**," or "County") and, The **GO Underground, L.L.C** of Harlingen, State of Texas, hereinafter called "**CONTRACTOR**".

On or about March 10, 2021, the Federal Government passed the American Rescue Plan Act ("ARPA"), including the Coronavirus State and Local Fiscal Recovery Fund (the "SLFRF") which provides for direct payments to qualifying units of local governments navigating the impact of the COVID-19 outbreak. Pursuant to the U.S. Department of the Treasury's guidance, the funds may be used for certain eligible purposes to respond to the pandemic and its economic effects and to replace revenue lost due to the public health emergency, preventing cuts to government services. The guidance goes on to provide specific eligible uses for these funds.

As such, this Agreement is subject to the requirements applicable to federal awards as provided in 2 CFR 200 and the required contract provisions for contracts subject to federal award found in Appendix II to 2 CFR 200 are applicable to this Agreement and were included as part of the initial procurement packet. Additionally, the ARPA required contract provisions found in the attached ***ARPA Addendum*** *are applicable to this Agreement. All referenced required contract provisions are incorporated herein and made part of this agreement for all purposes, and Parties agree to abide by the same.*

WITNESSETH

WHEREAS, OWNER requested responses to notices for Request for Bid (RFB) for: "Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project" for the **County** (the "**Services**"). A copy of the procurement packet, including applicable specifications, is attached hereto as **Exhibit "A"** (the "**Procurement Packet**"), and is incorporated herein and made part of this agreement for all purposes;

WHEREAS, CONTRACTOR submitted a response to provide services in accordance with the specifications as proposed. A copy of the CONTRACTOR's response to the Procurement Packet is attached hereto as **Exhibit "B"** (the "**Response**"), and is incorporated herein and made part of this agreement for all purposes;

WHEREAS, OWNER has determined that CONTRACTOR has submitted the lowest and best bid to meet OWNER's requirements for the Service, as herein described.

WHEREAS, CONTRACTOR represents that it is qualified and desires to perform such services; and

WHEREAS, in recognition of and in consideration of CONTRACTOR's agreement to perform the Services in accordance with the Procurement Packet, the Commissioners Court of County awards this contract to CONTRACTOR.

NOW, THEREFORE, 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:

1. OWNER and CONTRACTOR hereby agree that this Contract is entered into in order to provide the Services to OWNER. This Contract does not extend to any third parties any duties or benefits conferred in any manner hereunder or otherwise. During the term of this Contract, CONTRACTOR shall be obligated and hereby promises and agrees to render and provide the Services in accordance with specifications and terms contained in Exhibit "A" Procurement Packet and Exhibit "B" CONTRACTOR's Response. If there are any discrepancies between this agreement and the General and Special Conditions of the Contract contained in Exhibit A, the General and Special Conditions of the Contract shall control.

2. **Project/Consideration**. Hereinafter called the project, for the sum of **Three Million Six hundred ninety four thousand eight hundred six dollars and sixty four cents($3,694,806.64)** and all extra work in connection therewith, under the terms and stated in the General and Special Conditions of the Contract (See Exhibit "A"); and at CONTRACTOR'S 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 General Conditions and Special Conditions printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by **[B2Z Engineering]**, entitled the 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 one hundred sixty (160) working calendar days thereafter. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of **$500.00** 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.

3. CONTRACTOR agrees in performing the Services that it will use proper professional standards, comply with any and all appropriate laws and regulations and devote such time as is necessary to safely and efficiently provide the Services.

4. **Licenses/Certifications**. As a condition of this Contract, CONTRACTOR shall hold and maintain throughout the term of this Contract all licenses and permits required, or which may be required by any authority, including the State of Texas, during the term hereof to provide the Services. CONTRACTOR further represents that it is qualified to perform and execute the services described above. If such license or permit is suspended or revoked, this Contract shall automatically be terminated and CONTRACTOR shall immediately notify the OWNER. CONTRACTOR shall provide the OWNER with all current state certifications, permits, and/or licenses with applicable seals, or as otherwise required by the State of Texas.

5. **Equipment**. If applicable, CONTRACTOR shall provide a sufficient number of trucks, vehicles, personnel and equipment available to safely and efficiently provide the Services. All trucks or vehicles operated by the CONTRACTOR 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 CONTRACTOR 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. CONTRACTOR shall provide a sufficient number of trucks, vehicles, personnel, and equipment available to safely and efficiently provide the Services.

6. **Independent Contractor**. The CONTRACTOR must comply with all applicable Hidalgo County policies and with any applicable federal, state, or local laws, regulations, orders, or ordinances applicable to the Services provided by CONTRACTOR under this Agreement. Notwithstanding the foregoing sentence, CONTRACTOR represents and maintains that CONTRACTOR is an Independent Contractor and is not an employee of the OWNER, or any agency thereof, and represents and warrants that CONTRACTOR does not desire or request any fringe benefits provided to employees of OWNER, and/or any agency of the OWNER, including but not limited to benefits associated with Hidalgo County's Civil Service Program. CONTRACTOR agrees to be responsible for any federal income tax, withholding or social security tax liability that might arise from payments received hereunder. CONTRACTOR will incur no financial obligation on behalf of the OWNER without prior written approval of the OWNER. CONTRACTOR will be responsible for all personal and professional expenses, including, but not limited to, membership fees and dues and expenses of attending conventions and meetings.

7. **Termination**. OWNER may terminate this Agreement without cause upon thirty (30) days written notice.

8. **Non-Exclusive Services of CONTRACTOR.** Hidalgo OWNER reserves the right to request this Product, Good and/or service from other sources other than the CONTRACTOR and shall not be in violation of any terms or conditions of this Agreement.

9. **Insurance**. Consistent with its status as an independent contractor and at its sole expense, CONTRACTOR agrees that throughout the duration of the work under this contract and any extension hereof, it shall provide and maintain any and all insurances and abide by any requirements which are specified in the Procurement Packet/Specifications and/or which may be necessary in providing Services or are otherwise required by law. Insurance policies shall cover, but are not limited to, CONTRACTOR's activities and all persons, vehicles, equipment and property connected with providing Services, to include theft or loss. The amount of insurance required shall be in accordance with amounts specified by the OWNER or as prescribed by law, but in no event shall any amount be less than the minimum amounts prescribed by law, including, but not limited to the Texas Tort Claims Act. These requirements do not establish limits of CONTRACTOR's liability. Any and all applicable insurance requirements and amounts are incorporated herein by reference for all purposes. CONTRACTOR is responsible for ensuring all required insurance policies are valid for the duration of the contract. All insurance policies are to be issued by an insurance company authorized to do business in the State of Texas and acceptable to OWNER. CONTRACTOR shall cause all subcontractors utilized by CONTRACTOR to also comply with these specifications. CONTRACTOR shall furnish to OWNER certificate(s) of coverage, and all renewals throughout the duration of the Project, issued by the insurer that such insurance is in full force and effect. (See **Exhibit "C"** attached hereto and incorporated herein for all purposes). For each applicable policy, CONTRACTOR shall name the OWNER as an additional insured. CONTRACTOR shall notify OWNER a minimum of thirty (30) days in advance of cancellation of all or part of a policy. CONTRACTOR shall make any other insurance documentation available to OWNER upon request. CONTRACTOR will be considered in breach of contract should the CONTRACTOR fail to maintain an insurance policy in the minimum limits of liability and requirements identified above while performing services for and under this Agreement, and will be subject to default and immediate termination of the Agreement. Additionally, CONTRACTOR covenants and agrees to use its best efforts to maintain an insurance policy in the minimum limits of liability and requirements identified above until one year following the conclusion of this Agreement.

10. **INDEMNIFICATION. CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER, ITS ELECTED OFFICIALS, EMPLOYEES AND AGENTS HARMLESS FROM ANY AND ALL CLAIMS, ACTIONS, LIABILITY, DAMAGES, LOSSES AND EXPENSES (INCLUDING COSTS OF JUDGMENTS, SETTLEMENTS, COURT COSTS, AND ATTORNEYS' FEES, REGARDLESS OF THE OUTCOME OF SUCH CLAIM OR ACTION) CAUSED BY, RESULTING FROM, OR ALLEGING NEGLIGENT OR INTENTIONAL**

ACTS OR OMISSIONS OR ANY FAILURE TO PERFORM ANY OBLIGATION UNDERTAKEN OR ANY COVENANT IN THIS CONTRACT, WHETHER SUCH ACT, OMISSION, OR FAILURE WAS THE CONTRACTOR'S OR THAT OF ANY PERSON PROVIDING SERVICES HEREUNDER THROUGH OR FOR THE CONTRACTOR. UPON WRITTEN NOTICE FROM THE OWNER, THE CONTRACTOR WILL RESIST AND DEFEND AT ITS OWN EXPENSE, AND BY COUNSEL REASONABLY SATISFACTORY TO OWNER, ANY SUCH CLAIM OR ACTION. THE CONTRACTOR WILL CARRY PROPER INSURANCE WITH THE OWNER AS AN ADDITIONAL NAMED INSURED. THIS INDEMNIFICATION CLAUSE SHALL SURVIVE THIS AGREEMENT AND BE ENFORCEABLE AS A SEPARATE AGREEMENT IN THE EVENT ITS SURVIVAL AND ENFORCEMENT BECOME NECESSARY.

11. **Notice**. Except as may be otherwise specifically provided in this Agreement, all notices, demands, requests, or communications 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 OWNER: The County of Hidalgo
Attn: County Judge
100 E. Cano, 2nd Floor
Edinburg, Texas 78539

If to CONTRACTOR: GO Underground, L.L.C
George Olivares, President
217 E. Monroe Avenue
Harlingen, TX 78550

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 addresses or if mailed at such time as it is deposited in the United States mail.

12. **GENERAL PROVISIONS.**

a. **Assignment**. Except as otherwise herein provided, CONTRACTOR shall not assign the obligations or rights under this Agreement to any person without the prior written consent of OWNER.

b. **Conflict with Applicable Laws.** 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 latter 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. 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.

c. **No Waiver**. No waiver by OWNER of any breach of any provision of this Agreement shall be deemed to be a waiver of any preceding or succeeding breach of the same or any other provision hereof.

d. **Governing Law**. 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 CONTRACTOR hereby consents to personal jurisdiction in Hidalgo County, Texas.

e. **Successors**. 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.

f. **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 OWNER under this Agreement, OWNER may terminate this Agreement upon ninety (90) days written notice to CONTRACTOR. OWNER 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 OWNER. *Agreements for the acquisition, including lease of real or personal property under Tex. Loc. Govt. Code §271.903*: In the event that, during any term hereof, the Commissioner's Court does not appropriate sufficient funds to meet the obligations of OWNER under this Agreement, OWNER may terminate this Agreement upon ninety (90) days written notice to CONTRACTOR, OWNER agrees, however, to use a best efforts attempt to obtain and appropriate funds for payment of the Agreement. The parties intend this provision, if applicable, to be a continuing right to terminate this at the expiration of each budget period of OWNER in accordance with the Texas Local Government Code.

g. **Immunities**. Nothing in this Agreement is intended to and OWNER does not hereby waive, release or relinquish any right to assert any of the defenses OWNER enjoys by virtue of the state or federal constitution, laws, rules or regulations, and any sovereign, official or qualified

immunity available to OWNER as to any claim or action of any person, entity, or individual against OWNER.

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

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

j. **Entire Agreement**. This Agreement contains the entire agreement between the parties hereto, and each party acknowledges that neither has made (either directly or through any agent or representative) any representations or agreements in connection with this Agreement not specifically set forth herein. This Agreement may be modified or amended only by an agreement in writing executed by OWNER and CONTRACTOR, and not otherwise.

k. **Purchasing Ethics**. CONTRACTOR represents and warrants it has not, during the process of being awarded this contract violated the following ethical standards of OWNER and, upon and after the execution of this Agreement, agrees to abide by the following ethical standards of OWNER:

1. 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 OWNER, or for any elected official, department head or employee or former elected official, department head or employee of OWNER, to solicit, demand, accept or agree to accept from another person, entity or organization, a gratuity or an office 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 advise, 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 OWNER.

2. 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 OWNER, or any person associated therewith, as an inducement for the award of a subcontract or order.

l. **Void Contract**. CONTRACTOR understands that an awarded contract may immediately become void if the OWNER determines that a lack of compliance with applicable policies and/or statutes has occurred in the procurement process.

m. **Nondiscrimination**. CONTRACTOR, including subcontractors, assignees and successors in interest, ensures that no person shall on the grounds of race, religion, color, national origin, sex, age, or disability, or any other protected class under law, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination or retaliation in any federally or non-federally funded program or activity when providing any services described herein under this contract/agreement. Applicable nondiscrimination statements and provisions of Title VI of the Civil Rights Act of 1964, as amended, were provided as part of the initial procurement packet and are incorporated herein and made a part of this agreement for all purposes.

n. **Additional Documents**. The parties hereto covenant and agree that they will execute each 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.

o. **Required Contract Provision for Contracts Subject to Federal Award (*if applicable*)**. Pursuant to 2 CFR 200.327, a non-federal entity's contracts must contain the applicable provisions described in appendix II to 2 CFR 200-Contract Provisions for non-Federal Entity Contracts under Federal Awards. Additionally, OWNER contracts under Federal award which are subject to assistance from the Federal Emergency Management Agency (FEMA) are also required to contain additional contract clauses. The applicable required contract clauses were provided as part of the initial procurement packet and are incorporated herein and made part of this agreement for all purposes.

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

[SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, the parties to these present have executed this contract in the year and day first written above.

APPROVED BY COMMISIONERS COURT ON September 6, 2022. MM
Agenda Item No.: 87346 **Executive Office:** _____

VENDOR:

GO Underground, L.L.C

George Olivares
George Olivares (Sep 8, 2022 11:06 CDT)

George Oliverez, President

COUNTY OF HIDALGO:

Richard F. Cortez, County Judge

ATTEST:

COMMISSIONERS COURT Hidalgo County, Texas

Arturo Guajardo, Jr., County Clerk

APPROVED AS TO FORM:
Office of the Criminal District Attorney,
Ricardo Rodriguez, Jr.

By: Robert Viña, III
Robert Viña, III (Sep 8, 2022 11:21 CDT)

Robert Viña III, Assistant District Attorney

ATTACHMENTS:

EXHIBIT A - Requirements/County's Request for Bids (RFB) Packet
EXHIBIT B - Bid Page
EXHIBIT C - Certificate of Insurance

COUNTY OF HIDALGO
AMERICAN RESCUE PLAN ACT (ARPA) CONTRACT ADDENDUM

The contract or purchase order to which this addendum is attached is made using federal assistance provided to the County of Hidalgo by the US Department of Treasury under the American Rescue Plan Act ("ARPA"), Sections 602(b) and 603(b) of the Social Security Act, Pub. L. No. 117-2 (March 11, 2021).

As such, this contract or purchase order is subject to the requirements applicable to federal awards as provided in 2 CFR 200. Further, in addition to any and all required contract clauses included in the procurement packet incorporated herein and made part of this Addendum and Agreement, including but not limited to those found in **Appendix II to 2 CFR 200** (required contract provisions for contracts subject to federal award) and the included Legal Notice, the following terms and conditions apply to you, the contractor or vendor, as a contractor of the County of Hidalgo, according to the County's Award Terms and Conditions; by ARPA and its implementing regulations; and as established by the Treasury Department. This list is not exclusive and shall include any amendments to the referenced required contract clauses, and other required contract clauses and/or any future required contract clauses. Applicable clauses and additional information for contracts subject to federal award may be found in the respective procurement packet (*See procurement packet Appendix regarding the same*) and are incorporated herein and made part of this Addendum and Agreement.

1. **Equal Opportunity**. Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by EO 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

2. Minority and Women Business Enterprises (if applicable to this Contract). Contractor hereby agrees to comply with the following when applicable: The requirements of Executive Orders 11625 and 12432 (concerning Minority Business Enterprise), and 12138 (concerning Women's Business Enterprise), when applicable. Accordingly, the Contractor hereby agrees to take affirmative steps to assure that women and minority businesses are utilized when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

a. Including qualified women's business enterprises and small and minority businesses on solicitation lists;

b. Assuring that women's enterprises and small and minority businesses are solicited whenever they are potential sources;

c. When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by small and minority business, and women's business enterprises;

d. Where the requirement permits, establishing delivery schedules which will encourage participation by women's business enterprises and small and minority business;

e. Using the services and assistance of the Small Business Administration, and the U.S. Office of Minority Business Development Agency of the Department of Commerce; and

f. If any subcontracts are to be let, requiring the prime Contractor to take the affirmative steps in a through e above. For the purposes of these requirements, a Minority Business Enterprise (MBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by members of the following groups: Black, Hispanic, Asian or Pacific Islander, American Indian, or Alaskan Natives. A Women Business Enterprise (WBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by women.

3. **Suspension and Debarment**. (applies to all purchases.) (A) This contract is a covered transaction for purposes of 2 CFR pt. 180 and 2 CFR pt. 3000. As such, the Contractor is required to verify that none of Contractor's principals (defined at 2 CFR § 180.995) or its affiliates (defined at 2 CFR § 180.905) are excluded (defined at 2 CFR § 180.940) or disqualified (defined at 2 CFR § 180.935). (B) The Contractor must comply with 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. (C) This certification is a material representation of fact relied upon by the County of Hidalgo. If it is later determined that the contractor did not comply with 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C, in addition to remedies available to the County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. (D) The Contractor agrees to comply with the requirements of 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

4. **Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352, as amended. (Applies to all purchases.)** Contractor certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Contractor shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency. **For Purchases over $100,000 - Contractors must sign the certification included in the Byrd Anti-Lobbying section of the procurement packet APPENDIX entitled-*Required Contract Clauses for Contracts under Federal Award*.**

5. **Access to Records**. (applies to all purchases.) (A) The Contractor agrees to provide the County of Hidalgo, the U.S. Department of Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions. The Contractor agrees to permit any of the foregoing parties to reproduce by any means or to copy excerpts and transcriptions as reasonably needed, and agrees to cooperate with all such requests. (B) The Contractor agrees to provide the Treasury Department or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract. (C) No language in this contract is intended to prohibit audits or internal reviews by the Treasury Department or the Comptroller General of the United States.

6. **Rights to Inventions Made Under a Contract or Agreement**. Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any applicable implementing regulations.

7. **Contract Work Hours and Safety Standards Act (40 U.S.C. 327 through 333) (applies only to purchases over $100,000, when laborers or mechanics are used.)** Where applicable, all contracts in excess of $100,000 that involve the employment of mechanics or laborers shall include a provision for compliance with 40 U.S.C. 3702 and 3704 of the Contract Work Hours and Safety Standards Act, as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 3702 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard workweek of 40 hours. Work in excess of the standard workweek is permissible provided that the worker is compensated at a rate of not less than 1 1/2 times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. The requirements of 40 U.S.C. 3704 are applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

8. **Clean Air Act & Federal Water Pollution Control Act (applies to purchases of more than $150,000.)** (A) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. (B) The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. (C) The Contractor agrees to report each violation of the Clean Air Act and the Water Pollution Control Act to the County of Hidalgo and understands and agrees that the County will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office. (D) Contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance.

9. **Prohibition on certain telecommunications and video surveillance services or equipment (Huawei and ZTE)**

Contractor is prohibited from obligating or expending loan or grant funds to:

(1) Procure or obtain;

(2) Extend or renew a contract to procure or obtain; or

(3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115–232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

(i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and

telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

(ii) Telecommunications or video surveillance services provided by such entities or using such equipment.

(iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

9. **Buy USA** - Domestic Preference for certain procurements using federal funds. Contractor should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section:

(1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

10. **Procurement of Recovered Materials**: (applies only if the work involves the use of materials) (A) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired: i. Competitively within a timeframe providing for compliance with the contract performance schedule; ii. Meeting contract performance requirements; or iii. At a reasonable price. (B) Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensiveprocurement-guideline-cpg-program. (C) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

11. **Publications**. Any publications produced with funds from this award must display the following language: "**This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of Recipient] by the U.S. Department of the Treasury**."

12. **Increasing Seat Belt Use in the United States**. Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Contractor is encouraged to adopt and enforce on-the-job seat belt policies and programs for your employees when operating company-owned, rented or personally owned vehicles.

13. **Reducing Text Messaging While Driving**. Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Contractor is encouraged to adopt and enforce policies that ban text messaging while driving, and establish workplace safety policies to decrease accidents caused by distracted drivers.

EXHIBIT A

REQUIREMENTS/COUNTY'S REQUEST FOR BIDS

HIDALGO COUNTY
PROCUREMENT PACKET

Request for Bids
RFB No: 2022-0094-04-05-JDC

"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

Acceptance Due Date:
Wednesday, April 5, 2022, at 3:00 PM

Eduardo Belmarez, MBA, CPM, Purchasing Director
Hidalgo County Purchasing Department

Project Contact Information:
Jaime "JD" Cortez, Contract Specialist III
(956) 318-2626 Ext. 4882
jaime.cortez@co.hidalgo.tx.us

2812 S. Bus. Hwy 281
Edinburg, Texas 78539
Phone: (956) 318-2626
Fax: (956) 318-2629
www.co.hidalgo.tx.us/purchasing

March 14, 2022

Company Name

Authorized Representative

Address

City, State Zip Code

RE: HIDALGO COUNTY - REQUEST FOR BIDS
RFB NO.: 2022-0094-04-05-JDC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project

Dear Prospect Offeror:

Hidalgo County Purchasing Department welcomes and appreciates your interest and participation. For your review and consideration, enclosed find the procurement packet for the aforementioned project. Modifications and new requirements have been added and implemented. Please ensure to carefully read and review all instructions, requirements and specifications.

If assistance is required, please do not hesitate to call the Purchasing Department at (956) 318-2626.

Sincerely,

Eduardo Belmarez MBA, CPM
Hidalgo County Purchasing Director

REQUEST FOR BIDS

TO SUPPLY HIDALGO COUNTY with bids for **"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project in Precinct 2".**

Packets may be obtained by calling the Hidalgo County Purchasing Department at (956) 318-2626 or by email to **jaime.cortez@co.hidalgo.tx.us.**

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 proposal shall accompany the submittal as a guaranty that, if awarded the contract, the Vendor will enter into a contract with the County of Hidalgo. Payment and Performance Bonds shall be executed except in the event of a single payment contract with the County of Hidalgo in lieu of Performance Bond. In the event the total amount proposed is $25,000 or less, the successful vendor has the option to enter into a single payment contract with the County of Hidalgo in lieu of a Payment and Performance Bond.

PRE-BID CONFERENCE is scheduled for **Wednesday, March 23, 2022,** at **3:00 P.M.** at **HIDALGO COUNTY ADMINISTRATION BUILDING PURCHASING DEPARTMENT CONFERENCE ROOM, 2812 S Business Hwy 281, EDINBURG, TEXAS 78539.**

UPON SUBMITTING BIDS, offers are required to properly identify (handwritten, typed, or printed) sealed envelope and/or packet as follows: Offeror's name and address in the upper left-hand corner of the sealed envelope and/or package and RFB No.: **2022-0094-04-05-JDC "Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project in Precinct 2"** in 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 bid must contain one (1) original (pages one-sided), and two (2) USB's in PDF format and be addressed for delivery to:

Eduardo Belmarez, MBA, CPM, Hidalgo County Purchasing Director
Hidalgo County Purchasing Department

US Postal Mail/Courier Address
2812 S. Business Hwy 281
Hidalgo County Administration Building
Edinburg, Texas 78539

Physical Location:
2802 S. Business Hwy 281
Hidalgo County Administration Building
(Southeast of Canton Rd & Business 281)
Edinburg, Texas, 78539

Bids will be accepted until 3:00 p.m. on Tuesday, April 5, 2022, 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 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.

No 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 offeror must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, age, disability, or national origin (if applicable).

HIDALGO COUNTY reserves the right to refuse and reject any/all bids and to waive any/all formalities or technicalities, or to accept the bid considered the best and most advantageous to the County.

Typewritten RFI's shall be e-mailed to jaime.cortez@co.hidalgo.tx.us. RFI's **will not be answered by phone**. NO HANDWRITTEN RFI will be processed/answered. All inquiries shall be forwarded by **5:00 p.m. Friday, March 25, 2022.** Responses to said inquiries will be sent to all applicants via email by no later than **Tuesday, March 29, 2022**. Inquiries beyond this date will not be responded to.

BY ORDER OF THE COMMISSIONER'S COURT OF HIDALGO COUNTY, TEXAS, on this 8TH DAY OF March, 2022

EDUARDO BELMAREZ, MBA, CPM
HIDALGO COUNTY PURCHASING DIRECTOR
REPORT ROAD HAZARDS @ 1-866-HCR-SAFE OR 1-866-427-7233

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This procurement packet includes the components marked below. If the item is not checked, it is not applicable to this solicitation. Offerors are asked to review the documentation to be sure that all applicable parts are included. If any portion of the documentation is missing, notify the Purchasing Department immediately. Offeror should be thoroughly familiar with all of the following items applicable to this procurement packet before submitting a response.

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LEGAL NOTICE

LEGAL NOTICE

These General Provisions are considered standard language for an Offeror (hereinafter referred to as "Offeror", "Vendor", "Respondent", or "Contractor") submitting a response for a Request for Bids, Proposals, Qualifications or other solicitation (hereinafter referred to as "Procurement Packet") made by the County of Hidalgo (hereinafter referred to as "Hidalgo County" and "County" or any other governing body/agency for which the Hidalgo County Purchasing Department has been authorized to perform procurement services.

It is the Offeror's sole responsibility to be in compliance of all federal, state, and local laws, requirements, rules, codes, ordinances, and regulations applicable to their proposed goods and/or services. In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall procurement packet, Hidalgo County's interpretation shall govern.

The following is a link to all adopted Hidalgo County policies (https://www.hidalgocounty.us/805/County-Administrative-Policies), which for all purposes, when applicable and whether specified explicitly or not, are incorporated by reference as part of this procurement packet and any resulting agreement.

1. **ACCEPTANCE OF SUBMISSION.** Receipt of the submission shall under no circumstance obligate Hidalgo County to accept the response, or make an award. The Offeror is responsible for obtaining any information needed in order to respond and for all costs of submitting its response. An Offeror's submitted response is to remain firm for a minimum of sixty (60) days after opening. Hidalgo County is not responsible for any missing, lost, or late submissions.

2. **ACCESS TO RECORDS.** In special circumstances, Vendor may be required to allow duly authorized representatives of Hidalgo County, or the state and federal government access to contracts, books, documents, and records necessary to verify the nature and extent of the cost of services provided by Vendor. Vendor must keep records within Hidalgo County or note in their submission that records will be available within the boundaries of Hidalgo County to those representatives within one (1) business day of request by the County.

3. **ACCOUNT CREATION FOR PAYMENT.** Upon award and prior to execution of a contract, Offeror shall cooperate with and submit any required information to the Hidalgo County Auditor's Office in order to establish an account with the County for payment, including information requested on Hidalgo County Vendor Enrollment Solution, **Appendix "E"** on this procurement packet. This information must be on file with the Hidalgo County Purchasing Department and the Hidalgo County Auditor's Office. Failure to provide this information may result in a delay in payment and/or back-up withholding as required by the Internal Revenue Service.

4. **ADDENDA.** When specifications interpretations, amendments, corrections or changes are revised, the Hidalgo County Purchasing Department will issue an Addendum addressing the nature of the change. All released Addenda will be e-mailed to all point of contact(s) who are known to have received or requested a copy of the procurement packet directly from the Hidalgo County Purchasing Department. Offeror must **sign in blue ink and include it in the returned submission package.**

5. **ASSIGNMENT.** The successful Offeror shall not assign, sell, transfer, convey, or otherwise transfer its rights under any awarded contract, in whole or in part, without the prior written consent of County of Hidalgo County Commissioners Court (hereinafter referred to as "Commissioners Court"), or other applicable governing body.

6. **AWARD.** Hidalgo County reserves the right to award this contract on the basis determined on the Procurement Overview, and when applicable, listed on **Appendix "B"**, in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one Offeror, and to reject any or all submissions received. After Hidalgo County Commissioners' Court approves an award, and the awarded Contractor defaults in meeting the general requirements and/or specifications in complying with the contract agreement, Hidalgo County reserves the right to seek the services of the next lowest bidder(s) and/or qualified Offeror(s). In such event, Hidalgo County shall charge the Awarded Vendor the difference for any additional cost of such item. Hidalgo County reserves the right to add or delete items during the term of the contract under the same rates and conditions.

7. COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS. The County will search a database maintained by the Texas State Comptroller which contains relevant vendor information. A contract may not be entered into with an entity that is identified therein. Search results shall be incorporated for all purposes as part of any resulting agreement entered into by the parties. The Offeror shall follow all federal, state, and local laws, requirements, rules, codes, ordinances, regulations and Hidalgo County Policy & Procedures applicable to their proposed goods and/or services, including, but not limited to those addressed within this procurement packet, the resulting agreement and the following:

7.1 Attestation Terrorist Organizations - TEX. GOVT. CODE CH. 2252. Pursuant to the Texas Government Code, including but not limited to Chapter's 2252, 806 and 807, the Offeror warrants, represents, certifies and attests that, by submitting a response to this procurement packet and/or at the time of execution of this Contract, Agreement, or supplemental agreement thereafter, neither the Offeror, nor any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same (i) engages in business with Iran, Sudan, or any foreign terrorist or (ii) is a company listed by the Texas Comptroller of Public Accounts.

7.2 Breach of Ethics. Contracts awarded hereunder shall be in compliance with Tex. Loc. Govt. Code Chapter 171: Regulation of Conflicts of Interest of Officers of Municipalities, Counties and Certain Other Local Governments.

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 response to a request 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.

7.3 Bonds. If this procurement packet requires submission of bid bond or proposal guarantee, and performance and payment bonds, an explanation of these requirements will be detailed on the Projects Requirements Acknowledgement listed in **Appendix "C"**. Responses submitted without the required bond or cashier's checks may be deemed unresponsive, thus disqualified from participation.

7.4 Boycott Energy Companies Verification – TEX. GOVT. CODE 2274. In accordance with changes to the law from the 87th Legislature in 2021, a for-profit company, not including a sole proprietorship, with ten or more full-time employees, is required to verify in writing that it does not boycott energy companies, and it will not boycott energy companies during the term of the Contract, if it is a contract for goods or services that has a value of at least $100,000 that is paid wholly or partly from public funds of the governmental body. Written verification may be provided by signing the Legal Notice Declarations page. Please provide a written notification if your company is unable to provide the written verification referenced above.

As per Tex. Gov't. Code §809.001(1), "Boycott energy company" means "without an ordinary business purpose, refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company: (A) engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; or (B) does business with a company described by Paragraph (A)".

As per Ch. 2274(c), this verification requirement does not apply to the County if it determines that this requirement is inconsistent with the County's constitutional or statutory duties related to the issuance, incurrence, or management of debt obligations or the deposit, custody, management, borrowing, or investment of funds.

7.5 Boycott Israel Verification - TEX. GOVT. CODE 2270. In accordance with the Texas Government Code, including but not limited to Chapters 2270 and 808, a company, other than a sole proprietorship, with ten or more full time employees is required to certify in writing that it does not boycott Israel and will not boycott Israel during the term of the Contract, if the Contract has a value of $100,000 or more.

7.6 Certification Regarding Debarment, Suspension Ineligibility, and Voluntary Exclusion. The Offeror warrants and represents by execution of an award from their response to this procurement packet that it is not debarred, suspended, or otherwise excluded from or ineligible for participation in any Federal programs, or state assistance, as described under Executive Order 12549, "Debarment and Suspension." The Offeror agrees to include this certification in all contracts between itself and any subcontractors in connection with the services performed under any subsequent Contract or Agreement arising from this award. The Offeror also acknowledges that it is their sole responsibility to immediately notify Hidalgo County, in writing, if they or a subcontractor is not in compliance with Executive Order 12549 during the term of this contract. Further, Offeror agrees to refund Hidalgo County for any payments made to the contractor while ineligible. Pursuant to federal regulation 45 CFR Part 76, the Offeror is required to furnish a certification or acknowledgement stating that they are free from suspension and debarment through registration on System for Award Management at www.sam.gov with their response.

7.7 Davis-Bacon Act/Hidalgo County Adopted Prevailing Wage Rate. When applicable, in accordance with Texas Government Code, Chapter 2258, as well as any other applicable laws, any Contractor or Subcontractor performing contracts in excess of $2,000, for the construction, alteration, or repair (including painting and decorating) of public buildings or public works must pay their laborers and mechanics employed under the contract no less than the locally prevailing wages and fringe benefits for corresponding work on similar projects in the area as per the Davis Bacon Act or the rates adopted by Hidalgo County.

The Offeror warrants and represents that it will pay all its workers all monies earned by its employees including, but not limited to regular wages, any overtime compensation, or any additional payments pursuant to the Fair Labor Standards Act, 29 U.S.C. Section 207 9a(1), as amended; the Texas Pay Day Act; the Equal Pay Act; Title VII of the Civil Rights Act of 1964, 42 U.S.C. Section 2000e, *et al*., as amended; and/or any provisions of the Texas Labor Code Ann., as amended, without cost or expenses to the County.

Awarded Vendors, its officers, agents, and/or employees will not be entitled to any benefits of an employee or elected official of Hidalgo County, including, but not limited to, benefits associated with Hidalgo County's civil service system.

7.7 Disclosure of Conflict of Interest.

7.7.1 As an Offeror. Pursuant to Texas Local Government Code, Chapter 176, an Offeror must disclose an interest between the Offeror, the Offeror's employees and any Hidalgo County employees arising from relationships within the first degree of consanguinity or affinity. A financial interest arises if the County's elected official, department head, or employee, or a member of their family, received any gifts valued in excess of $250 during the preceding twelve (12) month period, or employment of any County's elected official, department head, or employee, or the County official's family member.

The Offeror shall not use funds to directly or indirectly pay any person for influencing or attempting to influence any County employee or official in connection with the awarding of any contract or the extension, continuation, renewal, amendment or modification of any contract.

7.7.2 Certificate of Interested Parties (Form 1295). Hidalgo County cannot enter into a contract until Form 1295 is submitted, as Texas law, including, but not limited to Tex. Govt. Code

Ch. 2252, Title 1 Tex. Ethics Comm. Rules – Title 1, sec. 46 and the Tex. Admin. Code, requires all parties who enter into any contract with the County which must be approved by its governing body, to disclose all interested parties. Form 1295 must be completed in its entirety through the Texas Ethics Commission at the following website: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm prior to awarding the Contract. Failure to do so may result in delay of award, or deem your response unresponsive, thus disqualified from participation.

7.7.3 Collusion. The Offeror affirms that by responding to any solicitation made by Hidalgo County, it has not communicated directly or indirectly the response made to any competitor or any other person engaged in such line of business. Any or all responses may be rejected if the County believes that collusion exists among the Offerors, and/or the County believes prices provided by the Offerors are inappropriately unbalanced. Respondent's Affidavit **(Appendix "J")** must be included in the response.

7.7.4 Consultants Excluded from Competition. An outside Consultant or Contractor is prohibited from submitting a response for goods or services requested on a Hidalgo County project of which the Consultant or Contractor was a designer or other previous contributor, assisted in developing or drafting specifications, requirements, statements of work, or requests for goods and/or services must be excluded from competing for such procurements. If such, a Consultant or Contractor submits a response, that response shall be prohibited, and disqualified on the basis of conflict of interest, no matter when the conflict is discovered by Hidalgo County.

7.7.5 Disclosure of Interested Parties (Form CIQ). Offeror must fully disclose the existence of any relationships as defined above in its response to this procurement packet. The Conflict of Interest Questionnaire (CIQ), attached hereto as **Appendix "D"**, must be filed with the Hidalgo County Clerk, located inside the Hidalgo County Courthouse, at 100 N. Closner, Edinburg, TX 78539 no later than the seventh business day after the date the person becomes aware of facts that require the statement to be filed. **Completion and submission of Form CIQ is the sole responsibility of the Offeror.** Additionally, the Offeror must immediately notify Hidalgo County if the information provided in its response changes at any time.

7.7.6 Disclosure to Report Lobbying. When applicable, pursuant to 31 U.S.C.A. §1352 (2003), if at any time during the contract term funding to Contractor exceeds $100,000.00, Contractor shall file with the County the Federal Standard Form LLL titled "Disclosure Form to Report Lobbying" as detailed in **Appendix "H"**.

7.8 Discrimination Against Firearm Entities or Trade Associations Verification - Tex. Gov't. Code Ch. 2274. In accordance with changes to the law from the 87th Legislature in 2021, a for-profit company, not including a sole proprietorship, with ten or more full-time employees, is required to verify in writing that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and will not discriminate against a firearm entity or firearm trade association during the term of the Contract, if it is a contract for goods or services that has a value of at least $100,000 that is paid wholly or partly from public funds of the governmental body. Written verification may be provided by signing the Legal Notice Declaration page. Please provide a written notification if your company is unable to provide the written verification referenced above.

As per Tex. Gov't. Code §2274.001(3), except as otherwise indicated, to "discriminate against a firearm entity or firearm trade association " means "with respect to the entity or association, to: (i) refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; (ii) refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or (iii) terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association".

As per Ch. 2274, this verification requirement does not apply to the County if it contracts with a sole-source

provider, does not receive any bids from a company that is able to provide the required written verification above, or the contract is exempt from compliance under Tex. Gov't. Code sec. 2274.003 relating to the issuance, sale or delivery of notes.

7.9 Disqualification of Offeror. By submitting a response to this request, an Offeror offering to sell supplies, materials, services, or equipment to Hidalgo County certifies that the Offeror has not violated the antitrust laws of this state codified in Texas Business and Commerce Code §15.01, et seq., as amended, or the federal antitrust laws. If multiple submissions are made by an Offeror and after they are opened, the Offeror requests to withdraw one of the submissions is requested to be withdrawn, the result will be that all of the responses submitted by that Offeror will be withdrawn; however, nothing herein prohibits an Offeror from submitting multiple responses for different products or services.

7.10 Ethical Business Practices. Hidalgo County operates its business ethically and in compliance with the law. We ask that any Offeror, their representative, and/or employee doing business with Hidalgo County, who believes they have witnessed any suspected ethical violation or fraud immediately report the allegations to the Hidalgo County Purchasing Director, 2802 S. BUS HWY 281, Edinburg, TX 78539, (956) 318-2626, eduardo.belmarez@co.hidalgo.tx.us.

Hidalgo County Purchasing Department will conduct a prompt and thorough investigation. At the conclusion of the investigation, Hidalgo County Purchasing Department will refer any suspected criminal activity to the Hidalgo County District Attorney or other appropriate law enforcement agency. Any Offeror who reports suspected ethical violations or fraud can do so without fear of retaliation. Retaliating against any offeror for reporting suspected ethical violations or fraud is strictly prohibited.

7.11 Historically Underutilized Business/Disadvantaged Business Enterprises. The County is committed to ensuring that Historically Underutilized Businesses (HUB) and Disadvantaged Business Enterprises (DBE) such as small business enterprises (SBE), minority and women-owned business enterprises (MWBE) receive a fair and equal opportunity for participation in the County's procurement process. The County encourages the use of these enterprises both as prime and subcontractors as listed in **Appendix "E"**.

When federal funds are expended by the County, the County will take affirmative steps set forth in 2 CFR 200.321 to assure that small, minority, women-owned businesses and labor surplus area owned firms are used when possible. Pursuant to 2 CFR 321, the County requires that a prime contractor who uses sub-contractors take affirmative steps set forth in 2 CFR 200.321, including:

a. Placing qualified small and minority business and women's business enterprises on solicitation lists;
b. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
f. Nothing in this section is to be construed to require the County to award a contract other than as required by law and Hidalgo County policies and procedures.

When procurement is related to road construction projects with the Texas Department of Transportation (TxDOT), all respondents must submit their HUB/DBE plans as part of their submission to be qualified to participate.

7.12 Independent Contractor. 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 the County has no supervision of the performance of the Services provided by Vendor, and that Vendor is an independent contractor under an award through this procurement packet.

7.13 Nondiscrimination. By submitting a response to this procurement packet, the Offeror certifies that it will conform to the provisions of the Federal Civil Rights Act of 1964, as amended and related state and federal law.

Offeror, during the performance of this contract, will not discriminate against any employee or applicant for employment because of race, religion, color, national origin, sex, age, disability or any other protected class under law (except as allowed in the case of bona fide occupational qualifications).

7.14 Texas Public Information Act. The Offeror understands and agrees that Hidalgo County is a governmental body for purposes of the Public Information Act, codified as Chapter 552 of the Texas Government Code and as such is required to release information in accordance with the Public Information Act (the "Act"). Hidalgo County must rely on advice, decisions and opinions of the Attorney General of the State of Texas relative to the disclosure of data or information. Submissions will be kept confidential in accordance with the Act and applicable law, and **submissions are subject to inclusion into the public record after award**. To the extent permitted by law, Offeror may request in writing non-disclosure of any information that it considers to be confidential, proprietary, and/or trade secret in its submission. Such data shall accompany the submission, be readily separable from the response, and shall be CLEARLY MARKED "**CONFIDENTIAL, PROPRIETARY and/or TRADE SECRET"**. Hidalgo County will make reasonable efforts to provide Offeror notice in accordance with the Act in the event the County receives a request for information under the Act for information that the Offeror has marked as indicated above. E-mail addresses provided by Offeror to the County as part of its response to this procurement packet are not confidential. Additionally, Offeror provides its affirmative consent to the disclosure of its e-mail addresses, including from its employees, officers, and agents acting on its behalf, that are provided to Hidalgo County. This consent shall survive termination of this agreement and apply to any e-mail address provided in any form for any reason whether related to this procurement packet or otherwise.

7.15 Title VI Notice. The County of Hidalgo, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat.252, 42 U.S.C. §§2000d to 2000d-4) and the Regulations, hereby notifies all respondents that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit Bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. Further, Title VI has been broadened by related statutes, regulations and executive orders as found in Appendices "A" through "E" as attached hereto as **Appendix "G"**. Offeror agrees to comply with Title VI as may be required.

8. **CONTRACT OBLIGATION.** Hidalgo County Commissioners Court must award the contract and the County Judge must sign the contract before it becomes binding on Hidalgo County or the Offeror. Elected officials, department heads, other County employees or representatives are NOT authorized to sign agreements for Hidalgo County, unless prior authorization is approved by the Hidalgo County Commissioners Court, or respective governing body. Binding agreements shall remain in effect until all products and/or services covered by this procurement packet have been satisfactorily delivered and accepted.

9. **CONTRACT RENEWALS.** Any extension or renewal of the agreement entered into by the parties are made at the County's sole discretion and under the same rates, terms and conditions as the initial agreement, or as amended.

10. **CONTRACT TRANSITION (Grace Period).** In the event services end by either contract expiration or termination, it shall be required that the successful respondent continue services if requested by the Hidalgo County Purchasing Department, until new services can be completely operational. The successful respondent acknowledges its responsibility to cooperate fully with the replacement vendor and Hidalgo County to ensure a smooth and timely transition to the replacement vendor. Such transitional period shall not extend more than sixty (60) days beyond the expiration/termination date of the contract, or any extension thereof. The successful respondent shall be reimbursed for services during the transitional period at the rate in effect when the transitional period clause is invoked by Hidalgo County. During any transition period, all other terms and conditions of the contract shall remain in full force and effect as originally written and subsequently amended.

11. **COST OF GOODS AND SERVICES.** Discount payments will be considered when offered. If during the life of any contract, or response awarded, the successful respondent'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 Hidalgo County. 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.

12. **COUNTY APPROVED HOLIDAYS.** There are fourteen (14) County approved holidays. The Offeror is advised that official County business will not be conducted on those dates. The link of approved holidays can be found on: https://www.hidalgocounty.us/115/County-Holidays.

13. **EVALUATION.** Evaluation shall be used as a determinant as to which proposed items or services are the most efficient and/or most economical for the County, considering all factors which have a bearing on price and performance of the items in the user department's environment. All submissions, except for Requests for Bids, may be subject to evaluations and negotiations by the Hidalgo County Purchasing Department, or authorized Hidalgo County representative as approved by Hidalgo County Commissioners Court, with recommendation to the appropriate governing body. Compliance with all requirements, delivery and needs of the user department are considerations in evaluating the responses received. **Pricing is NOT the only criteria for making a recommendation**. A preliminary evaluation by Hidalgo County will be held and appropriate responses will be subjected to the negotiating process and a request for a Best and Final Offer. Upon completion of the negotiations, Hidalgo County will make an award. All responses that have been submitted shall be available and open for public record after the contract is awarded, except for trade secrets or confidential information contained in the responses and identified as such.

    Hidalgo County reserves the right to refuse and reject any or all submissions and to waive any or all formalities or technicalities, or to the qualifications considered the best and most advantageous to Hidalgo County. Additionally, Hidalgo County reserves the right to separate and accept or eliminate any item(s) listed under this procurement packet that it deems necessary to accommodate budgetary or operational requirements.

14. **FISCAL FUNDING.** Hidalgo County has the discretion to utilize grant funding or general funding, however, should grant funding be utilized "Grant Funding" rules will apply. The award of a contract hereunder will not be construed to create a debt of the County which is payable out of funds beyond the current fiscal year. Additionally, should funds not be appropriated by the applicable governing body to continue the lease or contract in their sole discretion, said lease or contract shall become null and void on the last day of the current appropriation of funds.

    14.1 General Funding. A multi-year lease or lease/purchase arrangement, or any contract continuing as a result of an extension option, must include a fiscal funding out provision in the lease or contract. Funds for this procurement have been provided through the County budget for this fiscal year only. Hidalgo County, on an annual basis and at their discretion, has the right to reconsider a contract during the budget process for ensuing years if financial resources of Hidalgo County are insufficient to meet the liabilities of said contract. After expiration of the lease, leased equipment shall be removed by the Vendor from the user department without penalty of any kind or form to Hidalgo County. All charges and physical activity related to delivery, installation, removal and re-delivery shall be the responsibility of the Vendor.

    14.2 Grant Funding. Any contract entered into by the County that is to be paid from grant funds shall be limited to payment from the grant funding, and the Offeror understands that the County has not set aside any County funds for the payment of obligations under a grant contract. If grant funding should become unavailable at any time for the continuation of services paid for by the grant, and further funding cannot be obtained for the contract, then the contract shall be null and void.

    Additionally, County contracts subject to assistance from the Federal Emergency Management Agency (FEMA), require inclusion of the contract terms found in **Appendix "H"**. It is the County's intention to comply with FEMA requirements; therefore, any conflict in terms should be resolved as such.

15. **FORCE MAJEURE.** If by reason of Force Majeure either Party shall be rendered unable, wholly or in part, to carry out its responsibility under this contract by any occurrence by reason of Force Majeure, then the Party unable to carry out its responsibility shall give the other Party notice and full particulars of such Force Majeure in writing within a reasonable time after the occurrence of the event, and such notice shall suspend the Party's responsibility for the continuance of the Force Majeure claimed, but for no longer period. Force Majeure means acts of God, floods, hurricanes, tropical storms, tornadoes, earthquakes, or other natural disasters, acts of a public enemy, acts of terrorism, sovereign conduct, riots, civil commotion, strikes or lockouts, and other causes that are not occasioned by either Party's conduct which by the exercise of due diligence the Party is unable to overcome and which substantially interferes with operations.

16. **GOVERNING LAW.** This procurement packet is governed by the competitive bidding requirements of the County Purchasing Act, Texas Local Government Code, §262.021 *et seq.,* as amended. Offerors shall comply with all applicable federal, state and local laws and regulations. Offeror is further advised that these requirements shall be fully governed by the laws of the State of Texas and venue shall be performable in a federal or state court or competent jurisdiction in Hidalgo County, Texas. Hidalgo County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the Hidalgo County District Attorney concerning any portion of these requirements. The County does not agree to binding arbitration and does not waive its right to a jury trial.

17. **HIPAA COMPLIANCE.** When applicable, the Offeror agrees to comply with the requirements of the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191 (codified at 45 C.F.R. Parts 160 and 164), as amended ("HIPAA"); privacy and security regulations promulgated by the United States Department of Health and Human Services ("DHHS"); Title XIII, Subtitle D of the American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, as amended ("HITECH Act"); provisions regarding Confidentiality of Alcohol and Drug Abuse Patient Records (codified at 42 C.F.R. Part 2), as amended; and TEX. HEALTH & SAFETY CODE ANN. §§81.046, as amended, 181.001 et seq., as amended, 241.151 et seq., as amended, and 611.001 et seq., as amended collectively referred to as "HIPAA", to the extent that the Offeror uses, discloses or has access to protected health information as defined by HIPAA. Offeror may be required to enter a Business Associate Agreement pursuant to HIPAA.

18. **INDEMNIFICATION. The successful Offeror, shall indemnify, defend, save, and hold Hidalgo County, all its elected officials, officers, agents and employees harmless 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 directly or indirectly from contractor's performance on account of any negligent act or fault of the successful Offeror, or of any agent, employee, subcontractor or supplier in the execution of, or performance under, any contract which may result from 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 Offeror shall pay any judgment with costs which may be obtained against the County growing out of such injury or damages, and shall, upon request, provide a defense to Hidalgo County by counsel reasonably acceptable to the County. The Successful Offeror 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 Offeror.**

19. **INSPECTIONS & TESTING.** Hidalgo County reserves the right to inspect any item(s) or service location for compliance with specifications and requirements and needs of the user department. If an Offeror cannot furnish a sample of a proposed item, where applicable, for review, or fails to satisfactorily show an ability to perform, the County can reject the response as inadequate.

    The successful respondent shall warrant that all items/services shall conform to 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 procurement packet shall be subject to the County's approval. Items found to be defective or not meeting specifications shall be replaced by the successful Offeror within two (*2*) business days at no expense to the County. Items that are not picked up within one (*1*) week after notification shall be deemed a donation to the County and may be used or disposed of at the County's discretion, without waiver of any other rights of the County as to the items' nonconformity.

20. **INSURANCE.** Contractor shall procure and maintain, with respect to the subject matter of this procurement packet, appropriate insurance coverage including, as a minimum, public liability and property damage with adequate limits to cover contractor's liability as may arise directly or indirectly from work performed under terms of this procurement packet. Certification of such coverage must be provided to the County as part of this response. (See **Appendix "C": Insurance Requirements**). Prior to award, Hidalgo County must be listed as a Certificate Holder to the policies.

21. **LEGAL DOCUMENTS.** Offeror should submit any agreement for products and/or services which may be required by their organization to enter into a contract with Hidalgo County. The awarded vendor will be required to execute an agreement with Hidalgo County which finalizes the terms and conditions set forth in their response, best and final offer, and any negotiations between the Offeror and Hidalgo County. The agreement is subject to review and amendment by the Hidalgo County District Attorney's Office.

22. **MAINTENANCE.** Maintenance required for equipment proposed should be available in Hidalgo County by a manufacturer-authorized maintenance facility. Costs for this service shall be shown on **Appendix "B"**. If Hidalgo County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.

23. **MARKET VOLATILITY AND UNIT PRICE ADJUSTMENTS.** When applicable, Hidalgo County recognizes that during periods of national crisis and unstable economic conditions, unforeseen price increase might affect costs for goods and services contracted on an annual basis. As such, upon written request of the Vendor to the County Purchasing Agent, the County may review evidence of prevailing industry-wide market conditions that may warrant an adjustment in bid prices contained in the contract. When applicable, the following procedure and conditions may be employed to mediate price volatility:
    - A Vendor shall:
        - make its Market Volatility and Unit Price Adjustment request in writing to the County Purchasing Agent.
        - 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.
        - 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.
        - notify the County at the time when the Vendor's costs for items, supplies, and or services 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.
    - 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 retains the right to determine whether or not such proposed price changes are in the best interest of the County.
    - The County may only grant a price increase if the evidence presented is deemed reliable.
    - No price escalation will be authorized in excess of the amount of the increase referred to in the supplier's notice.
    - The total increase in contract price shall not exceed twenty-five percent (25%) of the original contract price during the contract term.
    - 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.
    - 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 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.
- 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.

24. **MATERIAL SAFETY DATA SHEETS.** Under the "Hazardous Communication Act", commonly known as the "Texas Right to Know Act", an Offeror must provide to the County with each delivery, safety data sheets which are applicable to hazardous substances defined in the Act. Failure of the Offeror to furnish the required documentation will be cause to reject any response applying thereto.

25. **MINIMUM STANDARDS FOR RESPONSIBLE PROSPECTIVE RESPONDENTS.** With their submitted response, the Offeror must affirmatively demonstrate their responsibility as listed on **Appendix "A"**. A prospective respondent, by submitting a response, represents to County that it meets the requirements listed.

26. **NAME BRANDS.** Specifications may reference name brands and model numbers. It is not the intent of Hidalgo County to restrict or preclude competition in any way, but to establish a desired quality level of merchandise or to meet a pre-established standard due to like existing items. Offerors may offer items of equal stature and the burden of proof of such stature rests with Offerors. Hidalgo County shall act as sole judge in determining equality and acceptability of products offered.

27. **NEW MILLENNIUM COMPLIANCE.** All products and/or services furnished as part of this contract must be compliant for the present year and forward. This applies to all computers including hardware and software as well as all other commodities with date sensitive embedded chips.

28. **PAYMENT UNDER CONTRACT.** 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.

29. **PERFORMANCE ENFORCEMENT.** Hidalgo County reserves the right to enforce performance of any contract, agreement, supplemental agreement, as amended, or participation in the professional services pool, in any manner prescribed by law or deemed to be in the best interest of the County. Hidalgo County reserves the right to terminate the contract awarded hereunder in any manner prescribed by law or deemed to be in the best interest of the County immediately in the event of breach or default by a successful respondent, including, but not limited to failure to maintain qualifications, meet schedules, pay any required fees or taxes, or otherwise failing to perform in accordance with the requirements of this procurement packet.

30. **POST-AWARD DELIVERY INSTRUCTIONS.** Title and Risk of Loss of goods shall not pass to Hidalgo County until Hidalgo County actually receives and takes possession of the goods at the point or points of delivery. Receiving times may vary with the user department. Generally, deliveries may be made between 8:30 a.m. and 4:00 p.m., Monday through Friday, except on County approved holidays. The Offeror is advised to consult the user department for instructions, and be given at least seventy-two (*72*) hours prior notice of delivery, if applicable, before delivery will be accepted. The place of delivery shall be identified in the Requirements/Specifications attached hereto as **Appendix "A"** of this procurement packet and/or on the Purchase Order as a "Deliver To:" address.

31. **POST-AWARD INVOICES AND PAYMENTS.** Offerors shall submit an original, itemized invoice on company letterhead with their company name and address, detailing the deliverable(s) of goods and/or services provided, the respective price, product code, item number, quantity, etc. per line item, the name of receiving/requesting department or elected office, the delivery address, the awarded vendor's contract number, and issued purchase order number. Any invoice, which cannot be verified by the contract price and/or is otherwise incorrect, will be returned to the Offeror for correction. Under term contracts, when multiple deliveries and/or services are required, the Offeror may invoice following each delivery and the County will pay on invoice. Contracts providing for a monthly charge will be billed and paid on a monthly basis only. All payments are

subject to compliance with the Texas Prompt Payment Act.

Deliverables or services will be considered complete only upon written acceptance by Hidalgo County. No charges may be billed to Hidalgo County unless such costs are explicitly included in the agreement or contract. For billing and payment questions please contact the Hidalgo County Auditor's Office, 2808 S. Business Hwy. 281, Edinburg, Texas 78539, (956) 318-2511.

32. **PROCUREMENT PACKET FORM COMPLETION.** Fill out and return to the Hidalgo County Purchasing Department one (1) complete response in an appropriately sized envelope or box. **PACKAGE MUST SHOW THE COMPANY NAME, RETURN ADDRESS, THE RFB, RFP, RFQ, etc., PROJECT DESCRIPTION, OPENING DATE AND TIME, AND BE MARKED "SEALED SUBMISSION".** For Offeror's convenience, the shipping label on **Appendix "N"** can be used on the submission packet. An authorized representative of the Offeror should sign the Submission Cover Sheet. The contract will be binding only when signed by Hidalgo County, funds are certified by the Hidalgo County Auditor, and an official Hidalgo County Purchase Order is issued by the Hidalgo County Purchasing Department.

33. **PROCUREMENT PACKET SUBMISSION.** Offeror must submit all completed responses to the Hidalgo County Purchasing Department reception desk at 2802 S. BUS. HWY 281, Edinburg, Texas 78539 by the date and time listed under the Submission Deadline and Bid Opening section of the Procurement Overview. **Late submissions will not be accepted for any reason.**

    33.1 Supplemental Materials. Offerors are responsible for including all pertinent product data in the submitted response to this procurement packet. Literature, brochures, data sheets, specification information, completed forms requested as part of the procurement packet and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the Offeror wishes to include as a condition of the submission, must also be in the submitted response. Failure to include all necessary and proper supplemental materials may be cause to reject the entire response.

34. **PROOF OF BUSINESS.** Offeror must be in business under its current name and in its current form (e.g., proprietorship, Chapter S Corporation). Information to be included as part of the Vendor Application, **Appendix "E"**.

35. **PURCHASE ORDER AND DELIVERY.** The successful Offeror shall not deliver products or provide services without a Hidalgo County Purchase Order, signed by the Hidalgo County Purchasing Director, or an authorized agent of the Hidalgo County Purchasing Department. When applicable, the fastest, most reasonable delivery time shall be indicated by the Offeror in the proper place on **Appendix "B"**. Any special information concerning delivery should also be included, on a separate sheet, if necessary. All items shall be shipped **F.O.B. INSIDE DELIVERY** unless otherwise stated in the specifications. This shall be understood to include bringing merchandise to the appropriate room or place designated by the user department. Every tender or delivery of goods must fully comply with all provisions of these requirements and the specifications including time, delivery and quality. Nonconformance shall constitute a breach which must be rectified prior to expiration of the time for performance. Failure to rectify within the performance period will be considered cause to reject future deliveries and cancellation of the contract by Hidalgo County, without prejudice to other remedies provided by law. **Where delivery times are critical, Hidalgo County reserves the right to award accordingly**.

    Goods and/or Services must not be provided and **invoices will not be paid** without a purchase order signed by the Hidalgo County Purchasing Director.

36. **QUALIFICATIONS OF OFFEROR.** Offeror's failure to qualify or maintain qualifications throughout the term of this agreement shall release Hidalgo County from all obligations to the Offeror with regard to the services. In such an event, Hidalgo County may elect to engage another qualified firm or reject all submissions and re-advertise.

37. **RECYCLED MATERIALS.** Hidalgo County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable

specifications as to quantity and quality. Hidalgo County will be the sole judge in determining product preference application.

38. REFERENCES. Offeror must provide a total of four (4) references in each response to a solicitation requested by Hidalgo County. **One of the four references listed should be of a project that was canceled.** Offeror may provide this in form of Reference Letters from other individual(s)/entities or local government entities for whom the Offeror has provided similar services in the past twenty-four (24) months as demonstration of their prior experience, or if Offeror prefers, may utilize the Reference Form **Appendix "M"**. Letters or reference sheet must include the following information:

- Organization/Client Name/Government Entity (Include population of any local governmental entity – some procurements may require a specific population).
- Name of Contact Person
- Contact Telephone, Address and Email
- Name of Project
- Scope of Work
- Contract Period
- Budget Project Amount; Actual Project Amount
- Expected project timeframe; actual project timeframe
- Include contact information for one (1) client that services have been canceled, and a description of why the project was canceled.

39. SCANNED OR RE-TYPED RESPONSE. If in its response, Offeror either electronically scans, re-types, or in some way reproduces the County's published procurement packet, then in the event of any conflict between the terms and provisions of the County's published procurement packet, or any portion thereof, and the terms and provisions of the response made by the Offeror, the County's procurement packet ***as published*** shall control. Furthermore, if an alteration of any kind to the County's published procurement packet is only discovered after the contract is executed and is or is not being performed; the contract is subject to immediate cancellation.

Regardless of how an Offeror requested or received a copy of this procurement packet to prepare a response, **the response must be submitted in hard copy** according to the instructions contained within this procurement packet.

40. SEVERABILITY. If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

41. SILENCE OF SPECIFICATIONS. The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. Manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item proposed.

42. SUBCONTRACTING. Vendor may not subcontract services to another firm without prior written request detailing goods and/or services that are to be subcontracted, and approval of said written request by Hidalgo County Commissioners Court, or applicable governing body.

43. TAXES. Hidalgo County is exempt from all federal excise, state and local taxes unless, otherwise stated in this document. Hidalgo County claims exemption from all sales and/or use taxes under Texas Tax Code §151.309, as amended. Offerors are not to include tax in any cost figures (including in any supplemental project specific contracts applicable to pools). If it is determined that tax was included in the cost figure it will not be included in the tabulation of any supplemental project specific awards. Texas Limited Sales Tax Exemption Certificates

will be furnished upon written request to the Hidalgo County Purchasing Department, and signed by the Agent, or authorized Purchasing Department representative.

44. **TERM OF CONTRACTS.** If the contract is intended to cover a specific time period, the term will be specified in **Appendix A: Requirements/Specifications**. Awarded contract will be in effect until (*a*) the term expires, or (*b*) participation is terminated by County with thirty (*30*) days written notice prior to cancellation with or without cause. Any supplemental project-specific contract award to a successful respondent 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 the County with thirty (*30*) days written notice prior to cancellation with or without cause, unless otherwise stated in the executed agreement.

45. **TERMINATION.** Hidalgo County reserves the right to terminate the contract for default if Offeror breaches any of the terms therein, including warranties of Offeror or if the Offeror becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which Hidalgo County may have in law or equity. Default may be construed as, but not limited to, failure to deliver the proper goods and/or services within the proper amount of time, and/or to properly perform any and all services required to Hidalgo County's satisfaction and/or to meet all other obligations and requirements. Hidalgo County may terminate the contract without cause upon thirty (30) days written notice, unless otherwise stated in the executed agreement.

46. **TERMINATION FOR HEALTH AND SAFETY VIOLATIONS.** Hidalgo County has the option to terminate this contract immediately without prior notice if Offeror fails to perform any of its obligations in this contract if the failure (a) created a potential threat to health or safety or (b) violated a law, ordinance, or regulation designed to protect health or safety.

47. **USAGE REPORTS.** Hidalgo County reserves the right to request, and receive at no additional cost during the yearly contract period, a usage report detailing the services furnished to date under an agreement resulting from this procurement packet. The reports must be furnished no later than five (5) business days after written request and itemize all purchases to date by Hidalgo County department, description of each service purchased, quantity of each service purchased, per unit cost and total amount of all services purchased.

48. **WAIVER OF SUBROGATION.** Offeror and Offeror's insurance carrier waive any and all rights whatsoever with regard to subrogation against Hidalgo County as an indirect party to any suit arising out of personal or property damages resulting from Offeror's performance under any award resulting from award from this procurement packet.

49. **WARRANTIES.** Offerors shall furnish all data pertinent to warranties or guarantees which may apply to items in the response to this procurement packet. Offeror may not limit or exclude any implied warranties. Further, Offeror warrants that product sold to the County shall conform to the standards established by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event product does not conform to OSHA Standards, where applicable, Hidalgo County may return the product for correction or replacement at the Offeror's expense. If Offeror fails to make the appropriate correction within a reasonable time, Hidalgo County may correct at the Offeror's expense.

50. **CIVIL WORKS, CONSTRUCTION & PUBLIC WORKS PROJECTS**. Provisions of Tex. Govt. Code Ch. 2269 as amended by HB 2581 of the 87th Texas Legislature applicable to Civil Works and Construction Projects are hereby incorporated. Provisions of Texas Local Govt. Code Ch. 271, subchapter B applicable to competitive bidding on certain public works projects are hereby incorporated.

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LEGAL NOTICE DECLARATION

TO: Eduardo Belmarez, MBA, CPM, Purchasing Director
ATTN: Jaime "JD" Cortez, Contract Specialist III
Hidalgo County Administration Building/Purchasing Department
2802 S. Business Hwy. 281
Edinburg, Texas 78539

RE: RFB No. 22-0094-04-05-JDC

By providing a response to this solicitation, we acknowledge receipt of all of the pages of in this procurement packet. We understand that Hidalgo County reserves the right to reject any or all submissions, and further reserves the right to design the evaluation criteria to be used in selecting the lowest and best qualification.

We acknowledge that we have examined this procurement packet in its entirety, and are familiar with the conditions to be met. In accordance with the Specifications, and subject to all laws and regulations of the United States, State of Texas, and local laws, we propose and commit to furnish all labor, equipment, material, software, and services as set forth in the documents hereinbefore mentioned. Any purchase order or contract resulting from this process shall be considered null and void if the successful respondent fails to comply with any federal, state or local laws.

We acknowledge that we are providing the required certifications, attestations, verifications and/or acknowledgments as referenced within this procurement packet. We further acknowledge that any and all specifications, provisions, and attachments of this response are incorporated into and made a part of any resulting agreement.

We agree that this response shall be good, and may not be withdrawn for a period of ninety (90) calendar days after the scheduled bid opening time and date for receiving the requested solicitation, as contained in the Specifications.

Lastly, we understand that any questions regarding compliance should be directed to our firm's legal counsel. We acknowledge that the individual authorized to bind the company is signing this Acknowledgement Form. By signing this Acknowledgement Form we understand we are providing written verification and certification of the aforementioned, and the County cannot execute a contract for goods or services without this declaration.

Respectfully submitted,

Firm: _____

Address: _____

Printed Name: _____

Title: _____

Signature: _____ Date: _____

PROCUREMENT OVERVIEW

PROCUREMENT OVERVIEW

THE RESPONDENT IS RESPONSIBLE FOR READING AND UNDERSTANDING ALL DOCUMENTS, FORMS, SPECIFICATIONS, AND INSTRUCTIONS WITHIN THIS ENTIRE DOCUMENT. Follow all instructions; you are responsible for obtaining any information needed in order to respond to this RFB. Further, the Respondent is responsible for providing any and all relevant information necessary for this Bid. Failure to do so will be at the Respondent's risk and may result in rejection of the Bid as non-conforming.

General Requirements apply to all advertised solicitations; however, these may be superseded, whole or in part, by OTHER DATA CONTAINED HEREIN. Review the Table of Contents. Be sure your Bid package is complete.

INTRODUCTION

Hidalgo County (hereinafter referred to as "**COUNTY**") is seeking qualified respondents interested in providing construction services for the **Las Milas Road Drainage, Bridge and Traffic Signal Installation Project**. Bids will be received in accordance with the requirements attached hereto as **Appendix "A"**. The response should address all requirements. Respondent may suggest substitutions of features which they feel would be in the best interest of COUNTY; however, a strong rationale must be presented for any deviation from the requirements. Substitutions are to be included on the Deficiencies and Deviations form attached as "Appendix "L". COUNTY reserves the right to reject the deviation and its effect on the overall Bids.

WAIVING OF INFORMALITIES

Hidalgo County reserves the right to waive minor informalities or technicalities when it is in the best interest of Hidalgo County.

AWARD

Hidalgo County may award the Bids on a lump sum basis to one (1) proposer. The County reserves the right to award the contract to the responsible bidder who submits the lowest and best bid and reserves the right to design evaluation criteria to be used in selecting the lowest and best bid for approval. Receipt of any qualification shall under no circumstances obligate the County to accept the lowest dollar qualification. The award of this contract shall be made to the responsible offeror whose qualification is determined to be the best-evaluated offer resulting from negotiation, taking into consideration the relative importance of price and other evaluation factors as herein set forth.

TERM

It is intended that the initial contract term will be for **one hundred sixty (160) working days** or until project is completed, subject to liquidated damages.

LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful offeror, 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.

TIME OF COMPLETION AND LIQUIDATED DAMAGES

The offeror 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 **160 Working Days** thereafter. The offeror must agree to pay as liquidated damages, the sum of ***$500.00*** for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

OBLIGATION OF OFFEROR

At the time of the opening of bids, each offeror 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 offeror to examine any form, instrument or document shall in no way relieve any offeror from any obligation with respect to his bid.

QUALIFICATIONS OF OFFEROR

The Owner may make such investigations as he deems necessary to determine the ability of the offeror to perform the work, and the offeror 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 offeror fails to satisfy the Owner that such offeror is properly qualified to carry out the obligations of the contract to complete the work contemplated therein. Conditional bids will not be accepted.

PREPARATION OF BID

Each bid must be submitted on the prescribed forms and Certification by Offeror (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 envelope bearing on the outside the name of the offeror, 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 envelope addressed as specified in the bid form.

COST OF SUBMISSION

Hidalgo County will not be liable for any costs incurred by the vendor in preparing a response to this procurement packet. Each Offeror acknowledges it is submitting a response at its own risk and expense. Further, no reimbursement for such charges or expenses shall be passed onto Hidalgo County. Hidalgo County makes no guarantee that any products or services will be purchased as a result of this solicitation and reserves the right to reject any and all submissions received. All responses and accompanying documentation will become the property of Hidalgo County. All responses are open to negotiation.

ELECTRONIC TRANSMISSION OF SUBMISSION

Hidalgo County Purchasing Department will not accept telegraphic or electronically transmitted submissions.

GENERAL REQUIREMENTS

One (*1*) original (pages one-sided) and **two (2) USBs** in **original PDF** format. Further instructions are listed below under **VENDOR INSTRUCTIONS**.

RESTRICTIVE OR AMBIGUOUS REQUIREMENTS

It is the responsibility of the submitter to review the procurement packet and to notify the Hidalgo County Purchasing Department if the requirements are formulated in a manner that would unnecessarily restrict competition or clarification on any requirements that are ambiguous. Any such protest or question

regarding the requirements or proposer's procedures must be received in writing via email by the deadline stated for Questions and Answers.

SUBMISSION DEADLINE AND BID OPENING

All submissions must be received on or before **Tuesday, April 5, 2022, at 3:00PM**. **Any submission received after this deadline will not be accepted and will be returned to sender.**

HAND-DELIVERED BID

Hidalgo County requires proposers, when hand-delivering Bid, to make sure that it is stamped with the date and time received by the Hidalgo County Purchasing staff.

SIGNING OF SUBMISSION

In order to be considered, all submittals **must** be signed by an authorized representative of the firm. **Please sign the original in blue ink and ensure the copy is clearly labeled**.

DELIVER TO:

US Postal Mail Address:
Eduardo Belmarez, MBA, CPM
Purchasing Director
ATTN: Jaime "JD" Cortez
Hidalgo County Purchasing Department
Administration Building
2812 S. Business Hwy 281
Edinburg, Texas 78539

Physical Address:
Eduardo Belmarez, MBA, CPM
Purchasing Director
ATTN: Jaime "JD" Cortez
Hidalgo County Purchasing Department
Administration Building
2802 S. Business Hwy. 281
Edinburg, Texas 78539

PRE-BID STREAMING

A ***non***-mandatory pre-Bid conference will be held on **Wednesday, March 23, 2022, at 3:00 p.m**. Due to the ongoing pandemic, and in order to abide by social distancing protocols and/or any applicable order(s), the Hidalgo County Purchasing Department is limiting the number of participants allowed in our office during pre-Bid meetings to authorized personnel only; however, this is a public pre-Bid meeting and it can be accessed via a live stream or by calling in the day of the event

Live stream:
https://hidalgocounty.zoom.us/j/82220002198?pwd=ODV4OFI2UXRaSWFPZExxb3NZbXgrZz09
Meeting ID: 822 2000 2198
Passcode: 401387

Dial by your location: +1 346 248 7799 US (Houston)
To find your local number: https://hidalgocounty.zoom.us/u/kb4ZS0Jvo5
Join by SIP: 82220002198@zoomcrc.com

BID OPENING STREAMING

Due to the ongoing pandemic, and in order to abide by social distancing protocols and/or any applicable order(s), the Hidalgo County Purchasing Department is limiting the number of participants allowed in our office during bid openings to authorized personnel only; however, this is a public bid opening and it can be accessed via a live stream or by calling in the day of the event.

Live stream:
https://hidalgocounty.zoom.us/j/84814292721?pwd=aGJSN0w5ZnFCMnU4emZyUnVxQUhnZz09
Meeting ID: 848 1429 2721
Passcode: 237668

Dial by your location: +1 346 248 7799 US (Houston)
To find your local number: https://hidalgocounty.zoom.us/u/kzMnM8kWD
Join by SIP: 84814292721@zoomcrc.com

QUESTIONS AND ANSWERS

Questions must be submitted via email to jaime.cortez@co.hidalgo.tx.us by **Friday, March 25, 2022, at 5:00 P.M**. Responses to submitted questions will be emailed to all participants who obtained their procurement packet directly from Hidalgo County Purchasing Department by **Tuesday, March 29, 2022**. Telephone inquiries will not be accepted.

ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications, or other pre-bid documents will be made to any offeror orally. Failure of any offeror to receive any such interpretation shall not relieve such offeror from any obligation under his bid as submitted. Any supplemental instructions and/or changes to the bid documents will be issued in the form of an addendum with a request to sign and return an acknowledgment of receipt of the addendum. All addenda so issued shall become part of the packet submittal

NOTICE OF COMMUNICATION

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 this procurement packet 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. "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 negotiation with a vendor which has been specifically authorized by the governing body.

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.

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.

BID SECURITY

Each bid must be accompanied by a certified check of the offeror, or a bid bond prepared on the form attached hereto, duly executed by the offeror 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 offeror have executed the contract, or if no award has been made within 60 days after the date of the opening of bids, upon demand of the offeror at any time thereafter, so long as he has not been notified of the acceptance of his bid.

CONDITION OF WORK

Each offeror 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 offeror 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 the work of any other contractor.

TERMINATION OF SERVICES

Any contract awarded to a qualified firm will be in effect until (a) the contract expires or (b) performance of all services are completed, or (c) terminated by County with or without cause, with thirty (30) days written notice prior to cancellation.

Supplement to Form HUD-4238-B® INFORMATION FOR BIDDERS

SAFETY STANDARDS AND ACCIDENT 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 of 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 places 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), who 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 the removal of injured persons 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. Water, sewer, or other utility services shall not be interrupted. Any damages to existing utilities will be the Contractor's responsibility.

3. 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 Contractor's price. All such repairs shall conform to the requirements of the company or agency servicing the facility.

4. The Contractor shall exercise extra care to prevent damage to all other structures in the area including, fences, roads, pipelines, utilities, etc., whether publicly or privately owned.

5. 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.

6. 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.

7. Prospective offerors should make a careful examination of the project site.

8. The contractor shall review his overall method and schedule of construction with the County prior to construction for proper coordination of inspection

9. No open trenches or excavation shall be left open overnight.

VENDOR INSTRUCTIONS

Responses to this procurement packet shall be formatted and organized in the following order for consistency and easy screening:

- All submissions must be typed, single-spaced, and printed single-sided on 8 ½" by 11" paper.
- One (1) original, **pages one-sided marked "ORIGINAL"** and two (2) USBs in PDF format. Original document must be submitted with a Cover Page containing the information listed in the Submission Outline/Checklist, under Submission Cover Page. Two (2) USBs containing the complete response in PDF, Word, and/or Excel format must be provided and placed in the ORIGINAL response. The PDF document must also be signed. A self-adhesive packet may be used to secure the USB. The USB must also be properly labeled.
- The complete response must be sealed in an appropriately sized envelope or box for delivery to the Hidalgo County Purchasing Department, per instructions in the Procurement Packet Submission paragraph of the Legal Notice section contained within this procurement packet.
- All documents must be labeled with the vendor's name and the RFB number. Any response received by the Hidalgo County Purchasing Department that is not identified on the outside with the RFB number will be at risk for rejection.
- Each section of the vendor's response should start on a new page. A tabbed divider page marked with the section number should be used to separate each section.
- Prepare a Table of Contents for the response being submitted and place it after the Submission Cover Sheet and before Section I. The Table of Contents must list all Sections and the contents of each section as listed in **Appendix "A"**.
- The submittal must be in the order listed in the Submission Outline/Checklist below.

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.) State allowances

LAWS AND REGULATIONS

The offeror'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.

SUBMISSION OUTLINE/CHECKLIST

To assist in ensuring all submissions received are complete, it is recommended for the Offeror to use this Submission Outline as a Checklist prior to submitting a response. All Responses must be submitted in the following order with the guidelines provided within this solicitation:

_____ Cover Sheet
- Company Name, Company Address, Company Phone Number
- Project Name: Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project
- Procurement Number: RFB No. 22-0094-04-05-JDC
- Opening Date: Tuesday, April 5, 2022
- Opening Time: 3:00pm

_____ Table of Contents

_____ Required Documents

- _____ Legal Notice Acknowledgement
- _____ Appendix "A" - A-1 Statement of Credentials
- _____ Appendix "B" - Bid Page
- _____ Appendix "C" - Insurance & Bond Requirements
  - Proof of Insurance
  - Insurance Requirement Acknowledgement
  - Bid Bond
  - Project Requirements Acknowledgement
- _____ Appendix "D" - Conflict of Interest Questionnaire
  - CIQ Form - Copy of County Clerk File with fee receipt (when applicable)
- _____ Appendix "E" - Vendor Forms
  - Vendor Enrollment Solution
  - HUB Declaration
- _____ Appendix "F" - Certification Regarding Debarment
  - Signed Certification
  - SAM.gov Registration Acknowledgement
- _____ Appendix "H" - Contracts Under Federal Award 2 - CFR 200
  - Byrd Anti-Lobbying Contract Clause
  - 2 CFR 200 Certification
- _____ Appendix "J" - Respondent's Affidavit
- _____ Appendix "L" - Deficiencies and Deviations Form (when applicable)
- _____ Addenda (when applicable; see Addenda under Legal Notice)

APPENDIX A

REQUIREMENTS/SCOPE OF SERVICES

APPENDIX "A"

Specifications/Requirements

"Las Milas Road Drainage, Bridge and Traffic Signal Installation Project"

RFB No. 22-0094-04-05-JDC

REQUEST FOR BID:

The required contents and limitations for the preparation of the RFB are described in this section. Failure to provide the requested information or adhere to any County limitations will/may result in disqualification of the submitted RFB.

SCOPE OF WORK:

The County of Hidalgo is seeking a contract with a competent contractor for "Las Milas Road Drainage, Bridge and Traffic Signal Installation Project". (PS&E attached as Appendix "S" & Appendix "T")

The following outlines the Request for Bids:

PROOF OF FINANCIAL AND BUSINESS CAPABILITY:

Proposers must, upon request, provide satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these requirements. Hidalgo County will make the final determination as to the vendor's ability.

RESPONDENT DEFAULT:

Hidalgo County reserves the right, in the case of respondent default, to procure the articles or services from other sources and hold the defaulting respondent responsible for any excess costs occasioned thereby.

SUBCONTRACTING:

The successful respondent may not subcontract the award without the written consent of the Commissioners' Court of Hidalgo County.

UNDERSTANDING OF THE PROJECT:

This section should demonstrate the respondents' understanding of the project's needs, the work required, and any local issues or concerns. This description should be concise, candid, and limited to three (*3*) pages in length.

FIRM QUALIFICATIONS/EXPERIENCE:

This section should include a list of at least five (*5*) similar projects. All projects involving counties, cities, or other governmental agencies shall be added as an attachment and is not subject to the five-page limit. For each project, a client name and phone number should be included for reference purposes. Provide the names of the personnel proposed for this project who participated in the listed projects.

This project list is limited to five (*5*) pages. Describe the history of change orders required and the proposed method for detailing the cost of the change orders.

PERSONNEL AND STAFFING:

The offeror will provide the proposed project team structure as well as resumes for the proposed project manager, project superintendent, and other key personnel. Applicable certifications/registrations and other pertinent information that demonstrates their qualifications to perform the contract shall be included.

There is a one (*1*) page limitation for each biographic summary provided.

REQUIRED CERTIFICATIONS AND SUBMITTAL:

This section will contain any current licenses and/or certifications as required by the STATE OF TEXAS.

Appendix "A-1"
STATEMENT OF CREDENTIALS

1. GENERAL: In order to assist the Owner in determining the ability of each Offeror to properly fulfill the requirements of this proposed contract, the Offeror 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 Offeror may submit any additional information he/she desires.

Name of Offeror: _____

Address: _____

_____

Date Organized: _____ Date Incorporated: _____

Office Number: _____ Cell 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 Offeror will give below a list of similar projects which he/she has completed within the last five (5) years.

1. Owner: _____

Address: _____

Ph. / Fax Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

****

2. Owner: _____

Address: _____

Ph. / fax Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

****

3. Owner: _____

Address: _____

Ph. / fax Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

****

4. Owner: _____

Address: _____

Ph. / fax Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

****

5. Owner: _____

Address: _____

Ph. / fax Number: _____ Email: _____

Scope of Work Description: _____

Date Completed: _____Total Cost: _____

****

3. CONTRACTS ON HAND: The Offeror 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 Hidalgo County's project. Use an additional page if necessary. This information is considered preliminary and may be revised prior to award and re-submitted during the pre-construction phase. However, it is expressly understood that the use of any subcontractor other than those listed with the proposal shall require written approval from Hidalgo County.

Failure to submit the information as required may result in a disqualification of your proposal.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

5. PERFORMANCE OF WORK BY OFFEROR: The general contractor/bidder shall perform services with its own organization and may subcontract portions of the project as needed and/or depending on the type of project as well as in compliance with applicable law and/or any applicable funding requirements. The general contractor/bidder shall provide in its response an estimate of services it will perform with its organization and those to be subcontracted, or it shall acknowledge that it is able to comply with percentages set forth by the County, if any, in the project specifications.

Performance of work on Texas Department of Transportation (TxDOT) projects shall be in accordance with applicable TxDOT and federal requirements. Unless otherwise specified, the general contractor/bidder on TxDOT projects shall perform at least eighty percent (80%) of the work with their own organization, and not more 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 Offeror in dividing the work among subcontractors or in establishing the extent of work to be performed by any trade.

Awarded Offeror shall assign a project superintendent who is directly employed by the Offeror. 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.

Offeror shall have a significant business presence in 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. The county reserves the right to request payrolls and any necessary documentation to confirm that the local office meets these requirements.

Offeror 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 offeror find discrepancies in, or omissions from the plans, specifications, or other documents, or should he/she be in doubt as to their meaning, he/she should at once notify the Engineer and obtain clarification by addendum prior to submitting any proposal.

Offeror hereby certifies that said company carries liability coverage and workers compensation insurance coverage that meets the requirements set forth in this Request for Competitive Sealed Proposal when performing work on this project for Hidalgo County.

Furthermore, offeror 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. Offeror 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 rates.

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 _____

APPENDIX B

BID PAGE

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
132	6006		EMBKMT (FINAL) (DENS CONT) (TY C) _____ DOLLARS and _____ CENTS	CY	16,458.00		
400	6010		STRUCT EXCAV (SPL) _____ DOLLARS and _____ CENTS	CY	314.00		
400	6011		SAND BACKFILL _____ DOLLARS and _____ CENTS	CY	5,320.00		
402	6001		TRENCH EXCAVATION PROTECTION _____ DOLLARS and _____ CENTS	LF	4,965.00		
432	6001		RIPRAP (CONC) (4") _____ DOLLARS and _____ CENTS	CY	196.00		
462	6016		CONC BOX CULV (7'X5') _____ DOLLARS and _____ CENTS	LF	67.00		
462	6018		CONC BOX CULV (7'X7') _____ DOLLARS and _____ CENTS	LF	271.00		
462	6042		CONC BOX CULV (12'X8') _____ DOLLARS and _____ CENTS	LF	288.00		
464	6002		RC PIPE (CL III)(15") _____ DOLLARS and _____ CENTS	LF	299.00		
464	6003		RC PIPE (CL III)(18") _____ DOLLARS and _____ CENTS	LF	582.00		
464	6005		RC PIPE (CL III)(24") _____ DOLLARS and _____ CENTS	LF	142.00		
464	6043		RC PIPE (CL III)(48")(SPL) _____ DOLLARS and _____ CENTS	LF	3,341.00		
465	6009		JCTBOX (COMPL)(PJB)(5'X5') _____ DOLLARS and _____ CENTS	EA	1.00		

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
465	6011		JCTBOX (COMPL)(PJB)(6'X6') _____ DOLLARS and _____ CENTS	EA	2.00		
465	6130		INLET (COMPL)(PSL)(FG)(3'X5' - 3'X5') _____ DOLLARS and _____ CENTS	EA	2.00		
465	6365		JCTBOX (COMPL)(CIP)(10'X10') _____ DOLLARS and _____ CENTS	EA	1.00		
466	6212		WINGWALL (SW-0)(HW=9') _____ DOLLARS and _____ CENTS	EA	2.00		
466	6254		WINGWALL (SW-0)(HW=10') _____ DOLLARS and _____ CENTS	EA	2.00		
467	6363		SET (TY II)(18")(RCP)(6:1)(P) _____ DOLLARS and _____ CENTS	EA	4.00		
479	6002		ADJUSTING INLETS _____ DOLLARS and _____ CENTS	EA	1.00		
496	6003		REMOV STRUCT (MANHOLE) _____ DOLLARS and _____ CENTS	EA	1.00		
496	6007		REMOV STRUCT (PIPE) _____ DOLLARS and _____ CENTS	LF	3,364.00		
500	6001		MOBILIZATION _____ DOLLARS and _____ CENTS	LS	1.00		
502	6001		BARRICADES, SIGNS, AND TRAFFIC HANDLING _____ DOLLARS and _____ CENTS	MO	8.00		
506	6004		ROCK FILTER DAMS (INSTALL) (TY 4) _____ DOLLARS and _____ CENTS	LF	200.00		

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
506	6011		ROCK FILTER DAMS (REMOVE) _____ DOLLARS and _____ CENTS	LF	200.00		
506	6021		CONSTRUCTION EXIT (INSTALL) (TY 2) _____ DOLLARS and _____ CENTS	SY	234.00		
506	6024		CONSTRUCTION EXIT (REMOVE) _____ DOLLARS and _____ CENTS	SY	234.00		
506	6041		BIODEG EROSN CONT LOGS (INSTL) (12") _____ DOLLARS and _____ CENTS	LF	360.00		
506	6043		BIODEG EROSN CONT LOGS (REMOVE) _____ DOLLARS and _____ CENTS	LF	360.00		
1007	6007		IRRIGATION VALVE (12") _____ DOLLARS and _____ CENTS	EA	1.00		
1007	6009		IRRIGATION WELL (36") _____ DOLLARS and _____ CENTS	EA	1.00		
1007	6012		IRRIGATION GATE (12") _____ DOLLARS and _____ CENTS	EA	2.00		
1008	6001		PRSSR IRRG PVC PIPE (18") _____ DOLLARS and _____ CENTS	LF	104.00		
1008	6003		PRSSR IRRG PVC PIPE (12") _____ DOLLARS and _____ CENTS	LF	76.00		
7049	6054		SPLIT STEEL CASING (24") _____ DOLLARS and _____ CENTS	LF	280.00		
					TOTAL BID $		

TOTAL IN WORDS

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will prevail.)
The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
Bidder understands that the Owner reserves the right to reject any or all bids to waive any minor informalities in the bidding.

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
ADDITIVE ALTERNATIVE NO. 1							
400	6005		CEM STABIL BKFL _____ DOLLARS and _____ CENTS	CY	245.00		
409	6001		PRESTR CONC PIL (16IN SQ) _____ DOLLARS and _____ CENTS	LF	1,240.00		
409	6004		PRESTR CONC PIL (24IN SQ) _____ DOLLARS and _____ CENTS	LF	420.00		
420	6013		CL C CONC (ABUT) _____ DOLLARS and _____ CENTS	CY	57.70		
420	6025		CL C CONC (BENT) _____ DOLLARS and _____ CENTS	CY	22.90		
422	6001		REINF CONC SLAB _____ DOLLARS and _____ CENTS	SF	9,000.00		
425	6037		PRESTR CONC GIRDER (TX40) _____ DOLLARS and _____ CENTS	LF	1,074.00		
450	6023		RAIL (TY SSTR) _____ DOLLARS and _____ CENTS	LF	723.00		
454	6018		SEALED EXPANSION JOINT (4IN) (SEJ-M) _____ DOLLARS and _____ CENTS	LF	106.00		
ADDITIVE ALTERNATIVE NO. 1 TOTAL BID $							

TOTAL IN WORDS

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will prevail.)
The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
Bidder understands that the Owner reserves the right to reject any or all bids to waive any minor informalities in the bidding.

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
ADDITIVE ALTERNATIVE NO. 2							
416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN) _____ DOLLARS and _____ CENTS	LF	26.20		
416	6034		DRILL SHAFT (TRF SIG POLE) (48 IN) _____ DOLLARS and _____ CENTS	LF	86.70		
618	6033		CONDT (PVC) (SCH 40) (4") _____ DOLLARS and _____ CENTS	LF	334.00		
618	6034		CONDT (PVC) (SCH 40) (4")(BORE) _____ DOLLARS and _____ CENTS	LF	222.00		
620	6007		ELEC CONDR (NO.8) BARE _____ DOLLARS and _____ CENTS	LF	606.00		
620	6009		ELEC CONDR (NO.6) BARE _____ DOLLARS and _____ CENTS	LF	13.00		
620	6010		ELEC CONDR (NO.6) INSULATED _____ DOLLARS and _____ CENTS	LF	38.00		
621	6005		TRAY CABLE (4 CONDR) (12 AWG) _____ DOLLARS and _____ CENTS	LF	945.00		
624	6002		GROUND BOX TY A (122311) W/APRON _____ DOLLARS and _____ CENTS	EA	6.00		
624	6010		GROUND BOX TY D (162922) W/APRON _____ DOLLARS and _____ CENTS	EA	1.00		
625	6003		ZINC-COAT STL WIRE STRAND (3/8") _____ DOLLARS and _____ CENTS	LF	155.00		

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
628	6301		ELC SRV TY T 120/240 000(NS)GS(L)TS(O) _____ DOLLARS and _____ CENTS	EA	2.00		
680	6001		INSTALL HWY TRF SIG (FLASH BEACON) _____ DOLLARS and _____ CENTS	EA	1.00		
680	6002		INSTALL HWY TRF SIG (ISOLATED) _____ DOLLARS and _____ CENTS	EA	1.00		
680	6004		REMOVING TRAFFIC SIGNALS _____ DOLLARS and _____ CENTS	EA	1.00		
682	6001		VEH SIG SEC (12")LED(GRN) _____ DOLLARS and _____ CENTS	EA	8.00		
682	6002		VEH SIG SEC (12")LED(GRN ARW) _____ DOLLARS and _____ CENTS	EA	4.00		
682	6003		VEH SIG SEC (12")LED(YEL) _____ DOLLARS and _____ CENTS	EA	12.00		
682	6004		VEH SIG SEC (12")LED(YEL ARW) _____ DOLLARS and _____ CENTS	EA	8.00		
682	6005		VEH SIG SEC (12")LED(RED) _____ DOLLARS and _____ CENTS	EA	12.00		
682	6006		VEH SIG SEC (12")LED(RED ARW) _____ DOLLARS and _____ CENTS	EA	4.00		
682	6023		BACK PLATE (12")(3 SEC) _____ DOLLARS and _____ CENTS	EA	8.00		
682	6024		BACK PLATE (12")(4 SEC) _____ DOLLARS and _____ CENTS	EA	4.00		

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
684	6010		TRF SIG CBL (TY A)(12 AWG)(5 CONDR) _____ DOLLARS and _____ CENTS	LF	1,037.00		
684	6012		TRF SIG CBL (TY A)(12 AWG)(7 CONDR) _____ DOLLARS and _____ CENTS	LF	987.00		
686	6007		INS TRF SIG PL AM (S)STR(TY B) _____ DOLLARS and _____ CENTS	EA	2.00		
686	6059		INS TRF SIG PL AM(S)1 ARM(55')LUM _____ DOLLARS and _____ CENTS	EA	4.00		
6306	6001		VIVDS PROSR SYS _____ DOLLARS and _____ CENTS	EA	1.00		
6306	6003		VIVDS CAM ASSY VAR LNS _____ DOLLARS and _____ CENTS	EA	4.00		
6306	6007		VIVDS CABLING _____ DOLLARS and _____ CENTS	LF	927.00		
6061	6001		GPS COMMUNICATIONS UNIT _____ DOLLARS and _____ CENTS	EA	1.00		
ADDITIVE ALTERNATIVE NO. 2 TOTAL BID $							

TOTAL IN WORDS

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will prevail.)
The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
Bidder understands that the Owner reserves the right to reject any or all bids to waive any minor informalities in the bidding.

APPENDIX C

INSURANCE & BOND REQUIREMENTS

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 and any extension hereof:

1. **Comprehensive General Liability insurance** policy with limits of not less than Five Hundred Thousand Dollar ($500,000.00) providing additional coverage to all underlying liabilities of County. Policy shall cover, but not be limited to, Bidder's activities in providing the Services for County; all persons, vehicles, equipment connected with providing Services; and theft or loss of Bidder's property.

2. **Automobile liability insurance** policy, covering all owned, non-owned or hired/leased automobiles, 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 provide d to County hereunder.

3. **Uninsured/Underinsured motorist coverage** in an amount equal to the auto liability limits set forth immediately above;

4. **Workers Compensation Insurance**: 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. Workers Compensation policies must include other States Endorsement to include TEXAS if the business is domiciled outside the State of Texas.

- *Bidder shall obtain and maintain any and all other insurances which may be necessary in providing the good/service applicable to this procurement or are otherwise required by law.*
- *Any and all insurance policies shall be in amounts prescribed by law or otherwise specified by the County, but in no event less than the minimum amounts prescribed by law.*

Additional Insurance Requirements:

a. Bidder shall furnish to County certificate(s) of insurance, and all renewals throughout the duration of the Project, issued by the insurer that such insurance is in full force and effect.
b. Certificates of insurance shall be submitted to County for approval prior to any services being performed by Bidder.
c. **Hidalgo County will only accept certificates of insurance on an Acord form (as attached hereto).**

d. For each policy, except Workers' Compensation, Bidder shall name the County as an additional insured.
e. 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.
f. 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 of 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.
g. All insurance policies will be endorsed to provide a waiver of subrogation in favor of the County.
h. County reserves the right to review the insurance requirements of this section during the effective period of the contract and to require adjustment of insurance coverage and their limits when deemed necessary and prudent by County based upon changes in statutory law, court decisions, or the claims history of the industry as well as the Bidder.
i. Insurance policies shall be obtained at Bidder's sole expense. County does not maintain and will not obtain insurance of any type to protect Bidder against loss, damage or injury that may in any way result from Bidders performance of the services.
j. In no event shall the County be liable for any loss, damage to or destruction of any property belonging to the Bidder.
k. Bidder is responsible for ensuring all required insurance policies are valid for the duration of the contract.
l. All insurance policies are to be issued by an insurance company authorized to do business in the State of Texas and acceptable to County.
m. Bidder shall make any other insurance documentation available to County upon request.

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

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	CONTACT NAME:
	PHONE (A/C, No, Ext): / FAX (A/C, No):
	E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A :	
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED

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 / ALL OWNED AUTOS / SCHEDULED AUTOS / HIRED AUTOS / NON-OWNED AUTOS						BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB / OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB / CLAIMS-MADE						AGGREGATE	$
	DED / RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						WC STATU-TORY LIMITS / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N / N/A					E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

SAMPLE

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, If more space is required)

CERTIFICATE HOLDER

HIDALGO COUNTY
ATTN: PURCHASING DEPARTMENT
2812 S, HIGHWAY BUS. 281
EDINBURG, TEXAS 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

ACORD 25 (2010/05)

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INSURANCE REQUIREMENT ACKNOWLEDGEMENT

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 award of the project by the Hidalgo County Commissioners' Court;

- will acquire additional amount needed to meet the County's requirements within 10 working days after notification from Purchasing Department of award of the project by the Hidalgo County Commissioners' Court; currently carry the following:

Professional Liability (Errors & Omissions): $_____
Automobile Liability: $_____General Liability: $_____

- have already been met, see attached copy of certificate of insurance.

_____ _____
Authorized Representative Date

Notice to Bidder:
A certificate of insurance for the required insurance limits shall be provided to the Purchasing Department in order to qualify for award of the project 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 award of the project to be rescinded and then re-awarded to next qualified vendor. 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 BE ACCOMPANY YOUR RESPONSE

HIDALGO COUNTY

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 _____, 2_____.

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 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.

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 project, 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 or response.**

_____ _____

Authorized Signature Date

_____

Company

_____

Address

_____

City, State, Zip

APPENDIX D

CONFLICT OF INTEREST QUESTIONNAIRE

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor 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 vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor 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 on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

APPENDIX E

VENDOR ENROLLMENT SOLUTION and HUB DECLARATION

VENDOR ENROLLMENT SOLUTION

The Vendor Registration Form has been automated and will only be accepted through online submission. The Vendor Registration Form can be found on the Hidalgo County website: https://www.hidalgocounty.us, Home > Departments > Purchasing > Potential Vendors, or by using the link: https://www.hidalgocounty.us/2912/Potential-Vendors-ConsiderMe.

Upon submission, you will receive an automatic confirmation email response advising your form has been successfully submitted. All submissions are reviewed by the Purchasing Department in the order they are received. Upon review and verification, approved vendors will be will be placed on our Potential Vendors List. Any incomplete submissions will be rejected and returned to the vendor to correct.

If you have any questions regarding the Vendor Registration Form please call the Purchasing Department at (956) 318-2626 or email us at vendor.application@co.hidalgo.tx.us.

For new Vendors:
As part of your procurement packet response, a copy of the confirmation email received is required.

For Current Vendors:
If your Company is a current active Vendor doing business with Hidalgo County, please submit this page and provide your Vendor Number below:

Vendor No.: _____

REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK.

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:

APPENDIX F

CERTIFICATION REGARDING DEBARMENT

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.

APPENDIX G

TITLE VI APPENDICES

APPENDIX A
THE TITLE VI CONTRACTOR ASSURANCES

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor will comply with the Regulations relative to nondiscrimination in federally assisted programs of the United States Department of Transportation Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, disability, income or Limited English Proficiency in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and Acts and the Regulations relative to Non-discrimination on the grounds of race, color, national origin, sex, age, or disability.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the federal funding agency (FHWA or FTA) to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the Recipient or the Federal Funding Agency, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Non-compliance:** In the event of the contractor's non-compliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Funding Agency may determine to be appropriate, including, but not limited to:
    a. withholding contract payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Funding Agency may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with, litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX B
CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4:

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the **COUNTY OF HIDALGO** will accept title to the lands and maintain the project constructed thereon in accordance with (Name of Appropriate Legislative Authority), the Regulations for the Administration of (Naming of Appropriate Program), and the policies and procedures prescribed by the (Federal Highway Administration) of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the **COUNTY OF HIDALGO** all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto **COUNTY OF HIDALGO** and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the **COUNTY OF HIDALGO**, its successors and assigns.

The **COUNTY OF HIDALGO**, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (l) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and] * (2) that the **COUNTY OF HIDALGO** will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended[, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction]. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

APPENDIX C
CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the **COUNTY OF HIDALGO** pursuant to the provisions of Assurance 7(a):

A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:

   1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, **COUNTY OF HIDALGO** will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*

C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the **COUNTY OF HIDALGO** will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the **COUNTY OF HIDALGO** and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.

APPENDIX D
CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by **COUNTY OF HIDALGO** pursuant to the provisions of Assurance 7(b)"

A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the List of discrimination Acts And Authorities.

B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above nondiscrimination covenants, **COUNTY OF HIDALGO** will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*

C. With respect to deeds, in the event of breach of any of the above nondiscrimination covenants, **COUNTY OF HIDALGO** will there upon revert to and vest in and become the absolute property of **COUNTY OF HIDALGO** and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E
TITLE VI LIST OF PERTINENT NONDISCRIMINATION ACTS AND AUTHORITIES

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Nondiscrimination Authorities

- Title VI of the Civil Rights Act of 1964 (42 USC § 2000d *et seq*., 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination in Federally-assisted programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 USC § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Section 504 of the Rehabilitation Act of 1973 (29 USC § 794 *et seq*.), as amended (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended (42 USC § 6101 *et seq*.) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (49 USC § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination 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 USC §§ 12131 – 12189) as implemented by U.S. Department of Transportation regulations at 49 CFR parts 37 and 38;
- The Federal Aviation Administration's Nondiscrimination statute (49 USC § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 USC 1681 et seq).

Appendix H

REQUIRED CONTRACT CLAUSES FOR CONTRACTS UNDER FEDERAL AWARD

2 C.F.R. § 200.327 & 2 C.F.R. PART 200, APPENDIX II, REQUIRED CONTRACT CLAUSES FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS

The United States Office of Management and Budget (OMB) issued in 2 C.F.R. 200: *Uniform Administrative Requirements, Cost Principals and Audit Requirements for Federal Awards* (Uniform Guidance). Subpart D: Post Federal Award Requirements: 2 CFR §§200.317-200.327 of the Uniform Guidance contain provisions applicable to procurements made with federal grant funding. [Except as otherwise provided, updated Post Federal Award Requirements (i.e.: 2 CFR §§200.317-200.327) apply to declarations and awards issued on or after November 12, 2020].

As a non-Federal entity, the County of Hidalgo's ("County") contracts must contain the applicable contract clauses described in Appendix II to the Uniform Guidance (Contract Provisions for non-Federal Entity Contracts Under Federal Awards), which are set forth below. (2 C.F.R. §200.327). If applicable, the following clauses shall supersede any existing, similar clauses stated within the bid document, contract, and/or Terms and Conditions. *The term "Contractor" used herein refers to the proposer, bidder or other entity/individual responding to the applicable procurement packet.*

If applicable, the regulations in 2 CFR, Part 200 and Appendix II to the Uniform Guidance, as it may be amended from time to time, and the contract clauses below, are incorporated by reference as part of this procurement packet and any resulting agreement.

To procure goods and services using funds under a federal grant or contract, specific federal laws, regulations, and requirements may apply in addition to those under state law. The following provisions are required and apply when federal funds are expended by the County of Hidalgo for any contract resulting from this procurement process.

1. **Remedies**.

   a. Applicability. This requirement applies to all Federal grant and cooperative agreement programs.

   b. Standard. Contracts for more than the simplified acquisition threshold currently set at $150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate. See 2 C.F.R. Part 200, Appendix II, ¶ A.

   c. Statement. Pursuant to Federal Rule (A) above, when federal funds are expended by the County, the County reserves all rights and privileges under the applicable laws and regulations with respect to this procurement in the event of breach of contract by either party. Contractor shall comply with all applicable Federal, State of Texas, and local laws, rules, and regulations and shall obtain all applicable licenses and permits for the conduct of its business and the performance of the services, and any provision of equipment and material ("Applicable Law"). All transactions related to any of the Contract Documents shall be governed by the laws of the State of Texas, and trial of any action brought in connection with the bid or the Contract Documents shall be held exclusively in a state court in the County of Hidalgo, Texas.

2. **Termination for Cause and Convenience**.

   a. Applicability. This requirement applies to all Federal grant and cooperative agreement programs.

   b. Standard. All contracts in excess of $10,000 shall address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement as follows. See 2 C.F.R. Part 200, Appendix II, ¶ B.

   c. Statement. *Termination*. County may terminate this Agreement for any reason upon ten (10) days written notice to the other party. County may terminate this Agreement immediately upon written notice if Contractor

breaches this Agreement. In the event of any termination, Contractor shall promptly deliver to the County any and all Work Materials prepared for the County prior to the effective date of such termination, all of which shall become County's sole property. After receipt of the Work Materials, County will pay Contractor for the services which the County determines were satisfactorily performed as of the effective date of the termination.

Excuses for Non-Performance. Either party shall be absolved from its obligations under this contract when and to the extent that performance is delayed or prevented (and in the County of Hidalgo's case when and to the extent that its need for the articles, materials or work to be supplied hereunder is reduced or eliminated) by reason of acts of God, fire explosion, war riots, strikes, labor disputes, or governmental laws, orders or regulations.

Default. If Contractor or Subcontractor shall breach any provision hereof or shall become insolvent, enter voluntary or involuntary bankruptcy or receivership proceedings or make an assignment to the benefit of creditors, County of Hidalgo shall have the right (without limiting any other rights or remedies which it may have hereunder or by operation of law) to terminate this contract by written notice to Contractor whereupon County shall be relieved of all further obligation hereunder except the obligation to pay the reasonable value of Contractor's prior performance (at not exceeding the contract rate), and Contractor shall be liable to County for all costs incurred by County in completing or procuring the completion of performance in excess of the contract price herein specified. The County's right to require strict performance of any obligation hereunder shall not be affected by any previous waiver, forbearance of course of dealing. Time is of the essence thereof.

3. **Equal Employment Opportunity**.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. Except as otherwise provided under 41 C.F.R. Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 C.F.R. § 60-1.3 must include the equal opportunity clause provided under 41 C.F.R. § 60- 1.4(b), in accordance with Executive Order 11246**,** *Equal Employment Opportunity* (30 Fed. Reg. 12319, 12935, 3 C.F.R. Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, *Amending Executive Order 11246 Relating to Equal Employment Opportunity*, and implementing regulations at 41 C.F.R. Part 60 (Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor). See 2 C.F.R. Part 200, Appendix II, ¶ C.

c. Key Definitions:

(1) *Federally Assisted Construction Contract*. The regulation at 41 C.F.R. § 60-1.3 defines a "federally assisted construction contract" as any agreement or modification thereof between any applicant and a person for construction work which is paid for in whole or in part with funds obtained from the Government or borrowed on the credit of the Government pursuant to any Federal program involving a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, or any application or modification thereof approved by the Government for a grant, contract, loan, insurance, or guarantee under which the applicant itself participates in the construction work.

(2) *Construction Work*. The regulation at 41 C.F.R. § 60-1.3 defines "construction work" as the construction, rehabilitation, alteration, conversion, extension, demolition or repair of buildings, highways, or other changes or improvements to real property, including facilities providing utility services. The term also includes the supervision, inspection, and other onsite functions incidental to the actual construction

d. Statement: Contractor will comply with the Nondiscrimination Civil Rights Act of 1964, as amended and all Federal regulations relative to nondiscrimination in Federally assisted programs. The regulation at 41 C.F.R. Part 60-1.4(b) requires the insertion of the following contract clause:

"During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff 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 for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States."

4. **Davis Bacon Act and Copeland Anti-Kickback Act**.

a. Applicability of Davis-Bacon Act. The Davis-Bacon Act only applies to the emergency Management Preparedness Grant Program, Homeland Security Grant Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant Program, Port Security Grant Program, and Transit Security Grant Program. **It does not apply to other Federal grant and cooperative agreement programs, including the Public Assistance Program**.

b. Standard. All prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3144 and 3146-3148) as supplemented by Department of Labor regulations at 29 C.F.R. Part 5 (Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction)).

In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

In contracts subject to the Davis-Bacon Act, the contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. § 3145), as supplemented by Department of Labor regulations at 29 C.F.R. 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). The Copeland Anti-Kickback Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to FEMA or applicable Federal entity. See 2 C.F.R. Part 200, Appendix II, ¶ D.

c. Statement. The regulation at 29 C.F.R. § 5.5(a) does provide the required contract clause that applies to compliance with both the Davis-Bacon and Copeland Acts. However, as discussed in the previous subsection, the Davis-Bacon Act does not apply to Public Assistance recipients and subrecipients. In situations where the Davis-Bacon Act does not apply, neither does the Copeland "Anti-Kickback Act." However, for purposes of grant programs where both clauses do apply, FEMA or applicable Federal entity requires the following contract clause:

"Compliance with the Copeland "Anti-Kickback" Act.

(1) *Contractor*. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

(2) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as Federal requirements may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

(3) *Breach*. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

5. **Contract Work Hours and Safety Standards Act**.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. Where applicable (see 40 U.S.C. § 3701), all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by Department of Labor regulations at 29 C.F.R. Part 5.

Under 40 U.S.C. § 3702, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.

The requirements of 40 U.S.C. § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. See 2 C.F.R. Part 200, Appendix II, ¶ E.

The regulation at 29 C.F.R. § 5.5(b) provides the required contract clause concerning compliance with the Contract Work Hours and Safety Standards Act:

c. Statement.

"Compliance with the Contract Work Hours and Safety Standards Act.

(1) *Overtime requirements*. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) *Violation; liability for unpaid wages; liquidated damages*. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) *Withholding for unpaid wages and liquidated damages*. The County of Hidalgo shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) *Subcontracts*. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section."

6. **Rights to Inventions Made Under a Contract or Agreement**.

a. Applicability: Stafford Act Disaster Grants. This requirement **does not apply to the Public Assistance**, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling Assistance and Training Grant Program, Disaster Case Management Grant Program, and Federal Assistance

to Individuals and Households – Other Needs Assistance Grant Program, as FEMA or Federal awards under these programs do not meet the definition of "funding agreement."

b. Standard. If the FEMA or Federal award meets the definition of "funding agreement" under 37 C.F.R. § 401.2(a) and the non-Federal entity wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the non-Federal entity must comply with the requirements of 37 C.F.R. Part 401 (Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements), and any implementing regulations issued by FEMA or applicable awarding agency. See 2 C.F.R. Part 200, Appendix II, ¶ F.

c. Key Definition: The regulation at 37 C.F.R. § 401.2(a) currently defines "funding agreement" as any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal government. This term also includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as defined in the first sentence of this paragraph.

7. **Clean Air Act and the Federal Water Pollution Control Act**.

a. Applicability and Standard: Contracts of amounts in excess of $150,000 must contain a provision that requires the contractor to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. §§ 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. §§ 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency. See 2 C.F.R. Part 200, Appendix II, ¶ G.

b. Statement: Included in contracts as provided in section "7a" above.

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. and the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

(2) The contractor agrees to report each violation to the Federal awarding agency (e.g. Federal Emergency Management Agency-FEMA) and the Regional Office of the Environmental Protection Agency. Contractor understands and agrees that each violation reported to the County of Hidalgo will, in turn, be reported as required to assure notification to the Federal awarding agency and the appropriate Environmental Protection Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by the applicable Federal awarding agency (e.g. FEMA).

8. **Debarment and Suspension**.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. Non-Federal entities and contractors are subject to the debarment and suspension regulations implementing Executive Order 12549, *Debarment and Suspension* (1986) and Executive Order 12689, *Debarment and Suspension* (1989) at 2 C.F.R. Part 180 and the Department of Homeland Security's regulations at 2 C.F.R. Part 3000 (Nonprocurement Debarment and Suspension).

These regulations restrict awards, subawards, and contracts with certain parties that are debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities. See 2 C.F.R. Part 200, Appendix II, ¶ H; and Chapter IV, ¶ 6.d and Appendix C, ¶ 2. A contract award must not be made to parties listed in the SAM Exclusions. SAM Exclusions is the list maintained by the General

Services Administration that contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. SAM exclusions can be accessed at www.sam.gov. See 2 C.F.R. § 180.530; Chapter IV, ¶ 6.d and Appendix C, ¶ 2.

In general, an "excluded" party cannot receive a Federal grant award or a contract within the meaning of a "covered transaction," to include subawards and subcontracts. This includes parties that receive Federal funding indirectly, such as contractors to recipients and subrecipients. The key to the exclusion is whether there is a "covered transaction," which is any nonprocurement transaction (unless excepted) at either a "primary" or "secondary" tier. Although "covered transactions" do not include contracts awarded by the Federal Government for purposes of the nonprocurement common rule and DHS's implementing regulations, it does include some contracts awarded by recipients and subrecipient.

Specifically, a covered transaction includes the following contracts for goods or services:

(1) The contract is awarded by a recipient or subrecipient in the amount of at least $25,000.
(2) The contract requires the approval of FEMA or applicable Federal entity, regardless of amount.
(3) The contract is for Federally-required audit services.
(4) A subcontract is also a covered transaction if it is awarded by the contractor of a recipient or subrecipient and requires either the approval of FEMA or applicable Federal entity or is in excess of $25,000.

c. Statement. The following provides a debarment and suspension clause. It incorporates a method of verifying that contractors are not excluded or disqualified:

For maximum protection, provide a print or electronic document for every prime and subcontractor, from www.sam.gov in order to ensure that they are not debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs and activities.

This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

This certification is a material representation of fact relied upon by (insert name of subrecipient). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (name of state City serving as recipient and name of subrecipient), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions."

9. **Byrd Anti-Lobbying Amendment**.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. Contractors that apply or bid for an award of $100,000 or more must file the required certification. See 2 C.F.R. Part 200, Appendix II, ¶ I; 44 C.F.R. Part 18; Chapter IV, 6.c; Appendix C, ¶ 4. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or

organization for influencing or attempting to influence an officer or employee of any City, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. See Chapter IV, ¶ 6.c and Appendix C, ¶ 4.

c. Statement. The following statement in bold provides a Byrd Anti-Lobbying contract clause:

(IF APPLICABLE, PLEASE FILL IN BLANKS AND SIGN)

"Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended)

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient."

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding $100,000)

The undersigned Contractor, _____ certifies, to the best of his or her knowledge, 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 any 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 subrecipients 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 31, U.S.C. § 1352 (as amended by the Lobbying

Disclosure Act of 1995). 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.

The Contractor, _____ , certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq*., apply to this certification and disclosure, if any.

_____
Signature of Contractor's Authorized Official

_____
Name and Title of Contractor's Authorized Official

_____
Date"

10. **Procurement of Recovered Materials**.

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs.

b. Standard. A non-Federal entity that is a **state agency or agency of a political subdivision** of a state and its contractors must comply with Section 6002 of the Solid Waste Disposal Act, Pub. L. No. 89-272 (1965) (codified as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962). See 2 C.F.R. Part 200, Appendix II, ¶ J; 2 C.F.R. § 200.323; *PDAT Supplement*, Chapter V, ¶ 7.

The requirements of Section 6002 include procuring only items designated in guidelines of the EPA at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired by the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

c. Statement. The following provides the clause that a state agency or agency of a political subdivision of a state and its contractors can include in contracts meeting the above contract thresholds:

"(1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA- designated items unless the product cannot be acquired—
(i) Competitively within a timeframe providing for compliance with the contract performance schedule;
(ii) Meeting contract performance requirements; or
(iii) At a reasonable price.
(2) Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program.
(3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act."

11. **Prohibition on Contracting for Covered Telecommunications Equipment or Services – 2 CFR § 200.216 (FEMA Interim Policy #405-143-1 effective August 13, 2020).**

a. Applicability: This requirement applies to all Federal grant and cooperative agreement programs and/or as provided below, and is effective August 13, 2020.

b. Standard. A non-Federal entity is prohibited against using federal funds to purchase telecommunications and video surveillance equipment and services (such as but not limited to mobile phones, land lines, internet, video surveillance, and cloud servers) from certain companies/entities in covered foreign countries for national security reasons. This regulation is being incorporated into federal grants and contracts received by the County through 2 CFR 200.216 and/or Federal Acquisition Regulations (FAR) clause 52.204-25; as well as guidance provided through Federal Emergency Management Agency (FEMA) Policy #405-143-1. See 2 C.F.R. Part 200, Appendix II, ¶ K

Currently, applicable federal provisions provide that Covered Foreign country means the People's Republic of China and covered telecommunications equipment or services means –

i. Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation, (or any subsidiary or affiliate of such entities);

ii. For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);

iii. Telecommunications or video surveillance services provided by such entities or using such equipment; or

iv. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

The definition of "Affiliate" can be found in FAR 2.101. Listing of subsidiaries and affiliates can be found in Supplement Number 4 to 15 CFR Part 744.

c. Statement. Federal awards recipients and subrecipients, as well as their contractors and subcontractors, include the following required contract clause in applicable new, extended, or renewed contracts and subcontracts as per the provisions discussed above.

PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES

(a) Definitions. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in FEMA Policy, #405-143-1 Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services As used in this clause—

(b) Prohibitions.

(1) Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

(2) Unless an exception in paragraph (c) of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:

(i) Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;

(ii) Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;

(iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or

(iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) Exceptions.

(1) This clause does not prohibit contractors from providing—

a. A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
b. Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) By necessary implication and regulation, the prohibitions also do not apply to:

a. Covered telecommunications equipment or services that:
   i. Are not used as a substantial or essential component of any system; and
   ii. Are not used as critical technology of any system.
b. Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

(d) Reporting requirement.

(1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:

(i) Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments.

12. **Domestic Preferences for Procurements**

a. Applicability: This requirement of this section must be included in all subawards including all contracts and purchase orders for work or products under Federal award applies to all contracts and purchase orders for work or products using federal funds.

b. Standard. As appropriate, and to the extent consistent with law, Non Federal Entities should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes, but is not limited to, iron, aluminum, steel, cement, and other manufactured products. See 2 C.F.R. Part 200.322 and2 C.F.R. Part 200, Appendix II, ¶ L

c. Statement. The following provides the required Domestic Preferences for Procurements contracts clause that is incorporated herein by reference.

"Domestic Preference for Procurements
As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.
For purposes of this clause:

- *Produced in the United States* means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- *Manufactured products* mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber."

ADDITIONAL REQUIRED CONTRACT CLAUSES FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS WITH THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

Additional FEMA or applicable Federal Requirements. In addition to the requirements above, non-Federal entity contracts under Federal award subject to financial assistance from FEMA are required to contain the following additional contract clauses. The Uniform Guidance authorizes FEMA to require additional provisions for non-Federal entity contracts. FEMA, pursuant to this authority, requires or recommends the following:

These clauses are incorporated by reference as part of this procurement packet and any resulting agreement.

1. **Changes**.

a. Standard. To be eligible for FEMA assistance under the non-Federal entity's Federal grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope. FEMA or applicable Federal entity recommends, therefore, that a non-Federal entity include a changes clause in its contract that describes how, if at all, changes can be made by either party to alter the method,

price, or schedule of the work without breaching the contract. The language of the clause may differ depending on the nature of the contract and the end-item procured.

b. Statement. The following provides a contract clause regarding access to records:

"The contractor shall secure written authorization before proceeding with any additional work, whether requested by the County or required to complete the contract. The cost for any changes to the contract price, whether requested by the County or the Contractor will be approved only after submitting the contractor's true costs for the work and related equipment costs and site expenses."

2. **Access to Records**.

a. Standard. All non-Federal entities must place into their contracts a provision that all contractors and their successors, transferees, assignees, and subcontractors acknowledge and agree to comply with applicable provisions governing Department and FEMA or applicable Federal entity access to records, accounts, documents, information, facilities, and staff. See DHS Standard Terms and Conditions, v 3.0, ¶ XXVI (2013).

b. Statement. The following provides a contract clause regarding access to records:

"Access to Records. The following access to records requirements apply to this contract:

(1) The contractor agrees to provide the City of Concord, the FEMA or applicable Federal Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The contractor agrees to provide the FEMA or applicable Federal Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract."

3. **DHS Seal, Logo, and Flags**.

a. Standard. All non-Federal entities must place in their contracts a provision that a contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS City officials without specific FEMA or applicable Federal entity pre-approval. See DHS Standard Terms and Conditions, v3.0, ¶ XXV (2013).

b. Statement. The following provides a contract clause regarding DHS Seal, Logo, and Flags:

"The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS City officials without specific FEMA or applicable Federal entity pre- approval."

4. **Compliance with Federal Law, Regulations, and Executive Orders**.

a. Standard. All non-Federal entities must place into their contracts an acknowledgement that FEMA or applicable Federal financial assistance will be used to fund the contract along with the requirement that the contractor will comply with all applicable Federal law, regulations, executive orders, and FEMA or applicable Federal policies, procedures, and directives.

b. Statement. The following provides a contract clause regarding Compliance with Federal Law, Regulations and Executive Orders:

"This is an acknowledgement that Federal financial assistance will be used to fund the contract only. The contractor will comply will all applicable Federal law, regulations, executive orders, FEMA or applicable Federal policies, procedures, and directives."

5. **No Obligation by Federal Government**.

   a. Standard. The non-Federal entity must include a provision in its contract that states that the Federal Government is not a party to the contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

   b. Statement. The following provides a contract clause regarding no obligation by the Federal Government:

      "The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract."

6. **Program Fraud and False or Fraudulent Statements or Related Acts**.

   a. Standard. The non-Federal entity must include a provision in its contract that the contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to its actions pertaining to the contract.

   b. Statement. The following provides a contract clause regarding Fraud and False or Fraudulent Related Acts:

      "The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract."

7. **FEMA Contract requirement regarding Prohibition on Contracting for Covered Telecommunications Equipment or Services – 2 CFR § 200.216 (FEMA Interim Policy #405-143-1 effective August 13, 2020)**.

   FEMA recipients and subrecipients and their contractors and subcontractors are required per 2 C.F.R. Part 200, Appendix II ¶ K to include a contract provision in all FEMA-funded contracts and subcontracts, including any purchase orders. To satisfy this requirement, the contract provision found in Number 11 above is incorporated by reference by the County of Hidalgo in all new, extended, or renewed contracts and subcontracts. Applicable County contractors and subcontractors shall also comply with the applicable law and requirements. (*See* Number 11 above).

8. **FEMA Contract requirement regarding Domestic Preferences for Procurements**

   For purchases in support of FEMA declarations and awards issued on or after November 12, 2020, all FEMA recipients and subrecipients are required per 2 C.F.R. Part 200, Appendix II ¶ L to include in all contracts and purchase orders for work or products the contract provision included in number 12 above encouraging domestic preference for procurements.

_____

Contractor agrees to comply with all federal, state and local laws, rules, regulations and ordinances, as applicable. It is further acknowledged that the Contractor read and understands all provisions, laws, acts, regulations, etc. as specifically noted above and certifies compliance with the same.

Vendor's Name/Company Name: _____

Printed Name and Title of Authorized Representative: _____

Signature of Authorized Representative: _____

Date: _____

APPENDIX I

FHWA 1273

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor 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 contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal 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;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. 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 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 Federal 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.

2. 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 31 U.S.C. 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 such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

APPENDIX J

PROPOSER'S AFFIDAVIT

EXHIBIT J
PROPOSER'S AFFIDAVIT

PROPOSER'S AFFIDAVIT OF NON-COLLUSION, NON-CONFLICT OF INTEREST, 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 another 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 another reward will be hereinafter paid.

(2) Affiant further states they have neither recommended nor 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 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____

APPENDIX K

Draft Agreement

THE STATE OF TEXAS §
§
COUNTY OF HIDALGO §

CONSTRUCTION CONTRACT
C-22-0094-00-00

This Agreement entered into this XX day of Month, 2022, by and between the County of Hidalgo (hereinafter called the "OWNER," and, _____ (a corporation), (a partnership), (an individual) of _____, State of Texas, hereinafter called "CONTRACTOR". The County's procurement packet and Contractor's response are incorporated herein for all purposes.

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:

Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project

Hereinafter called the project, for the sum of _____ Dollars and _____ Cents 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 General Conditions and Special Conditions printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by Engineering, entitled the 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 TBD consecutive calendar days thereafter. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of $500.00 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.

DRAFT

IN WITNESS WHEREOF, the parties to these present have executed this contract in the year and day first written above.

APPROVED BY COMMISIONERS COURT ON _____, 2_____.

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 _____,

2_____, by _____Of and on behalf of _____
(Title) (A corporation)

_____
Notary Public-Signature

ATTEST:

_____
Arturo Guajardo, Jr., County Clerk

COUNTY OF HIDALGO:

_____
Richard F. Cortez, County Judge

APPROVED AS TO FORM:
Office of the Criminal District Attorney,
Ricardo Rodriguez, Jr.
By: _____
ADA
Assistant District Attorney

DRAFT

APPENDIX L

Deficiencies and Deviations Form

(*This form must be signed*)

1. DEVIATION(S) – Any deviations to the attached specifications shall be listed below, or on a separate sheet of paper, and attached to the bid response form identifying the section number, item number and a clearly defined explanation for the deviations.

2. It is the offeror's responsibility to submit a proposal that meets all mandatory specifications stated within. Because of the variations in manufacturer's construction, the offeror must compare their product bid with the required listed minimum specifications and identify any deviations.

3. Failure to properly identify deviations may render the offeror's proposal non-responsive and not capable of consideration for award.

4. Offeror should note that a descriptive brochure of the model bid may not be sufficient or acceptable as proper identification of deviations from the written specifications.

NO - Deviations:_____ YES - Deviations:_____

List any deviations your company is submitting below: (Use a separate page, if necessary)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Company Name

_____

Print Name of Authorized Company Official

_____

Signature of Authorized Company Official

APPENDIX O

Construction Identification Sign

Appendix "O"
CONSTRUCTION IDENTIFICATION SIGN:

CONTRACTOR WILL CONTACT PRECINCT FOR INSTRUCTIONS ON SIGN LETTERING AND LOGO

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.

SAMPLE

Precinct Logo

Your Tax Dollars at Work
Hidalgo County Pct. 2

Eduardo “Eddie” Cantu, Commissioner

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL INSTALLATION IN PRECINCT 2

Hidalgo County Commissioner’s Court

Richard Cortez	-	County Judge
David Fuentes	-	Commissioner Pct. #1
Eduardo “Eddie” Cantu	-	Commissioner Pct. #2
Everardo “Ever” Villarreal	-	Commissioner Pct. #3
Ellie Torres	-	Commissioner Pct. #4

Project Contractor: _____ Project Engineer: _____

SAMPLE

APPENDIX Q

Standard General Conditions of the Construction Contract

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

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National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314

American Consulting Engineers Council
1015 15th Street N.W., Washington, DC 20005

American Society of Civil Engineers
345 East 47th Street, New York, NY 10017

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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.

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.

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

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.

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, performance 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

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.

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 may 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:

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);

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:

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

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,

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 performance 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 performance 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

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.

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 performance 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, 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.

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 performance 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;

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.

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.

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 fumishing 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. Other exemptions as per 34 TAC -3.287 and related laws may apply.

SC-11.01 Delete paragraph 11.01 in its entirety.

SC-11.02 Delete paragraph 11.02 in its entirety.

SC-12.01B.2 & 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 Article 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 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.

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:

APPENDIX R

Prevailing Wage Rates Certification

Prevailing Wage Rates
Certification Statement

Date _____

Project Name _____

Contractor _____

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

APPENDIX S

Project Specifications

Project: Las Milpas Road Drainage, Bridge, and Traffic Signal Project

COUNTY OF HIDALGO

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

STANDARD SPECIFICATIONS: **ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION November 1, 2014. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.**

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED BELOW:

STANDARD SPECIFICATIONS:

ITEM 132 EMBANKMENT (100)(160)(204)(210)(216)(260)(400)F
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (110)(132)(401)(402)(403)(416)(420)(421)(423)
ITEM 402 TRENCH EXCAVATION PROTECTION
ITEM 409 PRESTRESSED CONCRETE PILING (404)(405)(420)(421)(424)(425)(440)
ITEM 416 DRILLED SHAFT FOUNDATIONS (405)(420)(421)(423)(440)(448)
ITEM 420 CONCRETE SUBSTRUCTURES (400)(404)(421)(422)(426)(427)(440)(441)(448)
ITEM 422 CONCRETE SUPERSTRUCTURES (420)(421)(424)(438)(440)(448)(454)(780)
ITEM 425 PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS (409)(420)(421)(424)(426)(427)(434)(440)(442)(445)(448)
ITEM 432 RIPRAP (247)(420)(421)(431)(440)
ITEM 450 RAILING (420)(421)(422)(424)(440)(441)(442)(445)(446)(448)(540)
ITEM 454 BRIDGE EXPANSION JOINTS (429)(442)(785)
ITEM 462 CONCRETE BOX CULVERTS AND DRAINS (400)(402)(403)(420)(421)(422)(424)(440)(464)(476)
ITEM 464 REINFORCED CONCRETE PIPE (400)(402)(403)(467)(476)
ITEM 465 JUNCTION BOXES, MANHOLES, AND INLETS (400)(420)(421)(424)(440)(471)
ITEM 466 HEADWALLS AND WINGWALLS (400)(420)(421)(432)(440)(464)
ITEM 467 SAFETY END TREATMENT (400)(420)(421)(432)(440)(442)(445)(460)(464)
ITEM 479 ADJUSTING MANHOLES AND INLETS (400)(421)(465)(471)
ITEM 496 REMOVING STRUCTURES
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 506 TEMPORARY EROSION, SEDIMENTATION AND ENVIRONMENTAL CONTROLS (161)(432)(556)
ITEM 618 CONDUIT (400)(476)
ITEM 620 ELECTRICAL CONDUCTORS (610)(628)
ITEM 621 TRAY CABLE (620)
ITEM 624 GROUND BOXES (420)(421)(432)(440)(618)(620)
ITEM 625 ZINC-COATED STEEL WIRE STRAND
ITEM 628 ELECTRICAL SERVICES (441)(445)(449)(618)(620)(627)(656)
ITEM 680 HIGHWAY TRAFFIC SIGNALS (416)(610)(618)(624)(625)(627)(628)(636)(656)(682)(684)(686)(688)
ITEM 682 VEHICLE AND PEDESTRIAN SIGNAL HEADS

ITEM 684 TRAFFIC SIGNAL CABLES
ITME 686 TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL) (416)(421)(441)(442)(445)(449)

SPECIAL PROVISIONS:

SPECIAL PROVISIONS WILL GOVERN AND TAKE PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED HEREON WHEREVER IN CONFLICT THEREWITH.

SPECIAL PROVISION TO ITEM 132 (132-002)
SPECIAL PROVISION TO ITEM 400 (400-001)
SPECIAL PROVISION TO ITEM 462 (462-002)
SPECIAL PROVISION TO ITEM 464 (464-001)
SPECIAL PROVISION TO ITEM 465 (465-001)
SPECIAL PROVISION TO ITEM 502 (502-008)
SPECIAL PROVISION TO ITEM 506 (506-002)
SPECIAL PROVISION TO ITEM 680 (680-006)

SPECIAL SPECIFICATIONS:

ITEM 1007 IRRIGATION WELLS, GATES, AND VALVES
ITEM 1008 PRESSURE IRRIGATION PVC PIPE
ITEM 6306 VIDEO IMAGING VEHICLE DETECTION SYSTEM
ITEM 6061 GLOBAL POSITIONING SYSTEM (GPS) COMMUNICATION UNIT
ITEM 7049 WATER MAINS

GENERAL:

THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE- LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

APPENDIX T

Project Plans/Drawings

LAS MILPAS ROAD

COUNTY HIDALGO PROJ. NO.
HWY. NO. LAS MILPAS LETTING DATE
DATE ACCEPTED

INDEX DATA
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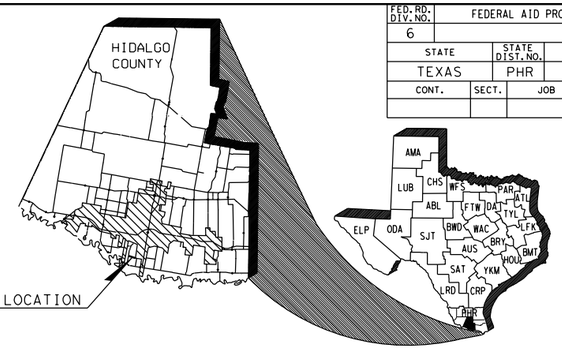
HIDALGO COUNTY
PRECINCT NO. 2

PLANS OF PROPOSED
ROADWAY IMPROVEMENTS

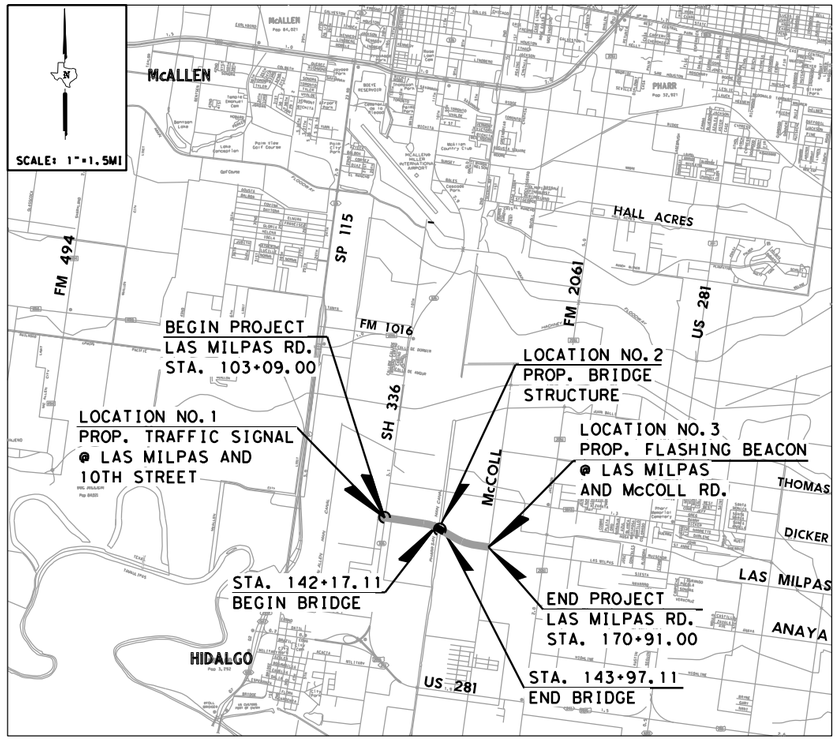
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6			1
STATE	STATE DIST. NO.	COUNTY	
TEXAS	PHR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
			LAS MILPAS



LAS MILPAS ROAD

LOCATION NO. 1: PROP. SIGNAL AT LAS MILPAS AND 10TH ST. INTERSECTION
LOCATION NO. 2: PROP. BRIDGE LENGTH = 180 FT. = 0.034 MI
LOCATION NO. 3: PROP. FLASHING BEACON AT LAS MILPAS AND McCOLL RD. INTERSECTION
THROUGH-OUT: PROP. 48" STORM SEWER SYSTEM (3277 LF), PROP. 1-12'X8' BOX CULVERT, 1-7'x7' BOX CULVERT, SAFETY END TREATMENTS, GRATED INLETS AND JUNCTION BOXES, STORM SEWER, AND IRRIGATION CROSSINGS

CONSTRUCT PROPOSED TRAFFIC SIGNAL, FLASHING BEACON, BRIDGE STRUCTURE, STORM SEWER PIPE, BOX CULVERTS, GRATE INLETS, SAFETY END TREATMENTS, JUNCTION BOXES, AND IRRIGATION CROSSINGS.



SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT.

LAS MILPAS ROAD PROJECT DATA

DESIGN SPEED:
30 mph

FUNCTIONAL CLASS:
N/A

EXCEPTIONS:

BRIDGE
STA. 142+17.11 TO
STA. 143+97.11

RAILROAD CROSSINGS:
NONE

ADT
N/A

EQUATIONS:
NONE

TDLR INSPECTION IS NOT REQUIRED

B2Z ENGINEERING
TBPE FIRM NO. F-11187

APPROVED FOR CONSTRUCTION / DATE : 12/27/2021

NAME, TITLE P.E.

HIDALGO COUNTY PRECINCT 2
COMMISSIONER EDUARDO "EDDIE" CANTU

APPROVED FOR CONSTRUCTION / DATE :

NAME, TITLE

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(S) DENOTES STATE STANDARDS
(D) DENOTES DISTRICT STANDARDS

STANDARD SHEETS 10-24, 125-138, 71-98, & 141-143
HAVE BEEN SELECTED BY ME OR UNDER
MY RESPONSIBLE SUPERVISION AS BEING
APPLICABLE TO THIS PROJECT.

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

STANDARD SHEETS 35-60
HAVE BEEN SELECTED BY ME OR UNDER
MY RESPONSIBLE SUPERVISION AS BEING
APPLICABLE TO THIS PROJECT.

STATE OF TEXAS
ALBERTO J. ALDANA
79962
REGISTERED PROFESSIONAL ENGINEER
07/06/2021
Albert J. Aldana

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
INDEX OF SHEETS

SHEET 1 OF 1

FED.RD. DIV.NO.	STATE AID PROJECT NO.		FILE NO.			SHEET NO.
6						2
STATE	STATE DIST.NO.	COUNTY			JOB	HIGHWAY NO.
TX	PHR	HIDALGO				MILPAS

(HCDA-07-12-22

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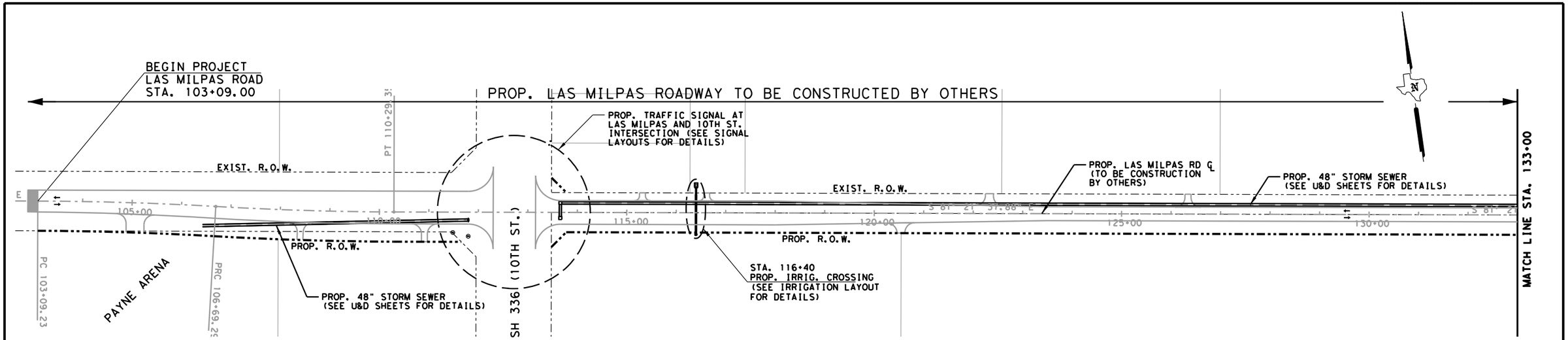
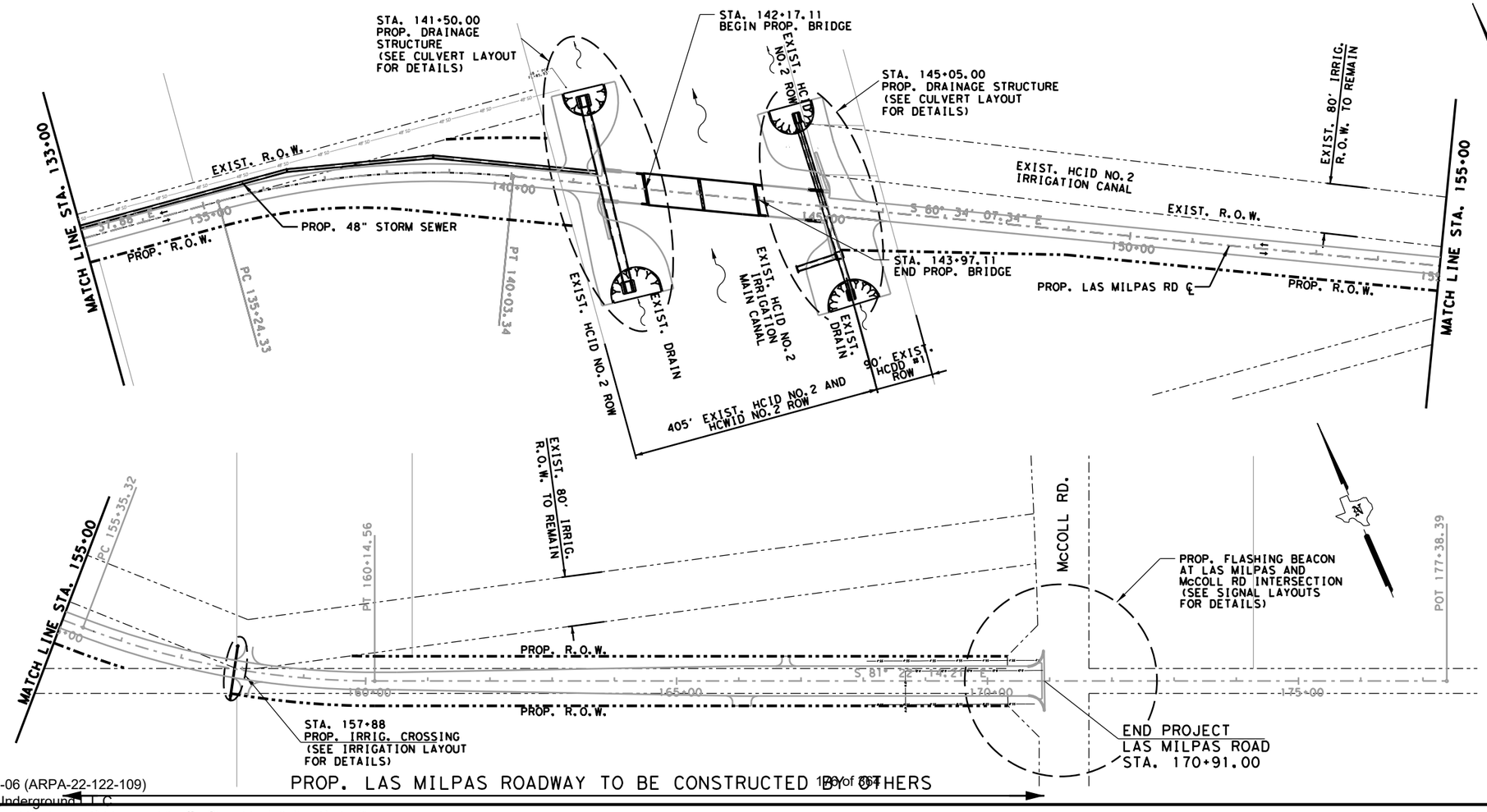
12/27/2021





STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD PROJECT LAYOUT

SCALE 1" = 200' SHEET 1 OF

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					3
DW:		STATE DIST. NO.	COUNTY	CONTROL SECTION	JOB NO.			HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-		MILPAS
TR:								
CK TR:								

(HCDA 07-42-22)

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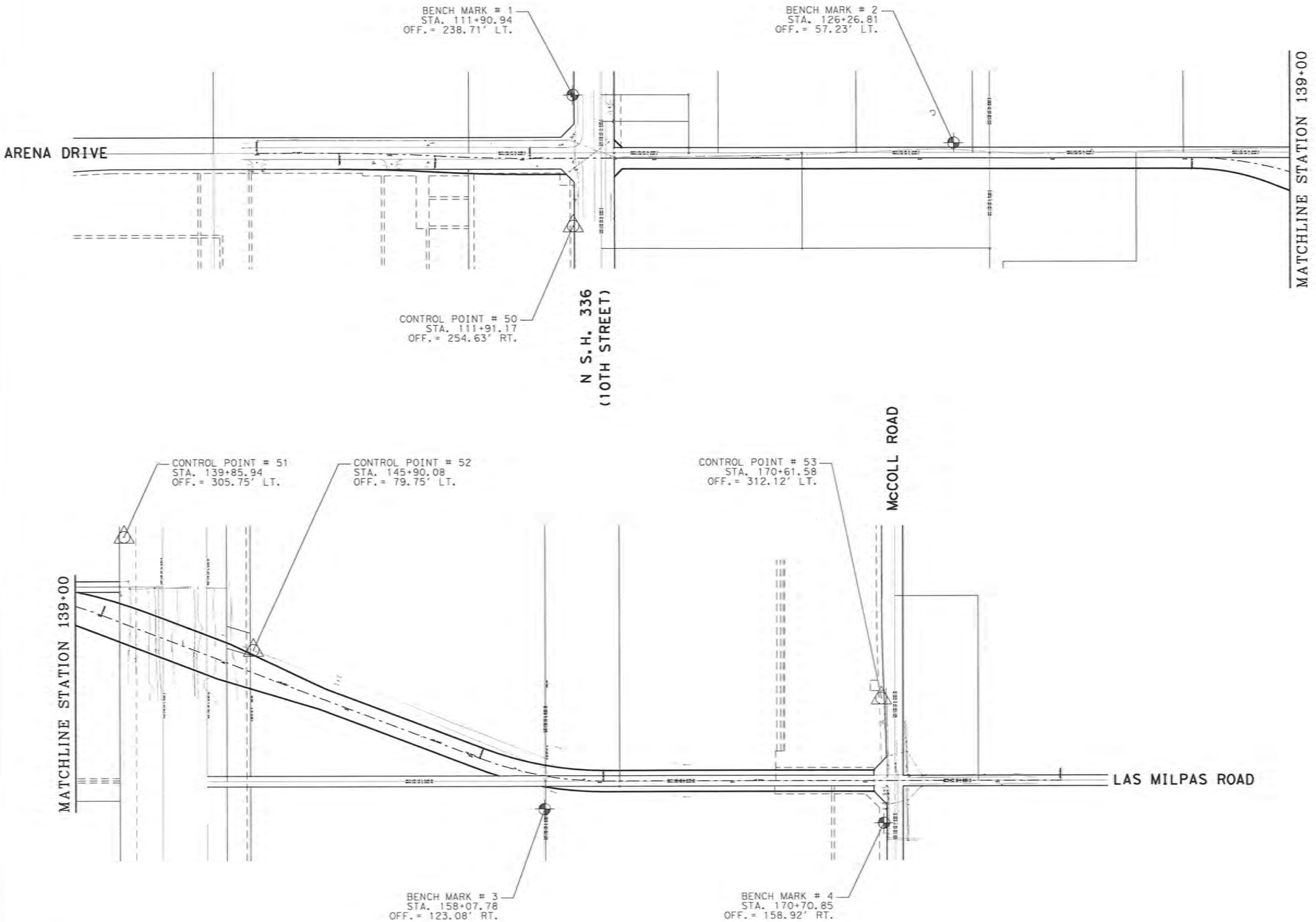
12/27/2021

SURVEY CONTROL INDEX SHEET
WA # 2 LAS MILPAS ROAD
LIMITS: N S.H. 336 (10TH STREET) TO McCOLL ROAD



NOTES:

1. COORDINATES AND DISTANCES ARE IN U.S. SURVEY FEET, DISPLAYED IN SURFACE VALUES USING A GRID TO SURFACE ADJUSTMENT FACTOR OF 1.00004.

2. ALL HORIZONTAL VALUES ARE NAD 83(2011) STATE PLANE COORDINATES, TEXAS SOUTH ZONE ESTABLISHED BY RTK METHODS.

3. VERTICAL VALUES ESTABLISHED BY DIGITAL LEVELS AND REFERENCED TO NAVD88.

NOT TO SCALE

THE SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PLAN SPECIFICATION AND ESTIMATE.

STATE OF TEXAS
REGISTERED
JUAN E. GALVAN
4011
PROFESSIONAL
LAND SURVEYOR

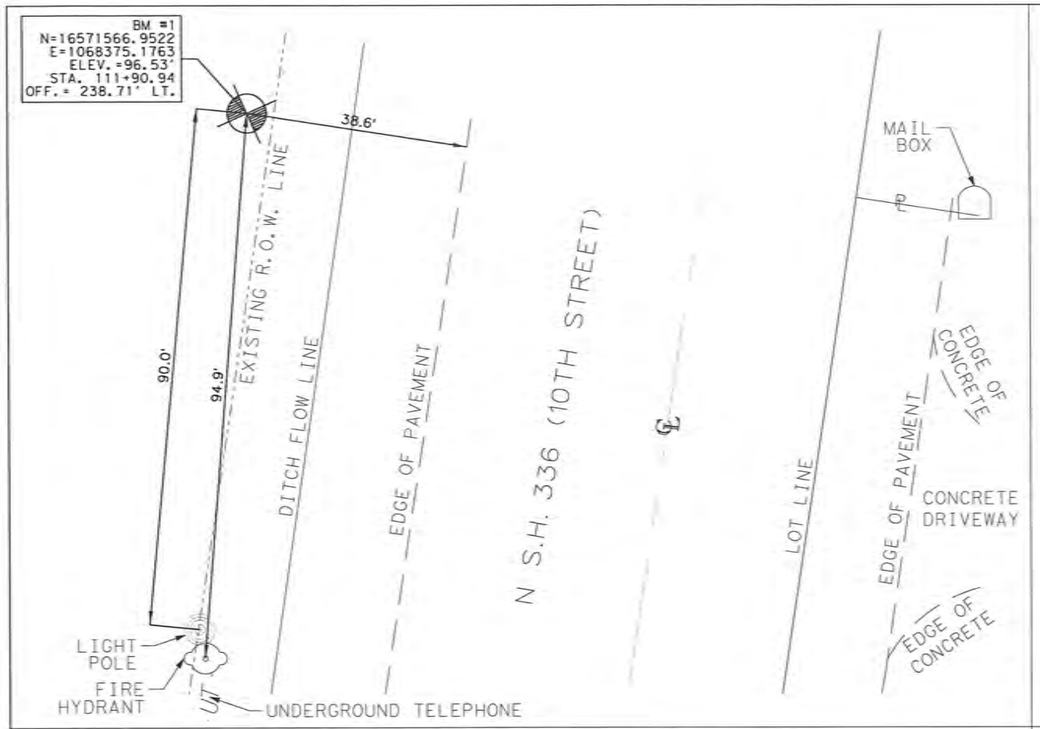
JUAN E. GALVAN, R.P.L.S. #4011
04/29/2020

THE COUNTY OF HIDALGO TEXAS

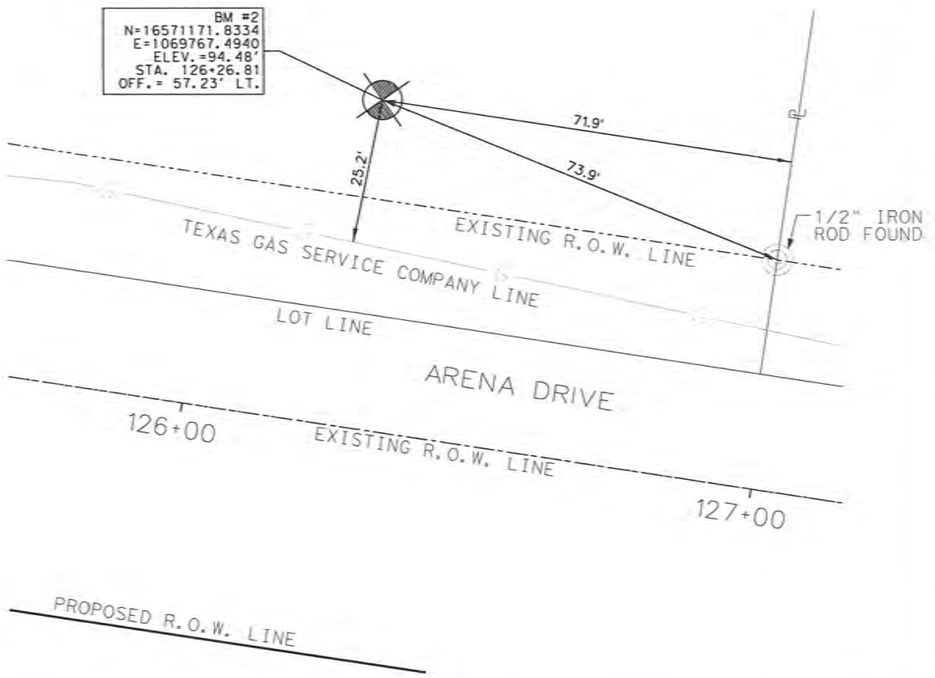
B2Z ENGINEERING

ROW SURVEYING SERVICES, LLC.

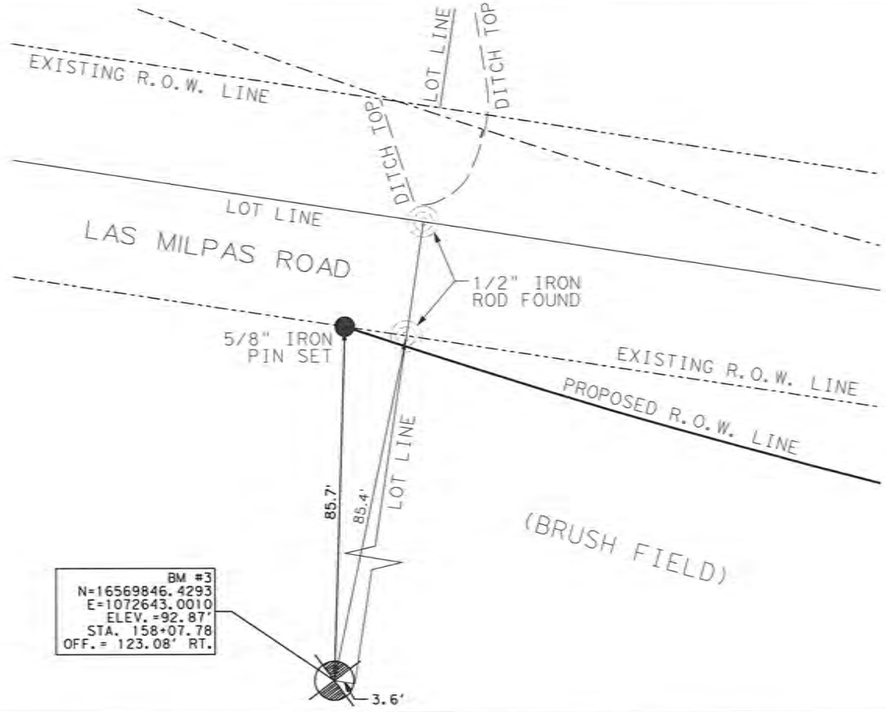
WA # 2 LAS MILPAS ROAD
HORIZONTAL & VERTICAL CONTROL
(HCDA 07-12-22 SHEET NO. 4A



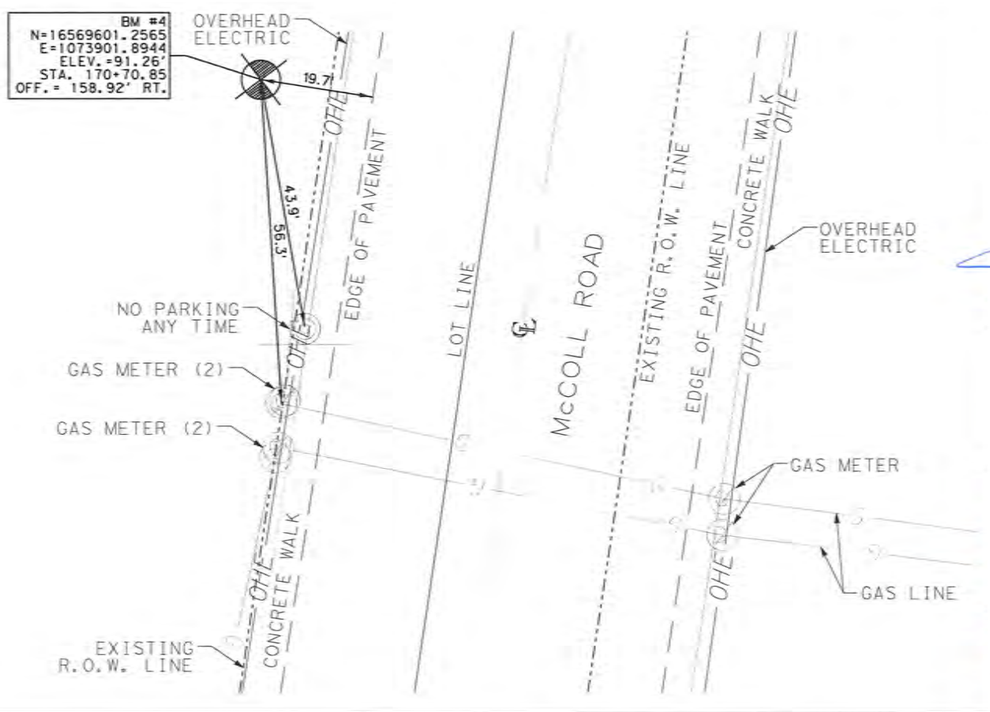
DESCRIPTION: 5/8" IRON ROD SET IN CONCRETE, LOCATED AT THE NORTHWEST QUADRANT OF THE ARENA DRIVE AND N S.H. 336 (10TH STREET) INTERSECTION.



DESCRIPTION: 5/8" IRON ROD SET IN CONCRETE, LOCATED APPROXIMATELY 1366 FT. SOUTHEAST OF THE ARENA DRIVE AND N S.H. 336 (10TH STREET) INTERSECTION.



DESCRIPTION: 5/8" IRON ROD SET IN CONCRETE, LOCATED APPROXIMATELY 1328 FT. SOUTHEAST OF THE LAS MILPAS ROAD AND McCOLL ROAD INTERSECTION.



DESCRIPTION: 5/8" IRON ROD SET IN CONCRETE, LOCATED AT THE SOUTHWEST QUADRANT OF LAS MILPAS ROAD AND McCOLL ROAD INTERSECTION.

NOTES:

1. COORDINATES AND DISTANCES ARE IN U.S. SURVEY FEET, DISPLAYED IN SURFACE VALUES USING A GRID TO SURFACE ADJUSTMENT FACTOR OF 1.00004.

2. ALL HORIZONTAL VALUES ARE NAD 83(2011) STATE PLANE COORDINATES, TEXAS SOUTH ZONE ESTABLISHED BY RTK METHODS.

3. VERTICAL VALUES ESTABLISHED BY DIGITAL LEVELS AND REFERENCED TO NAVD88.

NOT TO SCALE

THE SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PLAN SPECIFICATION AND ESTIMATE

STATE OF TEXAS REGISTERED JUAN E. GALVAN 4011 PROFESSIONAL LAND SURVEYOR

JUAN E. GALVAN, R.P.L.S. #4011

04/29/2020

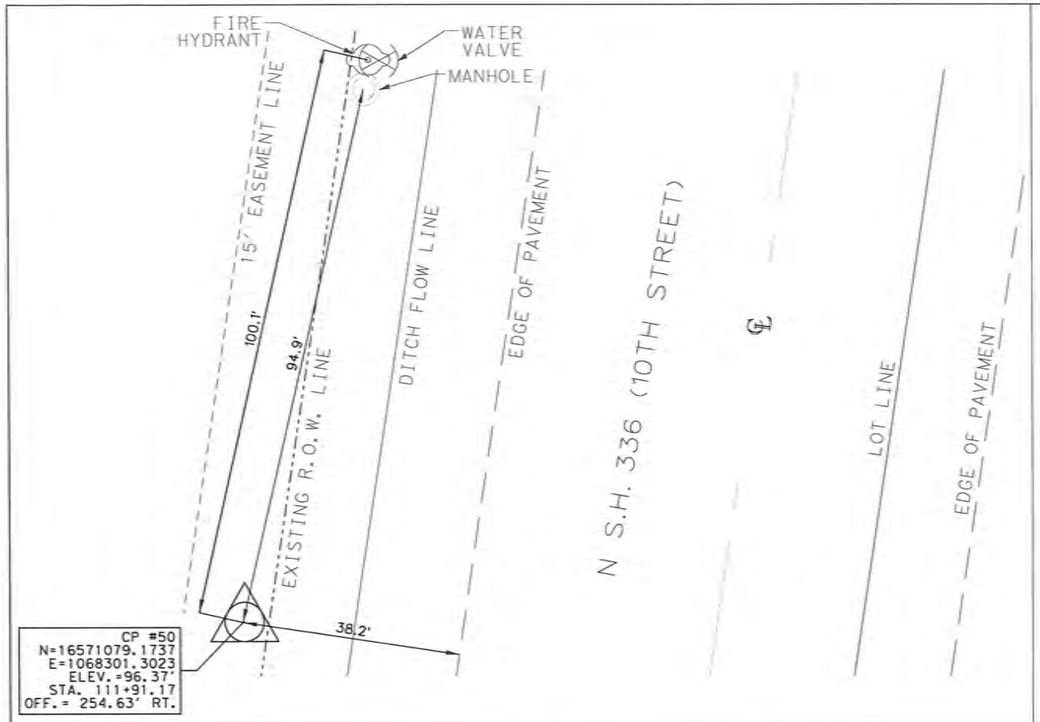
THE COUNTY OF HIDALGO TEXAS

B2Z ENGINEERING

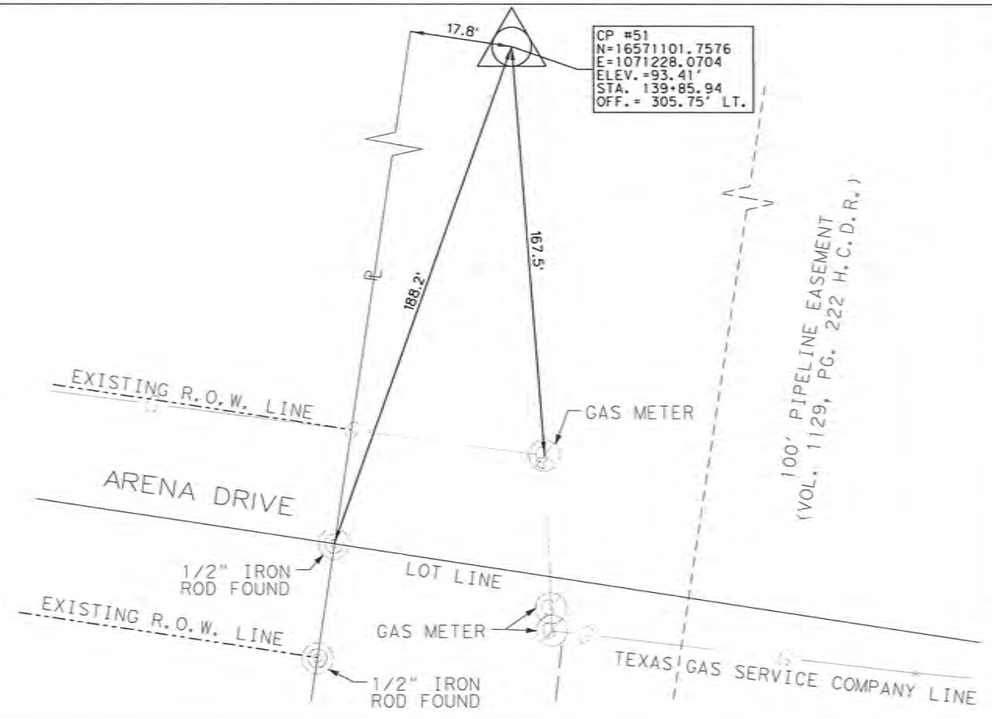
ROW SURVEYING SERVICES, LLC.

WA # 2 LAS MILPAS ROAD
HORIZONTAL & VERTICAL CONTROL
(HCDA 07-12-22

SHEET NO. 4B



DESCRIPTION: 5/8" IRON ROD SET IN THE GROUND, LOCATED AT THE SOUTHWEST QUADRANT OF THE ARENA DRIVE AND N S.H. 336 (10TH STREET) INTERSECTION.



DESCRIPTION: 5/8" IRON ROD SET IN THE GROUND, LOCATED APPROXIMATELY 2816 FT. SOUTHEAST OF THE ARENA DRIVE AND N S.H. 336 (10TH STREET) INTERSECTION.

NOTES:

1. COORDINATES AND DISTANCES ARE IN U.S. SURVEY FEET. DISPLAYED IN SURFACE VALUES USING A GRID TO SURFACE ADJUSTMENT FACTOR OF 1.00004.

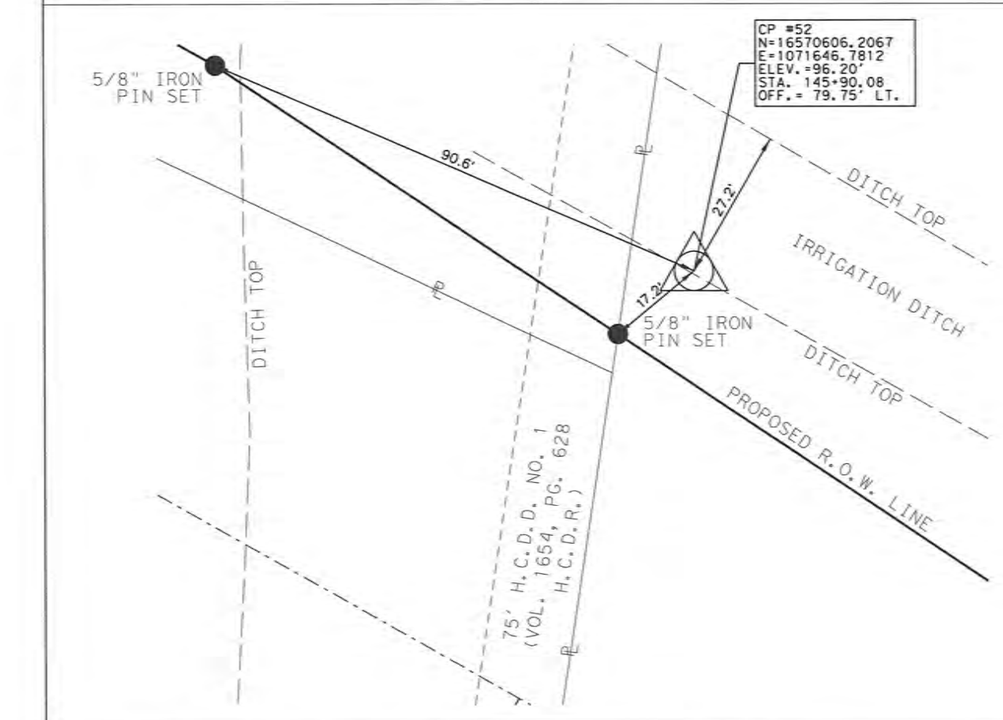
2. ALL HORIZONTAL VALUES ARE NAD 83(2011) STATE PLANE COORDINATES, TEXAS SOUTH ZONE ESTABLISHED BY RTK METHODS.

3. VERTICAL VALUES ESTABLISHED BY DIGITAL LEVELS AND REFERENCED TO NAVD88.

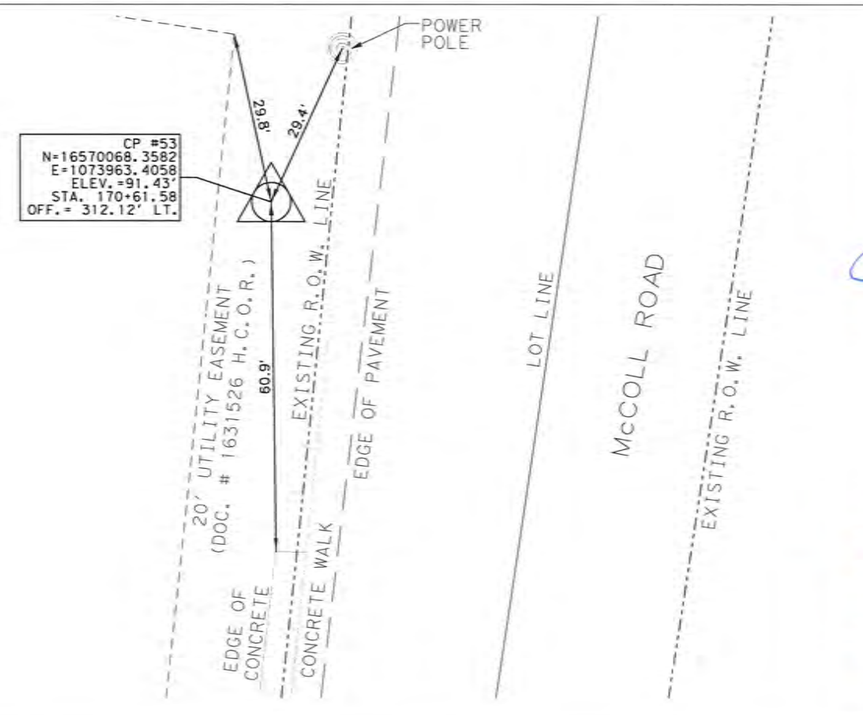
N

NOT TO SCALE

THE SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PLAN SPECIFICATION AND ESTIMATE



DESCRIPTION: 5/8" IRON ROD SET IN THE GROUND, LOCATED APPROXIMATELY 2473 FT. SOUTHEAST OF LAS MILPAS ROAD AND McCOLL ROAD INTERSECTION.



DESCRIPTION: 5/8" IRON ROD SET IN THE GROUND, LOCATED AT THE NORTHWEST QUADRANT OF LAS MILPAS ROAD AND McCOLL ROAD INTERSECTION.

STATE OF TEXAS REGISTERED JUAN E. GALVAN 4011 PROFESSIONAL LAND SURVEYOR

JUAN E. GALVAN, R.P.L.S. #4011
04/29/2020

THE COUNTY OF HIDALGO TEXAS

B2Z ENGINEERING

ROW SURVEYING SERVICES, LLC.

WA # 2 LAS MILPAS ROAD
HORIZONTAL & VERTICAL CONTROL
(HCDA 07-12-22

SHEET NO. 4C

SUMMARY OF PROP. DRAINAGE AND IRRIGATION STRUCTURES

SHEET NO.	ITEM 132	ITEM 400		ITEM 402	ITEM 432	ITEM 462			ITEM 464				ITEM 465				ITEM 466		ITEM 467	ITEM 479	ITEM 496		ITEM 1007			ITEM 1008		ITEM 7049
	6006	6010	6011	6001	6001	6016	6018	6042	6002	6003	6005	6043	6009	6011	6130	6365	6212	6254	6363	6002	6003	6007	6007	6009	6012	6001	6003	6054
	EMBKMT (FINAL) (DENS CONT) (TY C) (CY)	STRUCT EXCAV (SPL) (CY)	SAND BACKFILL (CY)	TRENCH EXCAVATION PROTECTION (LF)	RIRRAP (CONC) (4") (CY)	CONC BOX CULV (7'X5') (LF)	CONC BOX CULV (7'X7') (LF)	CONC BOX CULV (12'X8') (LF)	RC PIPE (CL III) (15") (LF)	RC PIPE (CL III) (18") (LF)	RC PIPE (CL III) (24") (LF)	RC PIPE (CL III) (48") (SPL) (LF)	JCTBOX (COMPL) (PJB) (5'X5') (EA)	JCTBOX (COMPL) (PJB) (6'X6') (EA)	INLET (COMPL) (PSL)(FG) (3'X5'-3'X5') (EA)	JCTBOX (COMPL) (CIP) (10'X10') (EA)	WINGWALL (SW-0) (HW=9') (EA)	WINGWALL (SW-0) (HW=10') (EA)	SET TYII (18")(RCP) (6:1)(P) (EA)	ADJUSTING INLETS (EA)	REMOV STRUCT. (MANHOLE) (EA)	REMOV STRUCT. (PIPE) (LF)	IRRIGATION VALVE (12") (EA)	IRRIGATION WELL (36") (EA)	IRRIGATION GATE (12") (EA)	PRSSR IRRIG PVC PIPE (18") (LF)	PRSSR IRRIG PVC PIPE (12") (LF)	SPLIT STEEL CASING (24") (LF)
	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.	EST.
LAS MILPAS																												
U&D SHEETS																												
1 OF 14			193	157								157								1		157						
2 OF 14			467	380								380										380						
3 OF 14			570	464								464		2								431						
4 OF 14			614	500								500										500						
5 OF 14			614	500								500										500						
6 OF 14			614	500								500									1	500						
7 OF 14			614	500								500										500						
8 OF 14			420	554						214		340							2			280						
9 OF 14				372						368									2									
14 OF 14			95	299					299				1		2													280
CULVERT 141+50	8321	181	618	288	97			288										2										
CULVERT 145+05	8137	111	442	271	95	67	271									1	2											
IRRIGATION 116+40		13	36	104	4						72											25	1			104		
IRRIGATION 157+88		9	23	76							70											91		1	2		76	
GRAND TOTAL	16458	314	5320	4965	196	67	271	288	299	582	142	3341	1	2	2	1	2	2	4	1	1	3364	1	1	2	104	76	280

ADDITIVE ALTERNATIVE #1

SUMMARY OF IRRIGATION BRIDGE STRUCTURE

BRIDGE STATION	400 6005 CEMENT STABILIZED BACKFILL (CY) EST.	409 6001 PRESTR CONC PILE (16" SQ) (LF) EST.	409 6004 PRESTR CONC PILE (24" SQ) (LF) EST.	420 6013 CL C CONC (ABUT) (CY) EST.	420 6025 CL C CONC (BENT) (CY) EST.	422 6001 REINF CONC SLAB (SF) EST.	425 6037 PRESTR CONC GIRDER (TX40) (LF) EST.	450 6023 RAIL (TY SSTR) (LF) EST.	454 6018 SEALED EXPANSION JOINT (4") (SEJ - M) (LF) EST.
LAS MILPAS									
STA 142+17.11 TO STA 143+97.11	245	1240	420	57.7	22.9	9000	1074	723	106
GRAND TOTAL	245	1240	420	57.7	22.9	9000	1074	723	106

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPS ROAD
SUMMARY SHEET OF
ESTIMATED QUANTITIES

SHEET 1 OF 2

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					5A
DW:		STATE DIST. NO	COUNTY	CONTROL	SECTION	SUB.	JOB NO.	HIGHWAY NO.
CK DW:		PHR	HIDALGO					MILPAS
TR:								
CK TR:								

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C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HCDA 07-22-22)

ADDITIVE ALTERNATIVE #2

ITEM-CODE			DESCRIPTION	UNIT	
ITEM NO.	DESC CODE	SP NO.			EST.
416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	26.2
416	6034		DRILL SHAFT (TRF SIG POLE) (48 IN)	LF	87.6
500	6001		MOBILIZATION	LS	1.0
618	6033		CONDT (PVC) (SCHD 40) (4")	LF	334.0
618	6034		CONDT (PVC) (SCHD 40) (4") (BORE)	LF	222.0
620	6007		ELEC CONDR (NO. 8) BARE	LF	606.0
620	6009		ELEC CONDR (NO. 6) BARE	LF	13.0
620	6010		ELEC CONDR (NO. 6) INSULATED	LF	38.0
621	6005		TRAY CABLE (4 CONDR) (12 AWG)	LF	945.0
624	6002		GROUND BOX TY A (122311) W/APRON	EA	6.0
624	6010		GROUND BOX TY D (162922) W/APRON	EA	1.0
625	6003		ZINC-COAT STL WIRE STRAND (3/8")	LF	155.0
628	6301		ELC SRV TY T 120/240 000 (NS) GS (L) TS (O)	EA	2.0
680	6001		INSTALL HWY TRF SIG (FLASH BEACON)	EA	1.0
680	6002		INSTALL HWY TRF SIG (ISOLATED)	EA	1.0
*			SIGNAL CONTROLLER CONC. FOUNDATION	CY	1.0
*			CONTROLLER, FULL TRAFFIC ACTUATED	EA	1.0
*			PHOTOELECTRIC CELL	EA	6.0
*			ROADWAY LIGHT ON POLE (130 WATT) (LED)	EA	6.0
*			GROUND ROD 5/8" X 10'	EA	8.0
*			SIGN, "LEFT TURN YIELD ON FLASHING YELLOW ARROW" R10-17T (30"x30")	EA	4.0
*			SIGN, STREET NAME SIGN	EA	4.0
680	6004		REMOVING TRAFFIC SIGNALS (FLASHING BEACON)	EA	1.0
682	6001		VEH SIG SEC (12")LED(GRN)	EA	8.0
682	6002		VEH SIG SEC (12 IN) LED (GRN ARW)	EA	4.0
682	6003		VEH SIG SEC (12 IN) LED (YEL)	EA	12.0
682	6004		VEH SIG SEC (12 IN) LED (YEL ARW)	EA	8.0
682	6005		VEH SIG SEC (12 IN) LED (RED)	EA	12.0
682	6006		VEH SIG SEC (12 IN) LED (RED ARW)	EA	4.0
682	6023		BACK PLATE (12 IN) (3 SEC)	EA	8.0
682	6024		BACK PLATE (12 IN) (4 SEC)	EA	4.0
684	6010		TRF SIG CBL (TY A) (12 AWG) (5 CONDR)	LF	1037.0
684	6012		TRF SIG CBL (TY A) (12 AWG) (7 CONDR)	LF	987.0
686	6007		INS TRF SIG PL AM (S)STR(TY B)	EA	2.0
686	6059		INS TRF SIG PL AM (S) 1 ARM (55') LUM	EA	4.0
6306	6001		VIVDS PROSR SYS	EA	1.0
6306	6003		VIVDS CAM ASSY VAR LNS	EA	4.0
6306	6007		VIVDS CABLING	LF	927.0
6061	6001		GPS COMMUNICATIONS UNIT	EA	1.0

SUMMARY OF SEDIMENT CONTROL DEVICES (ITEM 506)

SW3P LAYOUT SHEET	ITEM 506					
	6004	6011	6021	6024	6041	6043
	ROCK FILTER DAMS (INSTALL) (TY 4) (LF)	ROCK FILTER DAMS (REMOVE) (LF)	CONSTRUCTION EXIT (INSTALL) (TY 2) (SY)	CONSTRUCTION EXIT (REMOVE) (SY)	BIODEGRADABLE EROSION CNTRL LOGS (12" DIA) INSTALL (LF)	BIODEGRADABLE EROSION CNTRL LOGS REMOVE (LF)
	EST.	EST.	EST.	EST.	EST.	EST.
LAS MILPAS RD						
SHEET 1 OF 1	200	200	234	234	360	360
GRAND TOTAL	200	200	234	234	360	360

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPS ROAD
SUMMARY SHEET OF
ESTIMATED QUANTITIES

SHEET 2 OF 2

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					5B
DW:		STATE DIST. NO	COUNTY	CONTROL	SECTION	SUB.	JOB NO.	HIGHWAY NO.
CK DW:								
TR:		PHR	HIDALGO					MILPAS
CK TR:								

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GENERAL NOTES:

USE THE TEXAS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES" (NOVEMBER 2014) FOR ITEM SPECIFICATIONS INFORMATION AND REQUIREMENTS WHEN NOT SPECIFIED ON THE PROJECT PLAN SET. THE SPECIFICATION BOOK SHALL READ "HIDALGO COUNTY PRECINCT NO. 2" IN LIEU OF "THE TEXAS DEPARTMENT OF TRANSPORTATION" AND/OR "THE DEPARTMENT".

****

GENERAL REQUIREMENTS

FOR ALL PITS OR QUARRIES, COMPLY WITH THE "TEXAS AGGREGATE QUARRY AND PIT SAFETY ACT."

CONTACT THE 1-800 CALL SERVICES FOR LOCATIONS OF UTILITIES BEFORE BEGINNING ANY SCARIFYING OR EXCAVATING OPERATIONS. VERIFY UTILITY LOCATIONS, DEPTH, AND EXERCISE EXTREME CAUTION WHEN EXCAVATING AND/OR SCARIFYING AROUND THESE UTILITIES.

ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF HIDALGO COUNTY.

LOCATIONS OF UNDERGROUND FACILITIES ARE FROM BEST KNOWN INFORMATION AVAILABLE. NEITHER THE OWNER NOR ENGINEER, WARRANT THE ACCURACY OF THE INFORMATION PROVIDED. ANY DEVIATIONS SHALL BE CALLED TO THE PROJECT MANAGER AND ENGINEER'S ATTENTION IMMEDIATELY.

AS DIRECTED BY THE COUNTY, THE CONTRACTOR SHALL INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE TXMUTCD LATEST EDITION, AND AS APPROVED BY THE ENGINEER.

ALL EXCESS MATERIALS AND DEBRIS RESULTING FROM THE PROPOSED IMPROVEMENTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THESE MATERIALS AND DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED AT THE COST OF THE CONTRACTOR.

ANY DAMAGES TO EXISTING FENCES, CURB AND GUTTERS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

NO OPEN EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. ALL EXCAVATIONS WHICH CANNOT BE BACKFILLED OVERNIGHT SHALL BE PROTECTED AT ALL TIMES WITH LONGITUDINAL CHANNELIZING DEVICES THAT CONFORM TO THE TXMUTCD REQUIREMENTS, OR AS APPROVED BY THE COUNTY.

THE PREPERATION 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.

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 RESPONSIBILTY TO LOCATE, MAITAIN, AND PROTECT THE INTEGRITY OF THESE LINES. HAND EXCAVATION MAY BE REQUIRED. THIS OPERATION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY SURFACE IRREGULARITIES, AS DIRECTED BY THE COUNTY, CAUSED BY THE CONTRACTOR'S WORKING OPERATIONS.

DEWATERING MAY BE REQUIRED DURING THE DURATION OF THE PROJECT. SAID WATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT'S BID ITEMS.

THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF ALL ITEMS TO BE CONSTRUCTED. THESE CLEANUP AND RESTORE OPERATIONS SHALL NOT BE PAID DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO PERTINENT ITEMS.

THIS PROJECT SHALL CONSIST OF FURNISHING AND INSTALLING ALL MATERIAL AND EQUIPMENT NECESSARY FOR COMPLETING FULL ACTUATED TRAFFIC SIGNAL SYSTEMS. MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, NOT DEPRECIATED STOCK. ELECTRICAL MATERIAL AND FITTINGS COVERED BY THE PLANS AND SPECIFICATIONS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH NEMA STANDARDS. THESE TRAFFIC SIGNAL INSTALLATIONS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL SAFETY CODE AND NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION SPECIFICATIONS.

THE PROJECT WILL CONSIST OF FURNISHING AND INSTALLING TRAFFIC SIGNALS AT THE INTERSECTIONS OF 10TH STREET, AND MCCOLL RD IN HIDALGO COUNTY PRECINCT #2. THE CONTRACTOR SHALL FURNISH AND INSTALL NEW SIGNAL POLES, TRAFFIC SIGNAL CONTROLLERS, SIGNAL AND PEDESTRIAN HEADS, AND VIVDS DETECTION SYSTEM AS INDICATED IN THE PLANS.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
GENERAL NOTES

SHEET 1 OF 9

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.		SHEET NO.
CK DN:			TEXAS			6A
DW:		STATE DIST. NO	COUNTY	CONTROL	SECTION	JOB NO.	HIGHWAY NO.
CK DW:			HIDALGO				MILPAS
TR:							
CK TR:							

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THERE IS AN EXISTING FLASHING BEACON AT THE INTERSECTION OF 10TH STREET THAT MUST BE REMOVED.

UPON THE REQUEST OF THE ENGINEER, THE CONTRACTOR SHALL FURNISH TO THE ENGINEER A TYPED NARRATIVE REPORT, SIGNED AND DATED BY THE CONTRACTOR, OUTLINING THE MANNER OF PROSECUTION OF WORK THAT HE INTENDS TO FOLLOW IN THE SUBSEQUENT THIRTY-DAY PERIOD.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING THE APPROPRIATE ADJUSTMENTS DURING "TRAFFIC SIGNAL" CONSTRUCTION, WHICH MAY BE NEEDED BECAUSE OF CONFLICTS WITH UTILITIES. THE CONTRACTOR WILL COORDINATE WITH THE UTILITY COMPANIES TO VERIFY UTILITY LOCATIONS. THE CONTRACTOR SHALL OBTAIN THE COUNTY'S APPROVAL FOR ANY ADJUSTMENTS REQUIRED DUE TO UTILITY CONFLICTS.

IN THE EVENT UTILITY LINES NEEDING UNFORESEEN ADJUSTMENTS ARE ENCOUNTERED DURING THE SIGNAL CONSTRUCTION, THE CONTRACTOR SHALL EXECUTE THE WORK IN SUCH A MANNER AND SEQUENCE AS TO ALLOW ADJUSTMENT TO BE DONE BY OTHERS. THE CONTRACTOR SHALL CALL THE POWER COMPANY IF ANY OVERHEAD OR UNDERGROUND ELECTRICAL LINES NEED TO BE DE-ENERGIZED. COST ASSOCIATED WITH DE-ENERGIZING THE ELECTRICAL LINES AND/OR ANY OTHER PROTECTIVE MEASURES REQUIRED WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

THE CONTRACTOR SHALL PERFORM ALL ELECTRICAL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND TXDOT STANDARD SHEETS.

THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL SERVICE INSTALLATION WITH THE ELECTRICAL SERVICE PROVIDER REPRESENTATIVES ACCORDING TO THEIR RESPECTIVE AREA. COORDINATE WITH HIDALGO COUNTY PRECINCT #2 TO DETERMINE THE PUBLIC ENTITY THAT WILL BE RESPONSIBLE FOR ENERGY CONSUMPTION INCURRED BY THE "TRAFFIC SIGNAL" LOCATIONS AFTER THE ACCEPTANCE OF THE PROJECT.

THE LOCATION OF "TRAFFIC SIGNAL(S)" TRAFFIC SIGNAL POLES, SERVICES POLES, VIVDS, ANTENNAS, SIGNAL HEADS, CONTROLLER FOUNDATIONS, LUMINAIRES, CONDUCTORS, CABLES, CONDUIT, AND GROUND BOXES ARE DIAGRAMMATIC ONLY. UPON APPROVAL, LOCATIONS MAY BE CHANGED TO ACCOMMODATE FIELD CONDITIONS.

REMOVAL OF EXISTING FOUNDATIONS, MISCELLANEOUS CONCRETE, AND VARIOUS STRUCTURES IDENTIFIED ON THE PLANS OR ENCOUNTERED IN THE FIELD, ARE NOT PAID FOR SPECIFICALLY BUT ARE SUBSIDIARY TO THE VARIOUS BID ITEMS UNLESS OTHERWISE SHOWN IN THE PLANS.

MISCELLANEOUS SITE GRADING, EMBANKMENT, AND EXCAVATION IS NOT PAID FOR SEPARATELY AND IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH THE PED-12A STANDARD ALONG THE ACCESSIBLE ROUTE WHEN SIGNS ARE ADJUSTED.

UNLESS OTHERWISE SPECIFIED IN THE PLANS AND APPROVED BY THE ENGINEER, IRRIGATION HEADS AND FIXTURE RELOCATIONS IN CONFLICT WITH THE PROPOSED IMPROVEMENTS ARE NOT PAID FOR SEPARATELY BUT ARE SUBSIDIARY TO VARIOUS BID ITEMS.

SWEEP AND REMOVE ALL LITTER, CONSTRUCTION DEBRIS AND SURPLUS MATERIAL ON THE RIGHT-OF-WAY WITHIN THE PROJECT LIMITS TO KEEP THE JOBSITE NEAT AT ALL TIMES. KEEP ROADWAYS AND SIDEWALKS FREE OF SEDIMENT. CONSIDER SUBSIDIARY TO PERTINENT ITEMS.

ITEM 100: PREPARING RIGHT OF WAY

PREPARATION OF ROW WILL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION PHASING SHOWN ON THE TRAFFIC CONTROL PLANS. PERFORMANCE OF THIS ITEM WILL NOT BE ALLOWED OUTSIDE OF THE PROJECT'S CURRENT CONSTRUCTION PHASE WITHOUT PRIOR APPROVAL BY THE COUNTY.

PREP RIGHT OF WAY SHALL NOT BE PAID DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO PERTINENT ITEMS.

ITEM 132: EMBANKMENT

EMBANKMENT (DENS CONT) SHALL BE TYPE C WITH A MAX. PI OF 40. MATERIAL USED AS EMBANKMENT MATERIAL IN THE TOP TWO FEET BELOW THE BOTTOM OF FLEXIBLE BASE SHALL MEET THE FOLLOWING REQUIREMENTS BASED ON PRELIMINARY TESTS AND SUCH OTHER TESTS FOUND NECESSARY BY THE COUNTY.

1. THE MATERIAL SHALL BE SUCH AS TO PRODUCE A WELL-BONDED EMBANKMENT AND SHALL HAVE A MINIMUM PI OF 8 AND A MAXIMUM PI OF 30.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADVISE THE COUNTY OF THE LOCATION OF THE SOURCE SUFFICIENTLY IN ADVANCE TO AVOID DELAY.

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HIDALGO COUNTY PRECINCT 2
COMMISSIONER
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ITEM 400: EXCAVATION AND BACKFILL FOR STRUCTURES

IF THE CONTRACTOR ELECTS TO CUT PAVEMENT (EXISTING/DETOUR) FOR STRUCTURAL WORK BEYOND THAT REQUIRED BY THE CONSTRUCTION PHASING SHOWN IN THE PLANS AND APPROVED BY THE COUNTY, IT SHALL BE RESTORED AT HIS EXPENSE AND BACKFILLED TO ITS ORIGINAL CONDITION OR BETTER IN ACCORDANCE WITH ITEM 400.

UNLESS SHOWN OTHERWISE IN THE PLANS, USE A 1-FT DEPTH FOR ITEM 400 STRUCTURAL EXCAVATION (SPECIAL) FOR GRAVEL BEDDING NEEDED BELOW DRAINAGE STRUCTURES WITH UNSTABLE MATERIAL.

STRUCTURAL EXCAVATION SPECIAL (GRAVEL):

USE DURABLE NATURAL STONE WHEN TESTED IN ACCORDANCE WITH TEX-411-A, HAS WEIGHT LOSS OF NO MORE THAN 18% AFTER 5 CYCLES OF MAGNESIUM SULFATE SOLUTION. PROVIDE GRAVEL CONFORMING TO AN AGGREGATE GRADE NO. 1 AS SHOWN ON TABLE 4 OF ARTICLE 421.2.

ITEM 416: DRILLED SHAFT FOUNDATIONS

PAYMENT FOR FURNISHING AND INSTALLING ANCHOR BOLTS MOUNTED IN DRILL SHAFTS WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS DIAMETER DRILL SHAFTS.

THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO VERIFY UTILITY LOCATIONS BEFORE DRILLING FOUNDATIONS.

THE CONTRACTOR SHALL FORM, OR PROVIDE A SMOOTH FINISH, THE PORTIONS OF DRILLED SHAFT THAT PROJECT ABOVE THE GROUND LINE. PLACE A ¾ INCH CHAMFER ON THE TOP EDGE OF EACH POLE FOUNDATION. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THIS BID ITEM.

ALL DRILLED SHAFT FOUNDATIONS WILL BE BASED ON THE LENGTHS SHOWN ON THE PLANS OR THOSE ESTABLISHED IN WRITING. ADEQUATE CALCULATIONS FOR MEASUREMENTS OF FOUNDATIONS HAVE BEEN MADE IN ACCORDANCE WITH ARTICLE 9.1 OF THE STANDARD SPECIFICATIONS. INCREASES OR DECREASES IN THE QUANTITIES REQUIRED BY CHANGE IN DESIGN WILL BE MEASURED AS SPECIFIED AND THE REVISED QUANTITIES WILL BE THE BASIS FOR PAYMENT.

IN THE PRESENCE OF EXCESS GROUND WATER AND/OR UNSTABLE CONDITIONS IN SUB-GRADE SOILS PREVENTS EXCAVATION TO THE LINE AND DEPTHS INDICATED ON THE PLANS FOR "DRILLED SHAFT FOUNDATION", OTHER PROPOSED METHODS OF FOUNDATION INSTALLATION SUCH AS CASING, ETC. SHALL BE SUBMITTED FOR REVIEW AND APPROVED BY THE COUNTY.

ITEM 420: CONCRETE SUBSTRUCTURES

PAY BENT CONCRETE AS PLAN QUANTITY.

ITEM 421: HYDRAULIC CEMENT CONCRETE

PROVIDE EQUIPMENT AT THE BATCH PLANT FOR DETERMINING THE FREE MOISTURE AND/OR ABSORPTION OF AGGREGATES IN ACCORDANCE WITH APPLICABLE TXDOT TESTS.

PROVIDE THE FOLLOWING ITEMS FOR CONCRETE BATCH INSPECTION IN ACCORDANCE WITH SPECIFICATIONS OUTLINED IN DMS-10101, "COMPUTER EQUIPMENT":

(1) ONE DESKTOP MICROCOMPUTER OR ONE LAPTOP MICROCOMPUTER
(2) ONE INTEGRATED PRINTER/SCANNER/COPIER/FAX UNIT
(3) CONTRACTOR-FURNISHED SOFTWARE
(4) HARDWARE

SUBMIT TO THE COUNTY FOR APPROVAL THE PROJECT LOCATIONS FOR ALL PORTLAND CEMENT CONCRETE WASHOUT AREAS PRIOR TO STARTING ANY CONCRETE WORK.

USE MEMBRANE CURING, TYPE 2, FOR CONCRETE CURB, GUTTER AND COMBINED CURB AND GUTTER, CONCRETE MEDIANS, DIRECTIONAL ISLANDS AND SIDEWALKS.

ITEM 427: SURFACE FINISHES FOR CONCRETE

PROVIDE SURFACE FINISHES FOR CONCRETE AS FOLLOWS:

BRIDGE WATERWAY CROSSINGS AND BRIDGE CLASS BOX CULVERT STRUCTURES – SURFACE AREA II, OPAQUE SEALER COATING (COLOR TO BE DETERMINED BY THE COUNTY).

CONCRETE TRAFFIC BARRIER/RAILING (ROADWAY AND BRIDGE), AND RETAINING WALL COPING - OPAQUE SEALER COATING (COLOR TO BE DETERMINED BY THE COUNTY) TO ALL EXPOSED SURFACES.

B2Z ENGINEERING
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HIDALGO COUNTY PRECINCT 2
COMMISSIONER
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ITEM 432: RIPRAP

PROVIDE CLASS "A" CONCRETE MINIMUM FOR RIPRAP APRONS PLACED AROUND ALL BOX CULVERT AND PIPE SAFETY END TREATMENTS. PROVIDE ¼-INCH THICK DUMMY JOINTS AT LEAST EVERY 15-FT FOR RIPRAP APRONS PLACED AROUND BOX AND PIPE CULVERTS.

DO NOT USE FIBER REINFORCED CONCRETE RIPRAP ON SIDE SLOPES EQUAL TO OR STEEPER THAN 6:1 UNLESS APPROVED BY THE ENGINEER.

ITEM 462: CONCRETE BOX CULVERTS AND DRAINS

PROVIDE JOINTS IN PRE-CAST CONCRETE BOX CULVERTS USING ANY OF THE METHODS SPECIFIED IN ITEM 464, EXCEPT MORTAR JOINTS.

PROVIDE PRE-CAST CONCRETE BOXES TO EXPEDITE TRAFFIC HANDLING UNLESS OTHERWISE SHOWN ON THE PLANS.

PROVIDE THE AREA ENGINEER WITH THE CASTING SCHEDULE OF ALL PRE-CAST CONCRETE BOXES PRIOR TO BEGINNING ANY FABRICATION.

ITEM 464: REINFORCED CONCRETE PIPE

USE TONGUE AND GROOVE PIPE WHERE THE RCP EXTENDS INTO THE LIME TREATED SUBGRADE. THE 4-FOOT DEPTH RESTRICTION FOR HEAVY EQUIPMENT PASSAGE OVER PIPE STRUCTURES IS VOIDED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY CONSTRUCTION DAMAGE TO THESE FACILITIES.

DO NOT USE MORTAR JOINTS.

ALL REINFORCED CONCRETE PIPE SHALL INCLUDE RUBBER GASKETS UNLESS SHOWN OTHERWISE ON THE PLANS OR DIRECTED BY THE COUNTY.

ITEM 465: JUNCTION BOXES, MANHOLES & INLETS

FOR TY PSL WITH RG, FG, OR SFG LID INLETS, PROVIDE CLASS B CONCRETE RIPRAP WITH (6"X6" W3XW3 (NO. 6 GAUGE) WELDED WIRE FABRIC) FOR ANY SIDE THAT IS TOUCHING THE NATURAL GROUND. THE RIPRAP WILL BE 4-IN THICK AND 3-FT WIDE WITH AN 8-IN DEEP BY 6-IN WIDE TOE UNLESS OTHERWISE SHOWN IN THE PLANS. THE COST WILL BE SUBSIDIARY TO ITEM 465 UNLESS OTHERWISE SHOWN IN THE PLANS.

ITEM 466: HEADWALLS AND WINGWALLS

DO NOT USE PRE-CAST HEADWALLS/WINGWALLS.

ITEM 467: SAFETY END TREATMENT

ALL TYPE II SET'S SHALL HAVE RIPRAP, CLASS "A" MINIMUM, APRONS AS SHOWN ON THE PLANS. THE CONTRACTOR MAY SUBMIT AN ALTERNATE PRECAST SET DESIGN FOR APPROVAL BY THE COUNTY.

ITEM 471: FRAMES, GRATES, RINGS, AND COVERS

ALL GRATES WILL BE TACK WELDED TO THE FRAMES IN A MANNER SATISFACTORY TO THE COUNTY.

ITEM 502: BARRICADES, SIGNS, AND TRAFFIC HANDLING

SHADOW VEHICLES EQUIPPED WITH TRUCK-MOUNTED ATTENUATORS ARE REQUIRED.

REPLACE/RELOCATE ALL REGULATORY SIGNS REMOVED DUE TO CONSTRUCTION OPERATIONS WITH THE SAME SIGN ON FIXED SUPPORT(S) IMMEDIATELY UPON ITS REMOVAL. FIRST OBTAIN COUNTY APPROVAL BEFORE RE-MOVING ANY REGULATORY ROADWAY SIGN. REQUIRED FLAGGERS ARE TO BE AVAILABLE TO DIRECT TRAFFIC DURING SIGN INTERMEDIATE DOWN TIME.

RELOCATE ANY DIRECTIONAL SIGN ASSEMBLIES REMOVED DURING CONSTRUCTION OPERATIONS IMMEDIATELY UPON THEIR REMOVAL.

THESE SIGNS SHALL BE RELOCATED TO A LOCATION IN ACCORDANCE WITH THE LATEST VERSION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". IN NO CASE WILL A SIGN BE REMOVED WITHOUT A REPLACE-MENT SIGN AND SUPPORT(S) BEING READILY AVAILABLE AND A LOCATION ESTABLISHED. REMOVAL AND RELOCATION OF THESE SIGNS REQUIRED FOR TRAFFIC CONTROL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 502.

FROM THE BEGINNING TO THE END OF THE PROJECT, ALL TRAFFIC CONTROL DEVICES NEED TO BE IN ACCEPTABLE CONDITION AS PER THE TEXAS QUALITY GUIDELINES FOR WORK ZONE TRAFFIC CONTROL DEVICES.

UTLIZE THE LATEST VERSIONS OF WORK ZONE STANDARD SHEETS WZ (BTS-1) AND WZ (BTS-2) ARE THE TRAFFIC CONTROL PLAN FOR THE SIGNAL INSTALLATIONS.

B2Z ENGINEERING
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HIDALGO COUNTY PRECINCT 2
COMMISSIONER
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CK DW:			HIDALGO					MILPAS
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ITEM 504: FIELD OFFICE AND LABORATORY

FOR THIS PROJECT, A FIELD OFFICE WILL NOT BE REQUIRED AT THE PROJECT SITE.

ITEM 610: ROADWAY ILLUMINATION ASSEMBLIES

LUMINAIRES SHOWN ON THE PROPOSED TRAFFIC SIGNAL INSTALLATION LAYOUT SHEETS MAY BE SHOWN AT AN ANGLE FOR CLARITY.

IN ADDITION TO ED(2)-14, EACH CABLE FOR LUMINAIRES SHALL BE IDENTIFIED IN EACH GROUND BOX, POLE BASE, OR OTHER ACCESSIBLE LOCATION WITH YELLOW ELECTRICAL TAPE WRAPPED AROUND THE CABLE. THE TAPE
MARKING SHALL BE AT LEAST 2 INCHES.

ALL LUMINAIRES ON TRAFFIC SIGNAL POLES SHALL BE LED 130 WATTS.

LUMINAIRES INSTALLED ON TRAFFIC SIGNAL POLES WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE BID ITEM 680 OF THE PROJECT.

ITEM 618: CONDUIT

ALL CONDUIT ENDS IN POLE BASES, CONTROLLERS AND GROUND BOXES SHALL BE PLUGGED WITH 4 TO 6 INCHES OF POLYURETHANE SEALANT OR ITS EQUIVALENT AFTER CABLES ARE IN PLACE.

CONDUIT SHALL BE PLACED IN A STRAIGHT LINE NOT TO EXCEED 2.0 FEET IN ANY DIRECTION. THE DEPTH OF THE CONDUIT SHALL BE 2.0 FEET EXCEPT WHEN CROSSING A ROADWAY WHERE THE DEPTH SHALL NOT BE MORE THAN 3.0 FEET NOR LESS THAN 1.0 FOOT BELOW THE BOTTOM OF THE BASE MATERIAL IN THE ROADWAY WHEN PLACED BY THE JACKING OR BORING METHOD. ANY EVIDENCE OF DAMAGE TO THE ROADWAY DURING THE JACKING OR BORING OPERATION SHALL BE SUFFICIENT GROUNDS TO STOP THE METHOD BEING USED.

CONDUIT RUNS UNDER PAVED ROADWAYS OR DRIVEWAYS SHALL BE JACKED OR BORED AND THEN PUSHED ACROSS. AT THESE LOCATIONS, GALVANIZED RIGID METAL MAY BE USED. ALL OTHER RUNS SHALL BE MADE BY TRENCHING. EXISTING PAVEMENT WHICH WILL BE REMOVED, RECONSTRUCTED OR OVERLAID WITH NEW PAVEMENT MAY BE TRENCHED ACROSS.

TRENCHES FOR CONDUIT RUNS SHALL BE A MINIMUM 2 FEET DEEP AND 4 INCHES WIDE. THE CONDUIT SHALL BE PLACED ON A 2-INCH SAND CUSHION AND THEN BACKFILLED WITH A MINIMUM OF 6 INCHES SAND FILL. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH FLEXIBLE BASE, SOIL OR TWO-SACK CONCRETE AS REQUIRED BY LOCATION OF CONDUIT ON THE PROJECT OR AS DIRECTED. THE TOP 3 INCHES SHALL MATCH THE
EXISTING SURFACE MATERIAL.

ALL CONDUIT ELBOWS AND RIGID EXTENSIONS REQUIRED TO BE INSTALLED ON PVC CONDUIT SYSTEMS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

USE MATERIALS FROM PREQUALIFIED MATERIAL PRODUCERS LIST AS SHOWN ON THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) - CONSTRUCTION DIVISION'S (CST) MATERIALS PRODUCERS LIST. CATEGORY IS "ROADWAY ILLUMINATION AND ELECTRICAL SUPPLIES."

ITEM 620: ELECTRICAL CONDUCTORS

TEST EACH WIRE OF EACH CABLE OR CONDUCTOR AFTER INSTALLATION. INCOMPLETE CIRCUITS OR DAMAGE TO THE WIRE OR THE CABLE ARE CAUSE FOR IMMEDIATE REJECTION OF THE ENTIRE CABLE BEING TESTED. REMOVE AND REPLACE THE ENTIRE CABLE AT NO EXPENSE TO HIDALGO COUNTY PRECINCT #2. ALSO TEST THE REPLACEMENT CABLE AFTER INSTALLATION.

WHEN PULLING CABLES OR CONDUCTORS THROUGH THE CONDUIT, DO NOT EXCEED THE MANUFACTURER'S RECOMMENDED PULLING TENSIONS. LUBRICATE THE CABLES OR CONDUCTORS WITH A LUBRICANT RECOMMENDED BY THE CABLE MANUFACTURER. ENSURE THAT CIRCUITS TEST CLEAR OF FAULTS, GROUNDS, AND OPEN CIRCUITS. SPLIT BOLT CONNECTORS ARE ALLOWED ONLY FOR SPLICES ON THE GROUNDING CONDUCTORS. DO NOT USE NON-CERTIFIED PERSONS TO PERFORM ELECTRICAL WORK.

FOR PED POLES (ITEM 687), PROVIDE SINGLE-POLE BREAKAWAY DISCONNECTS. USE BUSSMAN HEBW, LITTELFUSE LEB, FERRAZ-SHAWMUT FEB, OR EQUAL ON UNGROUNDED CONDUCTORS.

FOR ALL GROUNDED CONDUCTORS USE BUSSMAN HET, LITTELFUSE LET, FERRAZ-SHAWMUT FEBN, OR EQUAL ON UNGROUNDED CONDUCTORS. FOR ALL GROUNDED CONDUCTORS USE BUSSMAN HET, LITTELFUSE LET, FERRAZ-SHAWMUT FEBN, OR EQUAL. THESE BREAKAWAY CONNECTORS HAVE A WHITE COLORED MARKING AND A PERMANENTLY INSTALLED SOLID NEUTRAL.

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HIDALGO COUNTY PRECINCT 2
COMMISSIONER
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ITEM 621: TRAY CABLE

CONNECT LUMINAIRES ON TRAFFIC SIGNAL POLES USING A 4-CONDUCTOR TRAY CABLE WITH CONDUCTOR COLORS OF RED, BLACK, AND GREEN #12 AWG (XHHW). THE WHITE (NEUTRAL) CONDUCTOR WILL NOT BE NEEDED
AND WILL BE CAPPED.

ITEM 624: GROUND BOXES

THE GROUND BOX LOCATIONS ARE APPROXIMATE. ALTERNATE GROUND BOX LOCATIONS MAY BE USED AS DIRECTED, TO AVOID PLACING IN SIDEWALKS OR DRIVEWAYS.

DURING CONSTRUCTION AND UNTIL PROJECT COMPLETION, PROVIDE PERSONNEL AND EQUIPMENT NECESSARY TO REMOVE GROUND BOX LIDS FOR INSPECTION. PROVIDE THIS ASSISTANCE WITHIN 24 HOURS AFTER NOTIFICATION.

IF WITHIN THE LIMITS OF THIS PROJECT AN EXISTING GROUND BOX WITH A METAL COVER IS UTILIZED, ENSURE METAL COVER IS PROPERLY GROUNDED. PERFORM THIS WORK IN ACCORDANCE WITH THE LATEST STANDARD SHEET ED (3), B. CONSTRUCTION METHODS - #4 AND #6. SEE ED (3), B. CONSTRUCTION METHODS - #5 FOR POSSIBLE REQUIREMENTS OF GROUNDING EXISTING METAL GROUND BOX COVERS NOT INVOLVED IN THE SCOPE OF THIS PROJECT.

CONSTRUCT CONCRETE APRONS IN ACCORDANCE WITH THE LATEST STANDARD SHEET ED (3). MAKE THE DEPTH OF THE CONCRETE APRON THE SAME AS THE DEPTH OF THE GROUND BOX, EXCEPT FOR TYPE 1 AND TYPE 2 GROUND BOXES. FOR TYPE 1 OR TYPE 2 GROUND BOXES, CONSTRUCT THE CONCRETE APRON IN ACCORDANCE WITH DETAILS SHOWN ON THE “GROUND BOX DETAILS INSTALLATIONS” STANDARD.

ITEM 628: ELECTRICAL SERVICE

ARRANGE FOR AND COOPERATE WITH UTILITY COMPANY TO PROVIDE ELECTRICAL POWER FOR THE PROPOSED SERVICE(S) SHOWN AND AS REQUIRED BY THE PLANS. FURNISH A UL-LISTED METER CAN FOR ALL ELECTRICAL SERVICES. FURNISH A SIZE AND STYLE OF METER CAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL ELECTRICAL SERVICE PROVIDER. THIS WORK IS INCIDENTAL TO THE ITEM, “ELECTRICAL SERVICES”.

VERIFY AND COORDINATE THE ELECTRICAL SERVICE LOCATION WITH THE UTILITY COMPANY.

IDENTIFY THE ELECTRICAL SERVICE WITH AN ADDRESS NUMBER. PROVIDE 2-IN. NUMERALS VISIBLE FROM THE ROADWAY. PROVIDE NUMBERS CUT OUT ALUMINUM FIGURES NAILED TO WOOD POLES OR PAINTED FIGURES ON STEEL POLES OR SERVICE CABINETS.

ITEM 644: SMALL ROADSIDE SIGN ASSEMBLIES

ALL SIGNS SHALL BE INSTALLED AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE “SIGN CREW FIELD BOOK” (SCFB).

ALL SIGNS SHALL BE ERECTED ACCORDING TO THE LOCATIONS SHOWN ON THE SIGNING LAYOUT SHEETS EXCEPT THAT A SIGN MAY BE SHIFTED IN ORDER TO SECURE A MORE DESIRABLE LOCATION. ALL SIGN LOCATIONS WILL BE STAKED AS SHOWN IN THE PLANS AND AS APPROVED. IT IS THE INTENT OF THE PLANS TO ERECT ALL ROADSIDE TRAFFIC SIGNS WITH THE SIGN EDGE A MINIMUM OF 6 FEET FROM THE EDGE OF THE SHOULDER, OR IF NONE, 12 FEET FROM THE EDGE OF THE TRAVEL LANE. IN CURB AND GUTTER SECTIONS THE SIGN EDGE SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF THE CURB.

FOR THIS PROJECT, ALUMINUM TYPE SIGN BLANKS AS PROVIDED FOR UNDER ITEM 636 WILL BE REQUIRED FOR ALL PROPOSED SIGNING INSTALLED UNDER ITEM 644. ALUMINUM SIGN BLANKS LESS THAN 7.5 SQUARE FEET SHALL BE 0.08 INCH THICK, SIGN BLANKS 7.5 TO 15 SQUARE FEET SHALL BE 0.100 INCH THICK AND SIGN BLANKS GREATER THAN 15 SQUARE FEET SHALL BE 0.125 INCH THICK.

ALL EXCESS EXCAVATION SHALL BE SPREAD UNIFORMLY INSIDE THE RIGHT OF WAY AS DIRECTED AND SHALL BE INCLUDED IN THE PRICE OF THESE ITEMS.

SIGN TYPES WHICH DESIGN DETAILS ARE NOT SHOWN ON THE PLANS SHALL CONFORM WITH THE LATEST EDITION OF THE DEPARTMENT'S "STANDARD HIGHWAY SIGN DESIGN FOR TEXAS" MANUAL.

SIGNS SHOWN TO BE REMOVED SHALL INCLUDE THE COMPLETE SIGN INSTALLATION AND SEPARATE THE SIGN POST AT THE CONCRETE FOUNDATION. THE CONCRETE FOUNDATION SHALL BE DISPOSED IN ACCORDANCE WITH THIS BID ITEM. EXCEPT FOR CONCRETE FOUNDATIONS, ALL REMOVED SIGN PANELS, SIGN POSTS, AND HARDWARE SHALL REMAIN THEN PROPERTY OF THE COUNTY. ALL REMOVED SIGN INSTALLATIONS SHALL BE COMPLETELY DISASSEMBLED. THE REMOVED SIGN MATERIAL WILL BE REQUIRED TO BE HAULED TO THE COUNTY MAINTENANCE YARD CLOSEST TO THE PROJECT. NO SIGNS SHALL BE REMOVED WITHOUT PRIOR APPROVAL.

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TR:							
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ITEM 656: FOUNDATIONS FOR TRAFFIC CONTROL DEVICES

THE DIMENSIONS SHOWN ON THE PLANS FOR LOCATION OF SIGNAL POLE FOUNDATIONS, CONDUIT AND OTHER ITEMS MAY BE VARIED TO MEET EXISTING CONDITIONS AS APPROVED.

THE WORK AREA SHALL BE CLEANED UP AND ALL LOOSE MATERIAL RESULTING FROM THE CONTRACT OPERATIONS SHALL BE REMOVED FROM THE WORK AREA EACH DAY BEFORE WORK IS SUSPENDED.

NO TRAFFIC SIGNAL POLE SHALL BE PLACED ON THE FOUNDATIONS PRIOR TO SEVEN (7) DAYS FOLLOWING PLACEMENT OF CONCRETE.

ITEMS 662 AND 666: WORK ZONE PAVEMENT MARKINGS AND RETROREFLECTORIZED PAVEMENT MARKINGS

ALL PERMANENT PAVEMENT MARKINGS AND WORK ZONE PAVEMENT MARKINGS FOR THIS PROJECT UNDER THESE ITEMS SHALL BE 0.100 INCHES (100 MIL) THICK THERMOPLASTIC.

PAVEMENT SURFACE PREPARATION FOR MARKINGS AND MARKERS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 666.

PRIOR TO ANY STRIPING OPERATIONS, AN ON-SITE COORDINATION MEETING BETWEEN ALL THE PARTIES INVOLVED WILL BE REQUIRED TO REVIEW STRIPING DETAILS AND REQUIREMENTS TO ENSURE QUALITY WORK.

ITEM 680: INSTALLATION OF HIGHWAY TRAFFIC SIGNALS

THE INSTALLATION OF HIGHWAY TRAFFIC SIGNALS SHALL CONSIST OF THE FOLLOWING PRINCIPAL ITEMS:

1. FURNISHING AND INSTALLING 16-PHASE FULL TRAFFIC ACTUATED CONTROLLERS (TS2 NAZTEC OR EQUIVALENT), BASE MOUNTED AND POLE MOUNTED CABINETS, CONFLICT MONITORS, LOAD SWITCHES AND LOOP AMPLIFIERS.
2. FURNISHING AND INSTALLING EITHER STEEL MAST ARM POLES, OR STEEL STRAIN POLES AND SPAN WIRE AND PEDESTAL POLES (AS SHOWN ON PLANS), ELECTRICAL SERVICE, LUMINAIRES, SIGNAL HEADS, SIGNAL CABLES, PEDESTRIAN HEADS AND PEDESTRIAN PUSH BUTTONS WITH SIGNS THAT MEET THE "AMERICANS WITH DISABILITIES ACT" STANDARDS, LOOP DETECTORS, GROUND BOXES, CONDUIT RUNS AND CONTROLLER CONCRETE FOUNDATIONS.
3. REMOVAL AND SALVAGING OF EXISTING SIGNAL MATERIAL SPECIFIED IN THE PLANS.
4. ALL OTHER ITEMS NOT LISTED ABOVE WHICH ARE NEEDED TO PROVIDE FOR COMPLETE TRAFFIC SIGNAL INSTALLATIONS AND FOR PROPER SIGNAL OPERATION AS CALLED FOR IN THE PLANS AND SPECIFICATIONS SHALL BE FURNISHED AND INSTALLED.

ANY DEVIATION OF LOCATION FOR PROPOSED SIGNAL WORK SHALL BE AS APPROVED.

SIGNAL CONTROLLER

ANY SIGNAL INSTALLATIONS SHALL BE WIRED IN ACCORDANCE WITH THE PHASE DIAGRAMS IN THE PLANS. THE PROPOSED BASE MOUNTED CABINET SHALL CONTAIN 8-PHASE CONFLICT MONITOR WHICH DISPLAY THE "R-Y-G" AND "WALK" PHASES. IN ADDITION TO DETECTING PHASING CONFLICTS, THE CONFLICT MONITOR SHALL ALSO BE ABLE TO DETECT MULTIPLE SIGNAL HEAD INDICATIONS WITHIN EVERY PHASE. THE CONFLICT MONITOR SHALL CONTINUE TO OPERATE IN THE EVENT OF A POWER SUPPLY FAILURE IN THE TIMER AND SHALL BE ABLE TO RETAIN IN MEMORY, THE TIME AND DATE OF THE FAILURE DETECTION. TIME CHANGES SHALL BE PROGRAMMABLE IN THE FIELD WITHOUT REPLACING COMPONENTS OR USE OF EXTERNAL DEVICES. THE FULL-ACTUATED CONTROLLER SHALL MEET N.E.M.A. SPECIFICATIONS.

A CONTROLLER MANUFACTURER'S TECHNICIAN SHALL BE REQUIRED TO LOAD INITIAL TIMING PROGRAMS INTO THE CONTROLLERS AS CALLED FOR IN THE PLANS. ONCE THE TRAFFIC SIGNALS ARE TURNED ON, THE SAME TECHNICIAN SHALL MONITOR THE SIGNAL OPERATION AND TRAFFIC MOVEMENT AND SHALL ADJUST SETTINGS FOR BEST SIGNAL OPERATION. THE TECHNICIAN SHALL PROVIDE THE STATE WITH A CERTIFICATION THAT THE TIMING PLAN AND COORDINATION HAS BEEN ESTABLISHED ACCORDING TO THE PLANS. THIS CERTIFICATION SHALL INCLUDE A RECORD SHOWING ALL SETTINGS AND FUNCTIONS PROGRAMMED INTO THE TIMER AND ANY RELATED UNITS.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
GENERAL NOTES

SHEET 7 OF 9

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.	SHEET NO.
CK DN:			TEXAS		6G
DW:		STATE DIST. NO	COUNTY	CONTROL SECTION JOB	HIGHWAY NO.
CK DW:			HIDALGO		MILPAS
TR:					
CK TR:					

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THE CONTROLLER MUST BE DELIVERED WITH TWO SETS OF WIRING DIAGRAMS AND OPERATING MANUALS ENCLOSED IN A WEATHERPROOF BAG.

ALL WIRING NOT COVERED BY THE PLANS AND SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.

EXISTING UTILITIES

THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED WITH THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.

COORDINATION WITH THE UTILITY COMPANIES WILL BE REQUIRED TO MAKE ANY ADJUSTMENTS, DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY.

UNIFORMITY IN EQUIPMENT

1. ALL TRAFFIC SIGNAL HEADS FURNISHED SHALL BE BY THE SAME MANUFACTURER.
2. ALL SIGNAL FITTINGS AND PIPE BRACKETS SHALL BE OF AN APPROVED METALLIC MATERIAL AND OF THE SAME DESIGN AND MANUFACTURER.
3. ALL TRAFFIC SIGNAL POLES FURNISHED SHALL BE BY THE SAME MANUFACTURER.
4. ALL LOOP DETECTOR AMPLIFIERS FURNISHED SHALL BE BY THE SAME MANUFACTURER.

HANDLING OF TRAFFIC

ROADS AND STREETS SHALL BE KEPT OPEN TO TRAFFIC AT ALL TIMES. THE SETTING OF LOOP DETECTORS SHALL BE ARRANGED SO AS TO CLOSE ONLY ONE LANE OF A ROADWAY AT A TIME. THE INSTALLATION OF SIGNAL HEADS, POLES AND CONDUIT SHALL ALSO BE ARRANGED SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN BOTH DIRECTIONS AT ALL TIMES.

ALL CONSTRUCTION OPERATIONS SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC AS SHOWN ON THE PLANS, AS PROVIDED FOR IN THE SPECIFICATIONS AND/OR AS DIRECTED. ALL SIGNING,
BARRICADING AND HANDLING OF TRAFFIC SHALL CONFORM TO THE CURRENT EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

SEQUENCE OF WORK

1. THE EXISTING TRAFFIC SIGNAL INSTALLATIONS SHALL REMAIN IN OPERATION AT ALL TIMES DURING CONSTRUCTION OF THE PROPOSED TRAFFIC SIGNAL INSTALLATIONS OR MODIFICATIONS.
2. THE COMPLETE REMOVAL OF THE SPECIFIED EXISTING TRAFFIC SIGNALS OR SPECIFIED ITEMS WILL BE REQUIRED WHEN THE PROPOSED TRAFFIC SIGNAL INSTALLATIONS ARE IN PLACE AND OPERATIONAL.
3. ALL LABOR, TOOLS, AND MATERIALS USED TO REMOVE THE SPECIFIED EXISTING TRAFFIC SIGNAL MATERIAL SHALL NOT BE PAID FOR DIRECTLY BUT BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS OF WORK.
4. FINAL INSPECTION SHALL BE CONDUCTED IN CONJUNCTION WITH THE ENGINEER AND HIDALGO COUNTY PRECINCT #2.

ITEM 682: VEHICLE AND PEDESTRIAN SIGNAL HEADS

ALL SIGNAL HEADS SHALL BE COVERED WITH BURLAP FROM THE TIME OF INSTALLATION UNTIL THE SIGNAL IS PLACED IN OPERATION. ALL SIGNAL HEADS SHALL BE OF POLYCARBONATE MATERIAL AND YELLOW IN COLOR.

SIGNAL HEADS SHALL HAVE STANDARD DETACHABLE VISORS. LED'S SHALL BE FURNISHED FOR ALL TRAFFIC SIGNAL
HEADS.

SIGNAL HEADS SHALL BE POSITIONED CAREFULLY TO PROVIDE THE BEST VIEW OF SIGNAL INDICATIONS TO MOTORISTS. ALL SIGNAL HEADS SHALL BE INSTALLED TO A NEAT OVERALL APPEARANCE.

NOMINAL HEIGHT FOR SIGNAL HEADS ABOVE PAVEMENT SURFACE SHALL BE 18 FEET, 0 INCHES, PLUS/MINUS 3 INCHES.

PEDESTRIAN SIGNAL HEADS SHALL BE POSITIONED CAREFULLY TO PROVIDE THE BEST VIEW TO PEDESTRIANS.

ITEM 684: TRAFFIC SIGNAL CABLES

USE #12 AWG FOR ALL SIGNAL CABLE.

ITEM 686: TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)

THE LOCATIONS FOR THE PROPOSED TRAFFIC SIGNAL POLES ARE APPROXIMATE. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE ENGINEER.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
GENERAL NOTES

SHEET 8 OF 9

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.		SHEET NO.
CK DN:			TEXAS			6H
DW:				CONTROL	SECTION	JOB NO.	HIGHWAY NO.
CK DW:		STATE DIST. NO					
TR:			HIDALGO				MILPAS
CK TR:							

(HCIDA 07-22-22)

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FOR A STEEL MAST ARM OR STEEL STRAIN POLE ASSEMBLY, HOLD THE ANCHOR BOLTS AND CONDUITS RIGIDLY IN PLACE WITH A WELDED STEEL TEMPLATE.

LEAVE A MINIMUM OF ONE FULL DIAMETER THREAD EXPOSED ON EACH ANCHOR BOLT SECURING A SIGNAL POLE.

SET THE ANCHOR BOLTS FOR THE STEEL STRAIN POLES SO THAT TWO ARE IN COMPRESSION AND TWO ARE IN TENSION.

USE A TEXAS CONE PENETROMETER READING OF 10. THE DRILLED SHAFT LENGTH IS FROM THE SURFACE ELEVATION TO THE BOTTOM OF THE DRILLED SHAFT. PROVIDE AN ADDITIONAL LENGTH OF THE POLE FOUNDATION FROM THE SURFACE LEVEL TO THE ROADWAY LEVEL, IF REQUIRED FOR UNUSUAL LOCATIONS. PROVIDE THE DRILLED SHAFT DEPTH REGARDLESS OF THE LENGTH OF THE POLE FOUNDATION. THE POLE FOUNDATION DEPTH FROM THE SURFACE LEVEL TO THE ROADWAY LEVEL IS A MAXIMUM OF 4 FT., OR AS APPROVED.

LOCATE MAST ARM POLE ASSEMBLIES A MINIMUM OF 4 FT. FROM THE ROADWAY CURB OR PAVEMENT EDGE.

AFTER THE TRAFFIC SIGNAL POLE ASSEMBLY IS PLUMB AND ALL NUTS ARE TIGHT, TACK-WELD EACH ANCHOR BOLT NUT IN TWO PLACES TO ITS WASHER. TACK-WELD EACH WASHER TO THE BASE PLATE IN TWO PLACES. DO NOT WELD COMPONENTS TO THE BOLT. TACK-WELD IN ACCORDANCE WITH ITEM 441, “STEEL STRUCTURES.” AFTER TACK-WELDING, REPAIR GALVANIZING DAMAGE ON BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH SECTION 445.3.D, “REPAIRS.”

ITEM 1007: IRRIGATION WELLS, GATES AND VALVES

IF THE CONTRACTOR ELECTS, A LARGER SIZE ITEM MAY BE FURNISHED AND INSTALLED AT NO EXTRA COST TO THE STATE.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO “EDDIE” CANTU

LAS MILPAS ROAD
GENERAL NOTES

SHEET 9 OF 9

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:			TEXAS				61
DW:		STATE DIST. NO	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
CK DW:			HIDALGO				MILPAS
TR:							
CK TR:							

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LAS MILPAS ROAD ALIGNMENT

<* 1 Describe Chain PCL

Chain PCL contains:
PCL1 CUR PCL1 CUR PCL2 CUR PCL3 CUR PCL4 PCL2

Beginning chain PCL description

Point PCL1 X 1,067,165.27 Y 16,571,529.56 Sta 100+00.00

Course from PCL1 to PC PCL1 S 81° 21′ 37.88" E Dist 309.23

Curve Data

Curve PCL1					
P.I. Station	104+89.30	X	1,067,649.02	Y	16,571,456.06
Delta =	3° 11′ 01.09" (RT)				
Degree =	0° 53′ 03.10"				
Tangent =	180.08				
Length =	360.06				
Radius =	6,480.00				
External =	2.50				
Long Chord =	360.01				
Mid. Ord. =	2.50				
P.C. Station	103+09.23	X	1,067,470.99	Y	16,571,483.11
P.T. Station	106+69.29	X	1,067,825.28	Y	16,571,419.17
C.C.		X	1,066,497.58	Y	16,565,076.64
Back = S	81° 21′ 37.88" E				
Ahead = S	78° 10′ 36.80" E				
Chord Bear = S	79° 46′ 07.34" E				

Curve Data

Curve PCL2					
P.I. Station	108+49.37	X	1,068,001.53	Y	16,571,382.27
Delta =	3° 11′ 01.09" (LT)				
Degree =	0° 53′ 03.10"				
Tangent =	180.08				
Length =	360.06				
Radius =	6,480.00				
External =	2.50				
Long Chord =	360.01				
Mid. Ord. =	2.50				
P.C. Station	106+69.29	X	1,067,825.28	Y	16,571,419.17
P.T. Station	110+29.35	X	1,068,179.56	Y	16,571,355.22
C.C.		X	1,069,152.97	Y	16,577,761.69
Back = S	78° 10′ 36.80" E				
Ahead = S	81° 21′ 37.88" E				
Chord Bear = S	79° 46′ 07.34" E				

Course from PT PCL2 to PC PCL3 S 81° 21′ 37.88" E Dist 2,494.98

Curve Data

Curve PCL3					
P.I. Station	137+66.50	X	1,070,885.65	Y	16,570,944.06
Delta =	20° 47′ 30.54" (RT)				
Degree =	4° 20′ 26.12"				
Tangent =	242.17				
Length =	479.01				
Radius =	1,320.00				
External =	22.03				
Long Chord =	476.39				
Mid. Ord. =	21.67				
P.C. Station	135+24.33	X	1,070,646.23	Y	16,570,980.43
P.T. Station	140+03.34	X	1,071,096.57	Y	16,570,825.06
C.C.		X	1,070,447.95	Y	16,569,675.41
Back = S	81° 21′ 37.88" E				
Ahead = S	60° 34′ 07.34" E				
Chord Bear = S	70° 57′ 52.61" E				

Course from PT PCL3 to PC PCL4 S 60° 34′ 07.34" E Dist 1,531.98

Curve Data

Curve PCL4					
P.I. Station	157+77.61	X	1,072,641.86	Y	16,569,953.22
Delta =	20° 48′ 06.87" (LT)				
Degree =	4° 20′ 26.12"				
Tangent =	242.29				
Length =	479.24				
Radius =	1,320.00				
External =	22.05				
Long Chord =	476.61				
Mid. Ord. =	21.69				
P.C. Station	155+35.32	X	1,072,430.84	Y	16,570,072.27
P.T. Station	160+14.56	X	1,072,881.41	Y	16,569,916.86
C.C.		X	1,073,079.47	Y	16,571,221.92
Back = S	60° 34′ 07.34" E				
Ahead = S	81° 22′ 14.21" E				
Chord Bear = S	70° 58′ 10.78" E				

Course from PT PCL4 to PCL2 S 81° 22′ 14.21" E Dist 1,723.82

Point PCL2 X 1,074,585.72 Y 16,569,658.22 Sta 177+38.39

Ending chain PCL description

$FILE$

$DATE$

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED

12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
HORIZONTAL ALIGNMENT
DATA

SHEET 1 OF 1

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:		6	TEXAS				7
DW:		STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
CK DW:							
TR:		PHR	HIDALGO	-	-	-	MILPAS
CK TR:							

(HODA 07-22-22)

GENERAL NOTES AND SPECIFICATIONS DATA:

USE A POWER-BROOM WHEN CLEANING THE ROADWAY AS NEEDED.

REMOVE & DISPOSE ALL MATERIAL NOT DEEMED SALVAGEABLE BY THE COUNTY, UNLESS OTHERWISE SHOWN ON THE PLANS.

ON EXISTING PAVEMENT THAT WILL REMAIN IN PLACE, SAND BLAST OR SURFACE TREAT IN ORDER TO REMOVE EXISTING STRIPING.

DO NOT BLOCK DRAINAGE WHEN HANDLING & STOCKPILING EXCAVATED MATERIAL.

MAINTAIN ACCESS TO DRIVEWAYS AND INTERSECTIONS THROUGH ALL PHASES OF CONSTRUCTION.

MAINTAIN POSITIVE DRAINAGE DURING ALL PHASES OF CONSTRUCTION.

TRAFFIC CONTROL DEVICES:

AT THE COMMENCEMENT OF THE PROJECT, ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCEPTABLE CONDITION, AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AS PER GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES AND FEATURES.

NOTIFY THE COUNTY IN WRITING(E-MAIL IS ACCEPTABLE) ONCE THE TRAFFIC CONTROL PLAN(TCP) AND ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSTALLED AS PER PLANS ON THE PROJECT SO THAT THE COUNTY'S RESPONSIBLE PERSON ACCOMPANIED BY THE CONTRACTOR'S RESPONSIBLE PERSON CAN CONDUCT A NIGHT INSPECTION ON THE SAID TCP AND TRAFFIC CONTROL DEVICES. COMMENCEMENT OF WORK WILL NOT BE AUTHORIZED NOR ALLOWED UNTIL THE COUNTY NOTIFIES THE CONTRACTOR IN WRITING(E-MAIL IS ACCEPTABLE) TO PROCEED WITH THE WORK.

CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF TRAFFIC CONTROL DEVICES IN ACCEPTABLE CONDITION TO REPLACE ANY DAMAGED TRAFFIC CONTROL DEVICE WITHIN 24 HOURS OF NOTIFICATION.

PROVIDE ADDITIONAL SIGNS AND BARRICADES AS NECESSARY TO ADDRESS FIELD CONSTRUCTIBILITY & VISIBILITY. THESE ADDITIONAL SIGNS WILL BE CONSIDERED SUBSIDIARY TO ITEM 502.

REMOVE OR COMPLETELY COVER ALL EXISTING SIGNS WHICH ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN.

ADJUST STOP SIGNS AS NEEDED ON INTERSECTING STREETS DURING THE VARIOUS CONSTRUCTION PHASES. DO NOT REMOVE ANY EXISTING STOP SIGNS UNTIL TEMPORARY SIGNS ARE IN PLACE.

COORDINATE THE TRAFFIC CONTROL PLAN AND THE VARIOUS SEQUENCES OF CONSTRUCTION WITH ADJACENT CONSTRUCTION PROJECTS IF APPLICABLE, TO ENSURE THE UNINTERRUPTED AND SAFE FLOW OF TRAFFIC.

NOTIFY THE COUNTY IN WRITING WHEN MAJOR TRAFFIC CHANGES ARE TO BE MADE. NOTIFICATIONS MUST BE GIVEN A MINIMUM OF THREE WORKING DAYS PRIOR TO THE CHANGE.

ALL WORK ZONE PAVEMENT MARKINGS FOR THIS PROJECT SHALL BE 0.100 INCHES (100 MIL) THICK THERMOPLASTIC.

SAFETY:

PROTECT EXPOSED PITS THAT MUST REMAIN OPEN DURING NON-WORKING HOURS AS PER OSHA REQUIREMENTS.

PROJECT SPECIFIC NOTES:

1. TRAFFIC CONTROL PLAN STANDARDS TO GOVERN FLAGGING OPERATIONS, LANE CLOSURES, AND TRAFFIC SHIFTS.
2. COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY UTILITY LOCATIONS AND/OR ADJUSTMENTS PRIOR TO ANY EXCAVATION, GRADING, OR DIGGING OPERATIONS.
3. COORDINATE WITH HIDALGO COUNTY IRRIGATION DISTRICT NO. 2 TWO WEEKS IN ADVANCE OF ANY PROPOSED CONSTRUCTION ON THEIR IRRIGATION STRUCTURES, DRAINAGE STRUCTURES, OR BRIDGE STRUCTURES.
4. TRAFFIC CONTROL STANDARDS WZ(BTS 1-2)-13 SHALL GOVERN TRAFFIC SIGNAL CONSTRUCTION.

SEQUENCE OF CONSTRUCTION:

1. INSTALL PROJECT LIMIT AND ADVANCE WARNING SIGNS AS SHOWN ON THE BC AND WZ TCP STANDARDS IN ACCORDANCE WITH THE LATEST (TXMUCTD) AND OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS.
2. COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY UTILITY LOCATIONS AND/OR ADJUSTMENTS PRIOR TO ANY EXCAVATION, GRADING, OR DIGGING OPERATIONS.
3. TEMPORARY LANE CLOSURES AND / OR TRAFFIC SHIFTS SHALL BE GOVERNED BY TCP AND WZ TRAFFIC CONTROL STANDARDS. ALL LANE CLOSURES AND / OR TRAFFIC SHIFTS SHALL BE REOPENED AT THE END OF EACH WORKING DAY TO FULL TRAFFIC.
4. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE WITH HIDALGO COUNTY PRECINCT NO. 2 PRIOR TO THE INSTALLATION OF THE SIGNAL LOOPS ALONG THE PROPOSED LAS MILPAS ROADWAY. DELAYS FOR INSTALLATION OF THE LOOPS WITHOUT COMPLETED COORDINATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR CAN ELECT TO CONSTRUCT THE BRIDGE IN CONCURRENCE WITH THE SIGNAL, DRAINAGE OR IRRIGATION. INSTALLATION. THE CONTRACTOR SHALL COORIDNATE WITH HIDALGO COUNTY IRRIGATION DISTRICT NO. 2 AT A MINIMUM OF TWO WEEKS IN ADVANCE PRIOR TO WORKING AROUND THEIR FACILITIES.
6. THE CONTRACTOR SHALL UTILIZE TCP (2-4) - 18, TO GOVERN LANE CLOSURES TO INSTALL THE PROPOSED 48" STORM SEWER WEST OF 10th STREET AND UTILIZE TCP (2-4) - 18 AND WZ (BTS-1) AND (BTS-2) FOR SIGNAL AND FLASHING BEACON INSTALLATION.
7. THE CONTRACTOR SHALL CLOSE OFF THE BRIDGE CONSTRUCTION AT THE BRIDGE ENDS WITH MULTIPLE TEMPORARY TY 3 BARRICADES AND BRIDGE CLOSURE SIGNS DAILY AND SHALL REMAIN PROPORTY OF THE COUNTY UPON COMPLETION OF THE BRIDGE STRUCTURE.

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021
, P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

TRAFFIC CONTROL PLAN NOTES

SHEET 1 OF 1 SHEETS

LAS MILPAS ROAD TRAFFIC CONTROL GENERAL NOTES / SEQUENCE OF CONSTRUCTION

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					8
DW:		STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:								
TR:		PHR	HIDALGO	-	-	-		MILPAS
CK TR:								

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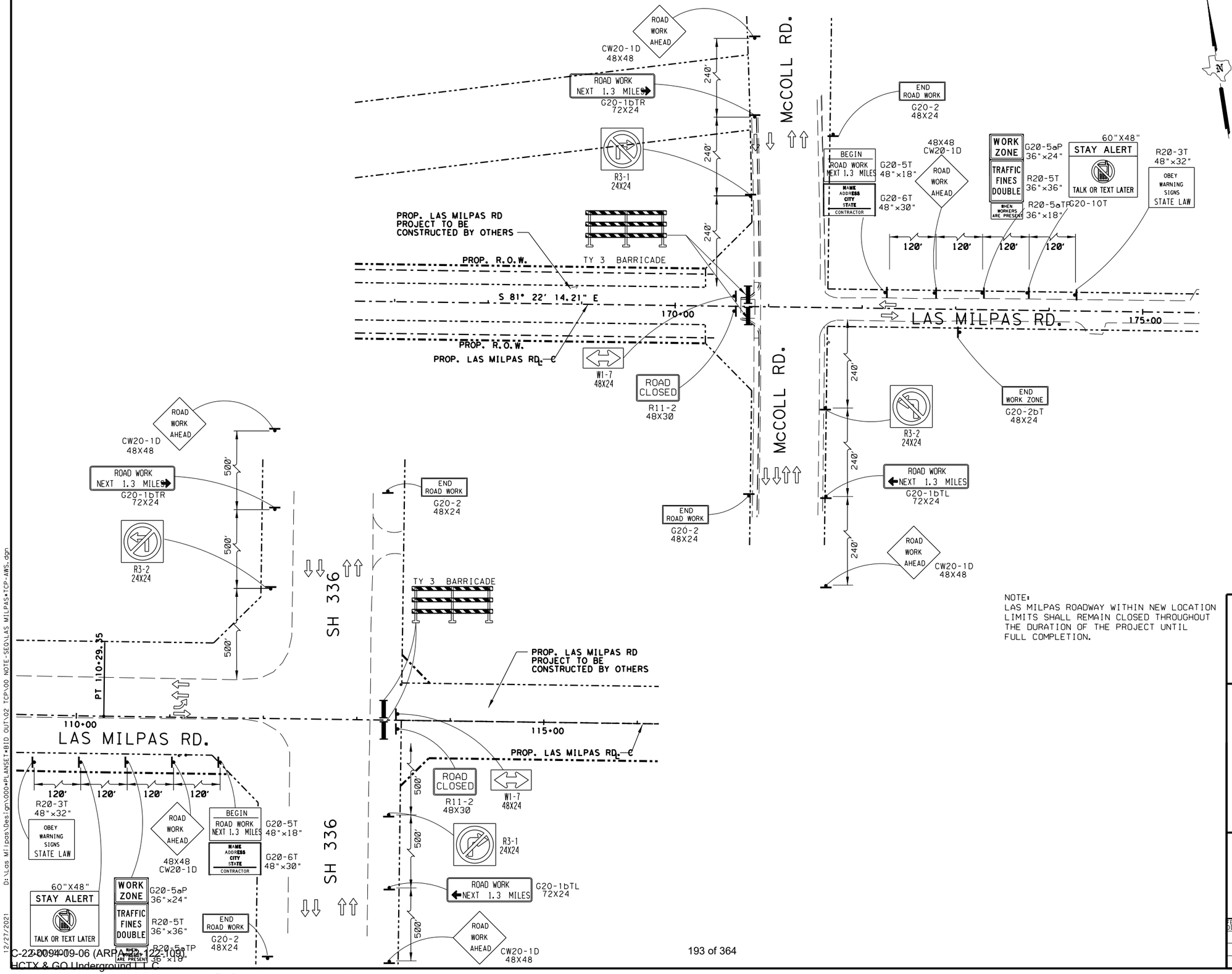
$DATES

(HCDA 07-22-22)



LEGEND	
	CONSTRUCTION PHASE
	TEMPORARY CONST. DETOUR
A	WORK ZONE PVMT MARK (NON-REM) 4" WHITE SOLID
B	WORK ZONE PVMT MARK (NON-REM) 4" YELLOW SOLID
B B	WORK ZONE PVMT MARK (NON-REM) 4" DOUBLE YELLOW SOLID W/ ONE TY II-A-A PAVMENT MARKER SPACED AT EVERY 40'
C	WORK ZONE PVMT MARK (REM) 4" WHITE SOLID
D	WORK ZONE PVMT MARK (REM) WHITE 4" (DOT)
E E	WORK ZONE PVMT MARK (REM) 4" DOUBLE YELLOW SOLID W/ ONE TY II-A-A PAVMENT MARKER SPACED AT EVERY 40'
F	WORK ZONE PVMT MARK (REM) 4" YELLOW (DOT)
G	WORK ZONE PVMT MARK (NON-REM) 24" WHITE SOLID
H	WORK ZONE PVMT MARK (NON-REM) 8" WHITE SOLID
I	WORK ZONE PVMT MARK (REM) 8" WHITE (DOT)
J	WORK ZONE PVMT MARK (NON-REM) 4" WHITE BROKEN W/ TY I-C PAVMENT MARKER SPACED AT EVERY 80'
→	DIRECTION OF TRAFFIC FLOW
	TYPE III BARRICADE
● ,■	CHANNELIZING DEVICE
	CONSTRUCTION SIGN

NOTE:
LAS MILPAS ROADWAY WITHIN NEW LOCATION LIMITS SHALL REMAIN CLOSED THROUGHOUT THE DURATION OF THE PROJECT UNTIL FULL COMPLETION.

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD TRAFFIC CONTROL PLANS ADVANCE WARNING SIGNS LAYOUT

SCALE: 1"= 100'

FED. RD. DIV. NO.	STATE AID PROJECT NO.		FILE NO.			SHEET NO.
6						9
STATE	STATE DIST. NO.	COUNTY			JOB	HIGHWAY NO.
TX	PHR	HIDALGO	-	-	-	MILPAS

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12/27/2021

C-22-009409-06 (ARPA-122-109) (HCDA-07-12-22
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

DISCLAIMER:
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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. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. 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 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," or equivalent revisions, and 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.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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 Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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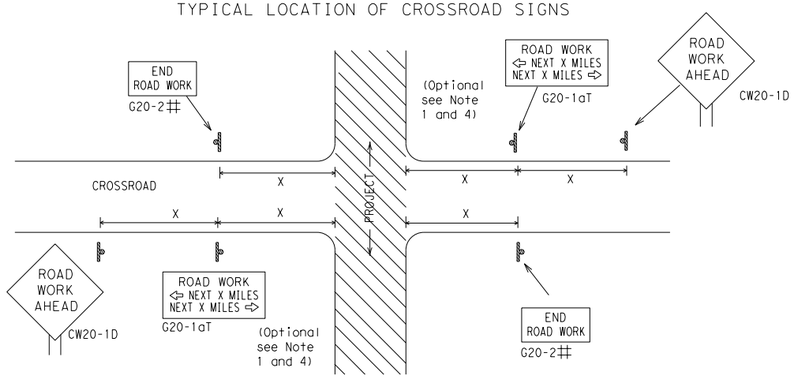
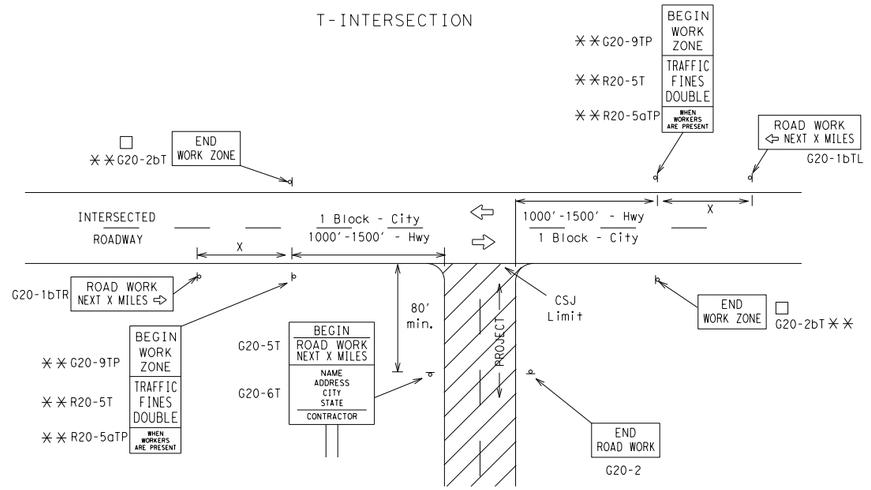
TYPICAL LOCATION OF CROSSROAD SIGNS



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 as per TMUTCD Part 5. 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"
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]

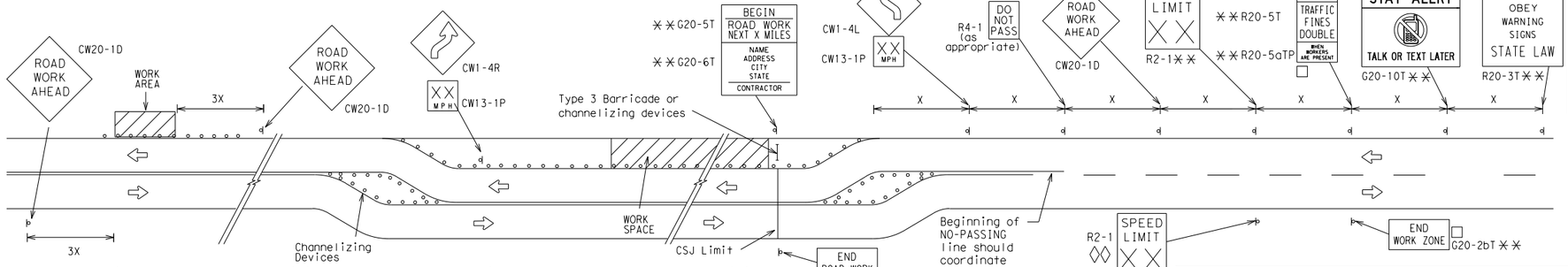
✳ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

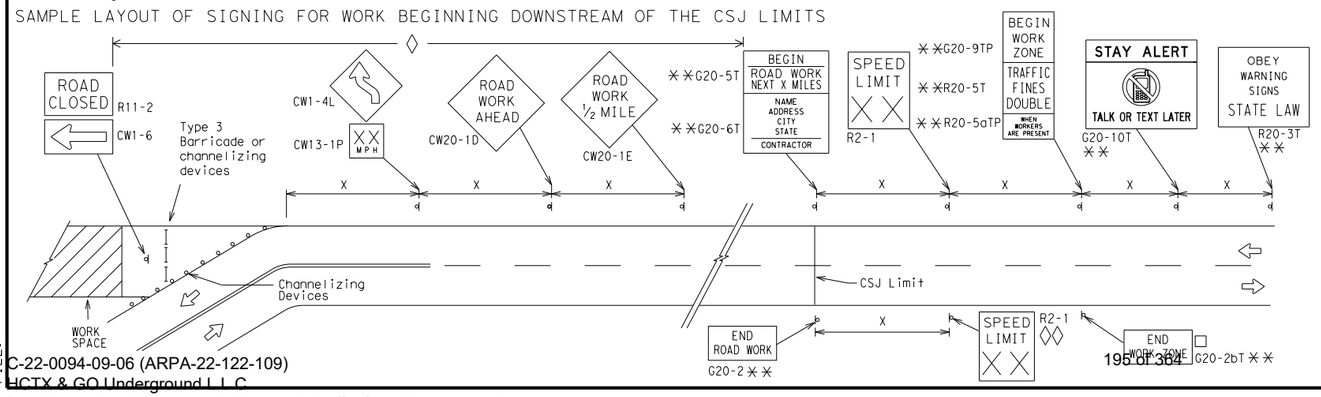
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. 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 DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT 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.

✳✳ CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ 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
○ ○ ○	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 Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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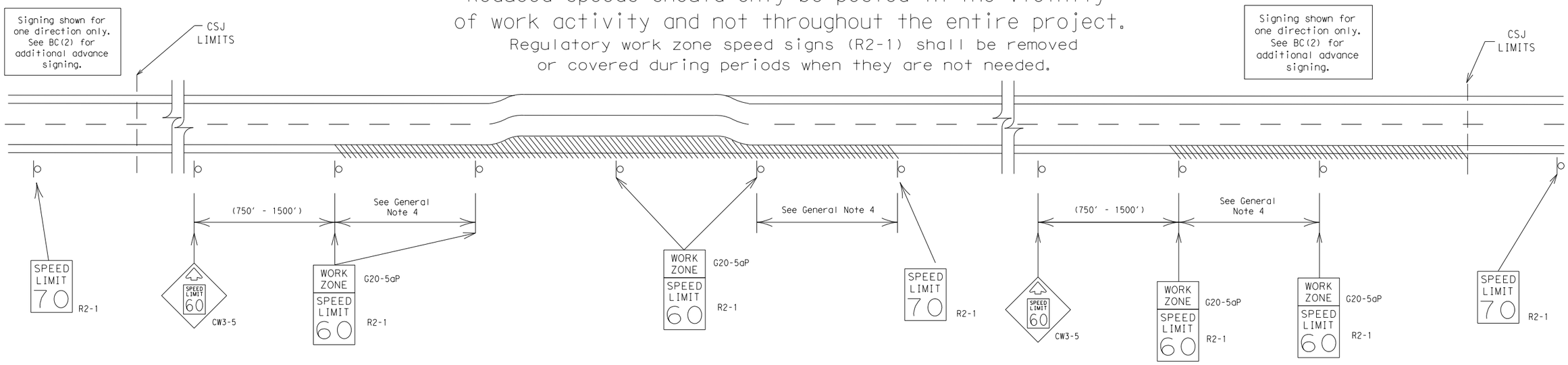
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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 traveled 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 Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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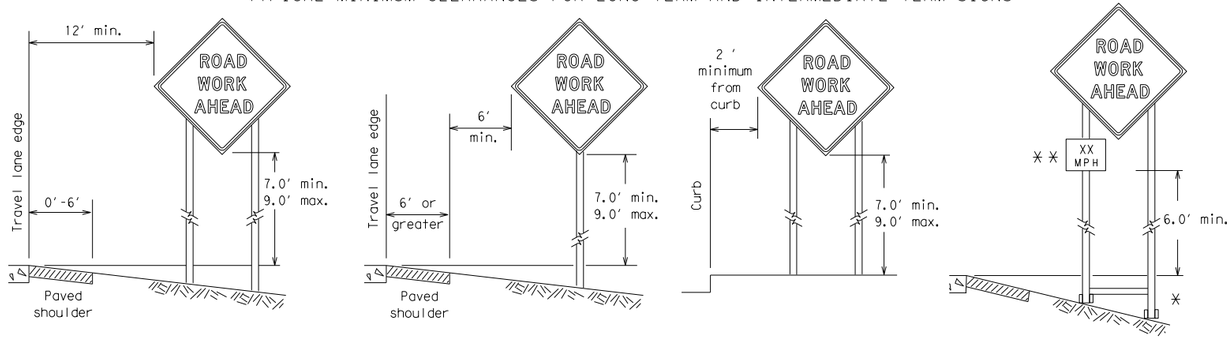
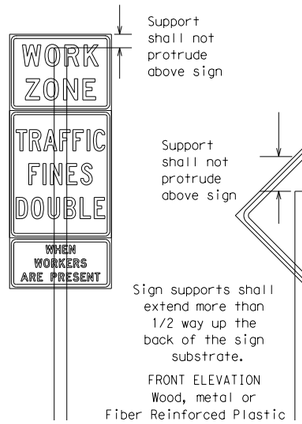
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

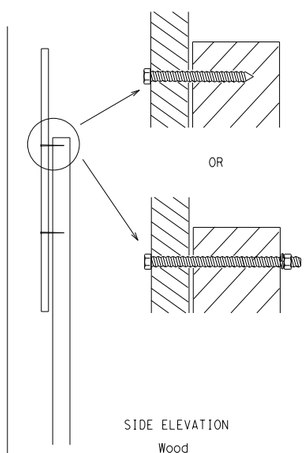


⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

⁎⁎ 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





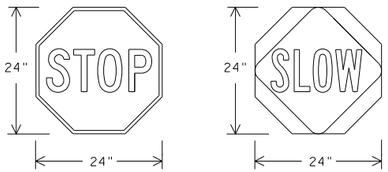
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

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.

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".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
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.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

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, specific service (LOGO), 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. For details for covering large guide signs see the TS-CD standard.
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 standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets 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) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets.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 Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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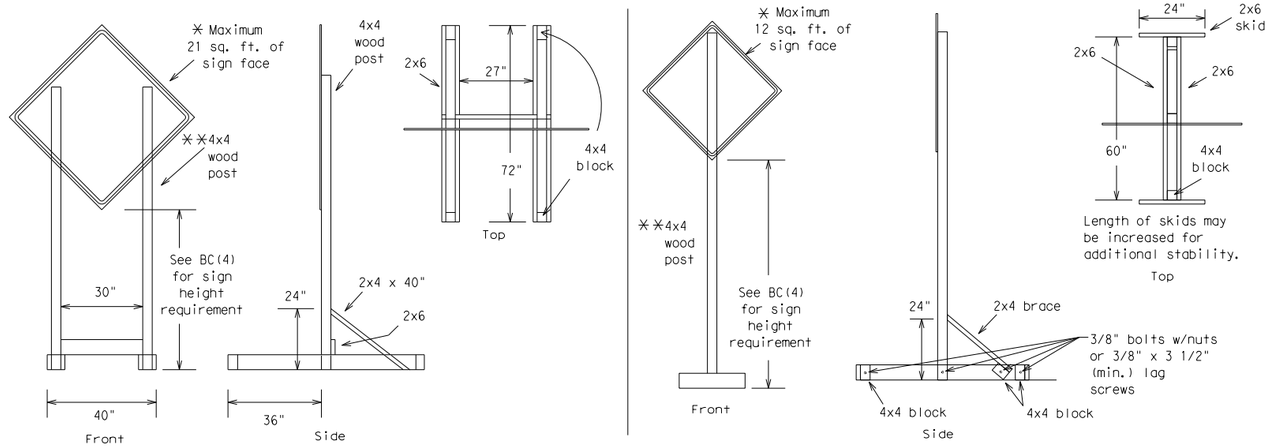
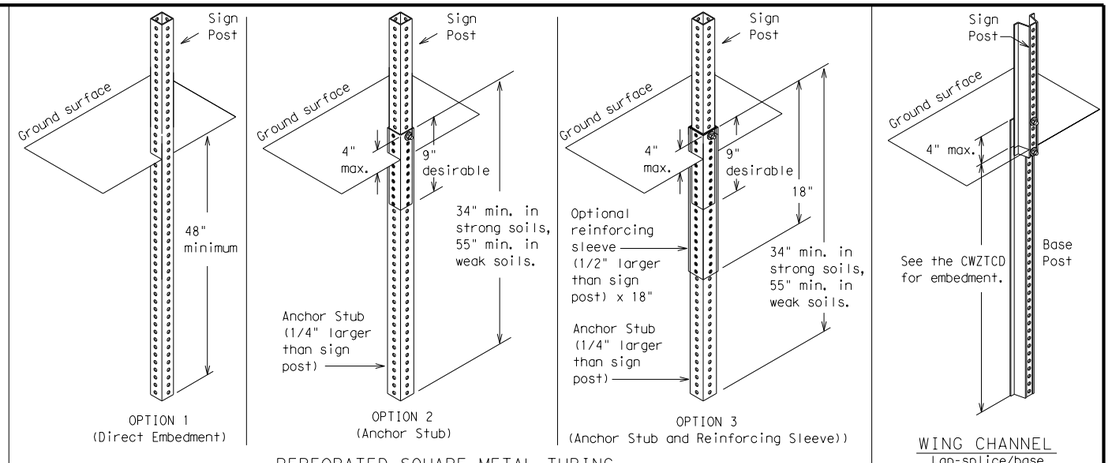


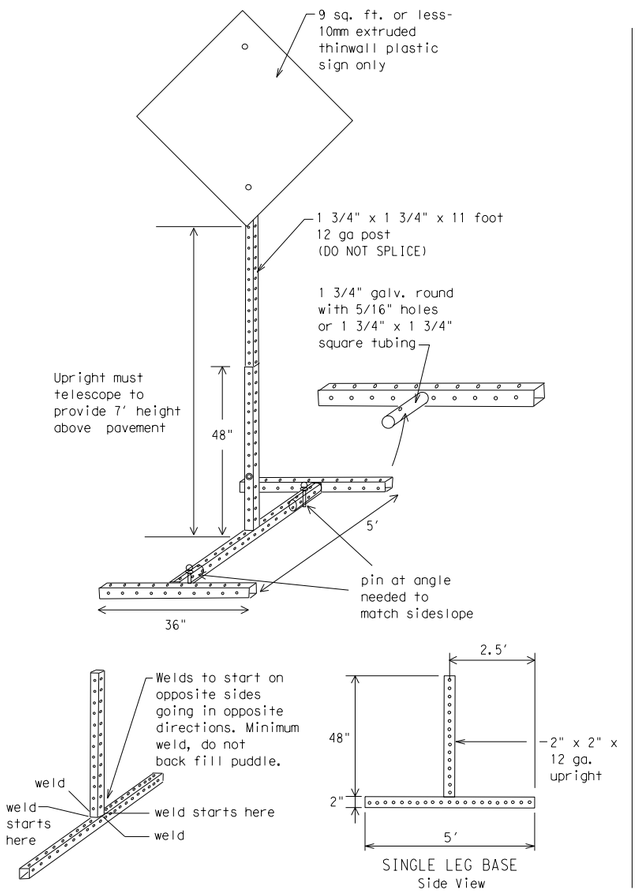
SKID MOUNTED WOOD SIGN SUPPORTS

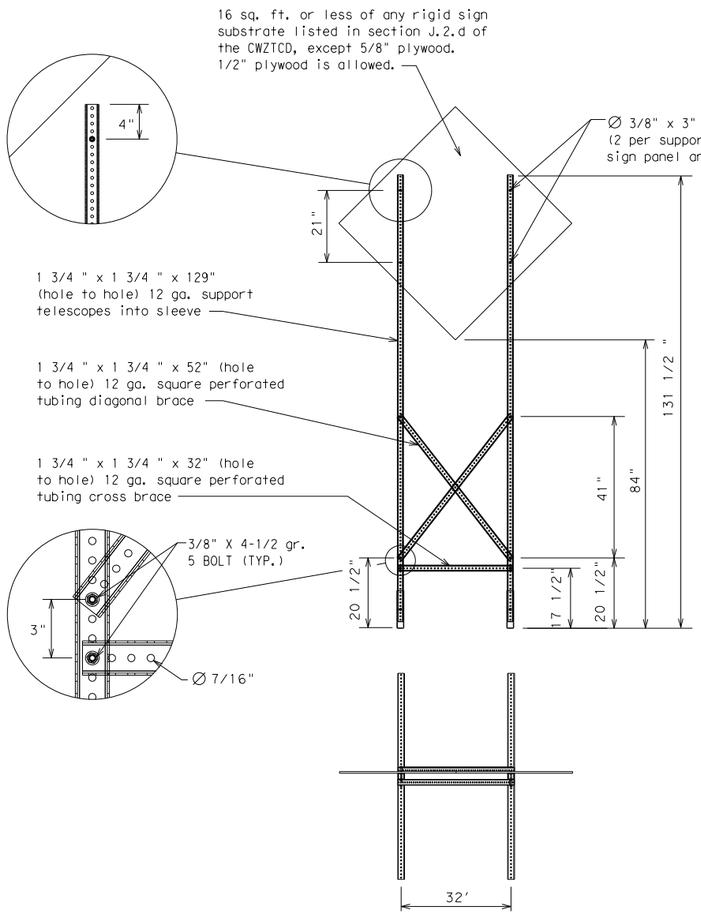
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

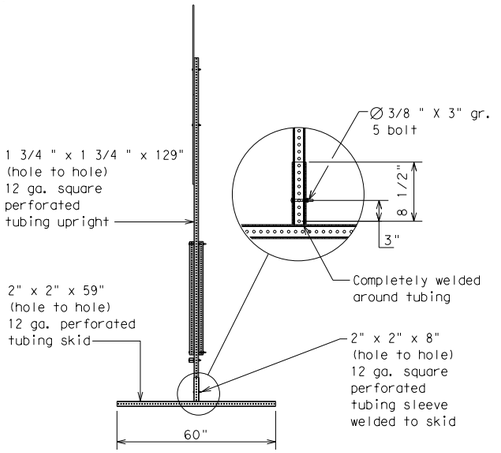


GROUND MOUNTED SIGN SUPPORTS

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.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID 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.

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Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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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 *

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

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

** 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.

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Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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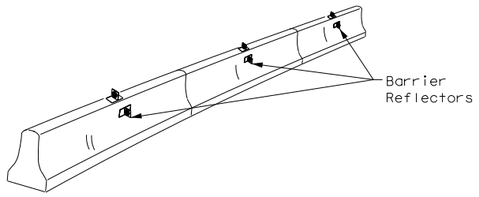
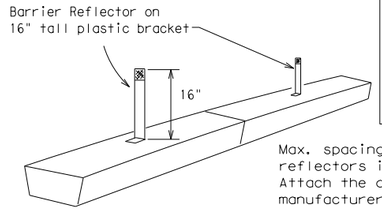
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost 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.

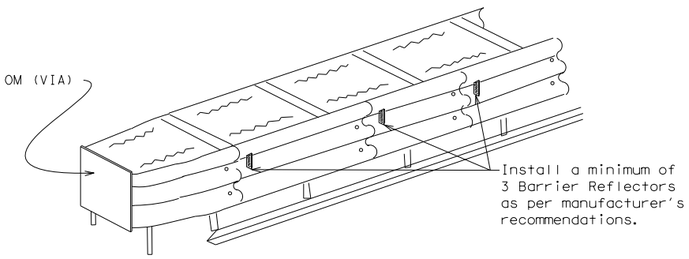


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

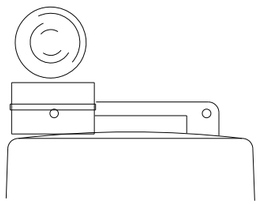


DELINEATION OF END TREATMENTS

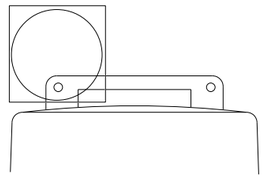
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). 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

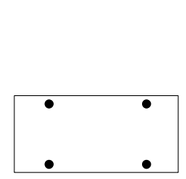
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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.

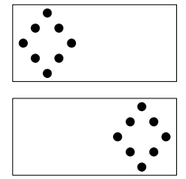
Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

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:

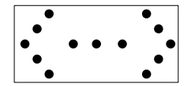


4 CORNER CAUTION

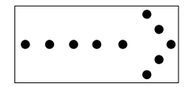
OR



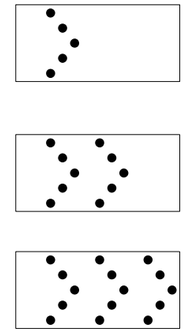
ALTERNATING DIAMOND CAUTION



DOUBLE ARROW



RIGHT/LEFT ARROW
(right arrow shown; left is similar)



RIGHT/LEFT SEQUENTIAL CHEVRON
(right chevron shown; left is similar)

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 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 an extended distance from the TMA.

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-21

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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:

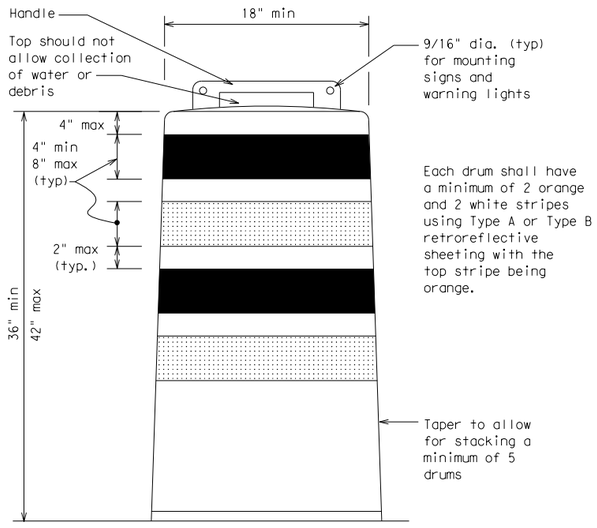
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents 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.

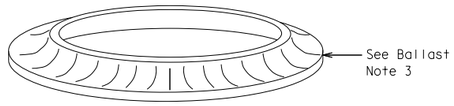
RETROREFLECTIVE SHEETING

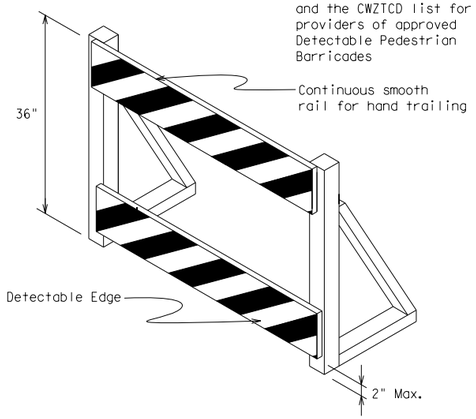
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall 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.

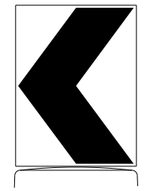




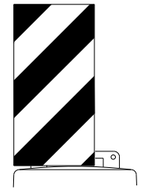


DETECTABLE PEDESTRIAN BARRICADES

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. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
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 (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 should 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 CW1-8, 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 or Type B. 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.

SHEET 8 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				LAS MILPAS
4-03 8-14	DIST	COUNTY		SHEET NO.
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7-13				

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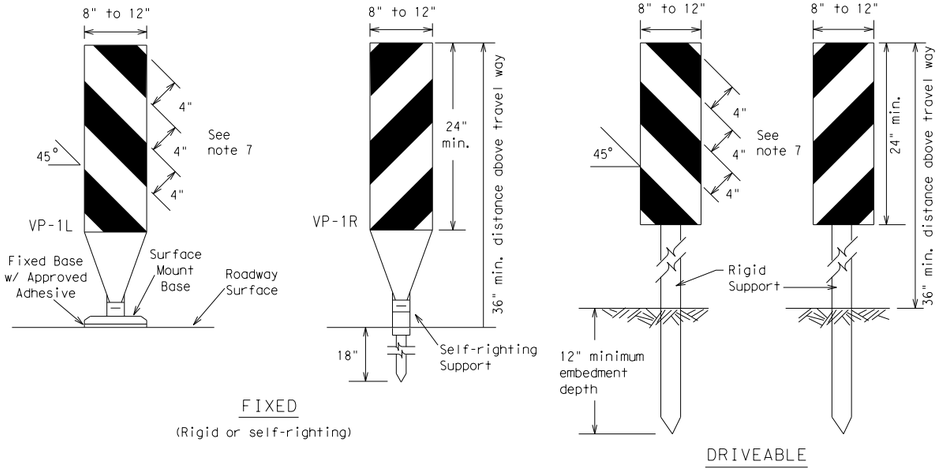
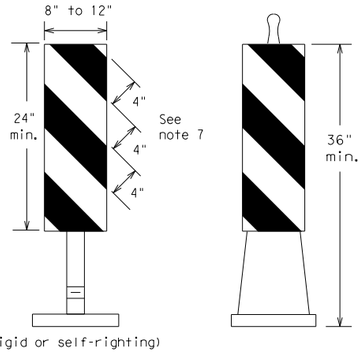


FIXED

(Rigid or self-righting)

DRIVEABLE

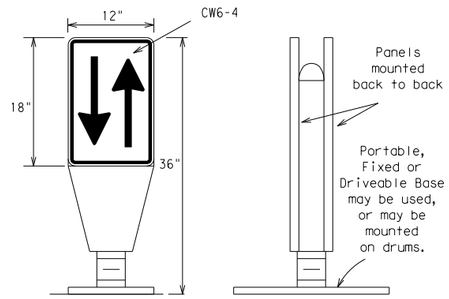


(Rigid or self-righting)

PORTABLE

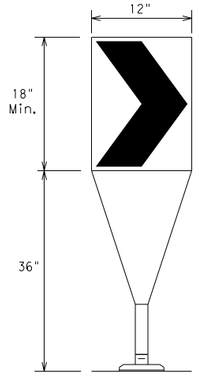
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use 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 or Type B 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)



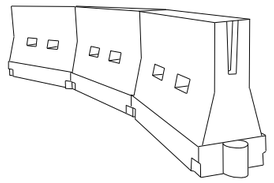
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

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.



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). Place reflective sheeting 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 Manual for Assessing Safety Hardware (MASH) 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

Posted Speed	Formula	Minimum Desirable Taper Lengths ✻✻			Suggested Maximum Spacing of Channelizing Devices	
		10′ Offset	11′ Offset	12′ Offset	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

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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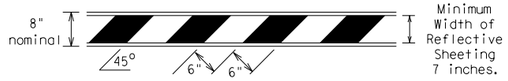
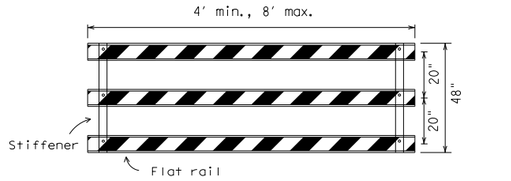
TYPE 3 BARRICADES

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 or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



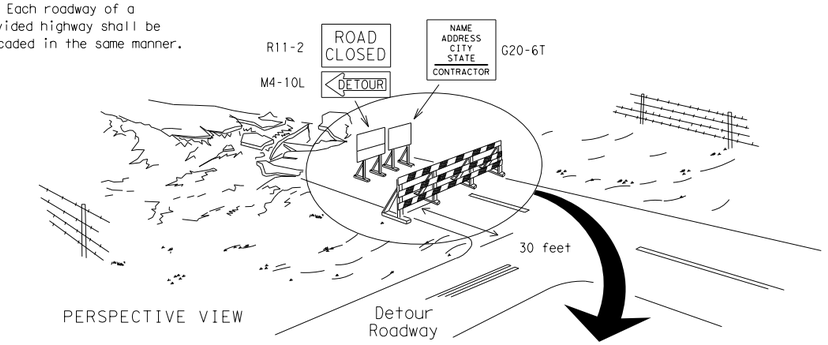
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

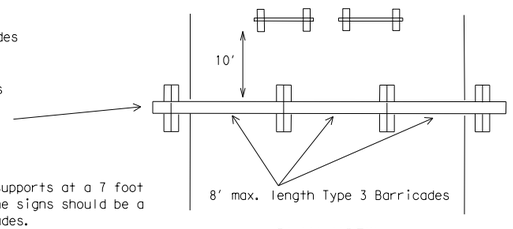
Each roadway of a divided highway shall be barricaded in the same manner.



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.

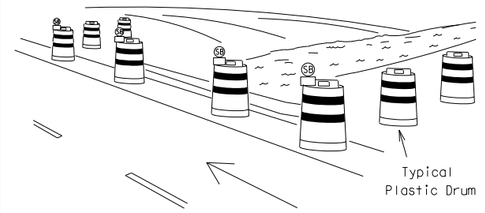
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

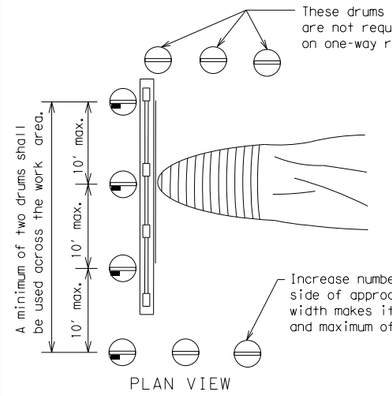
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

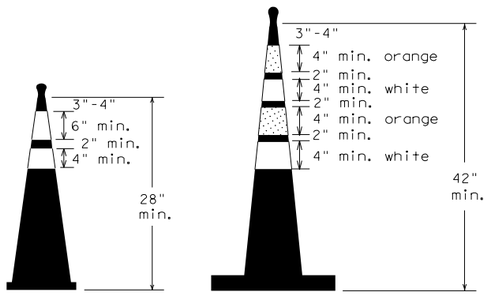
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder 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

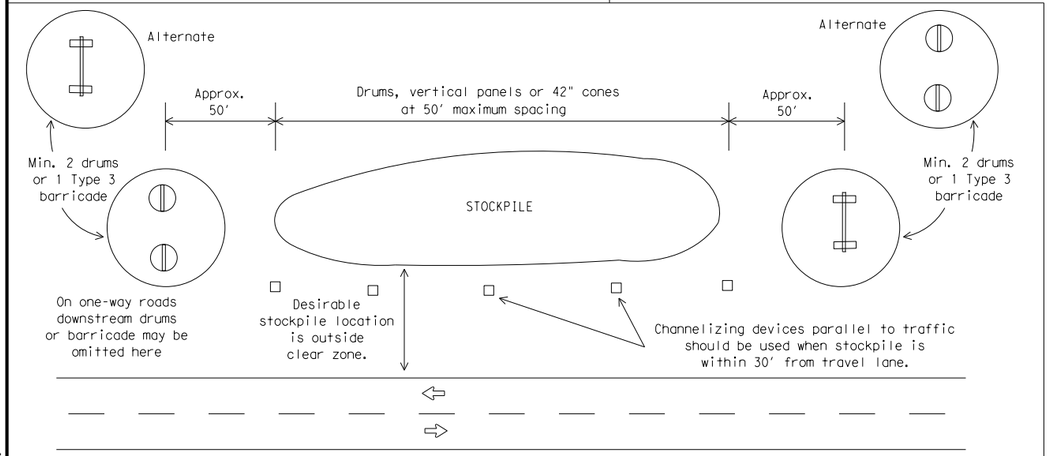
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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 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 or Type B.
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

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				LAS MILPAS
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	PHARR	HIDALGO		19

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DATE:
FILE:

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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.

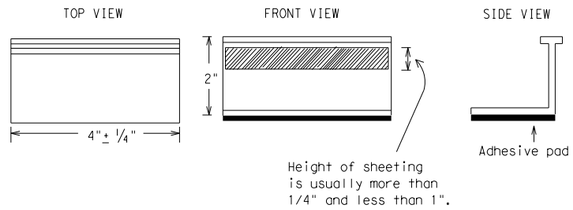
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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).

SHEET 11 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-98 9-07 5-21; 1-02 7-13; 11-02 8-14				LAS MILPAS
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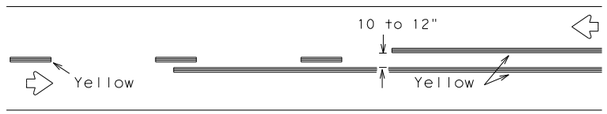
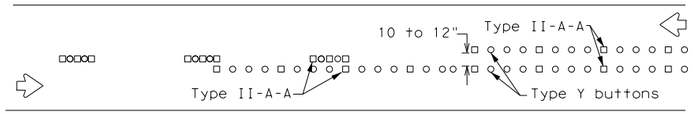
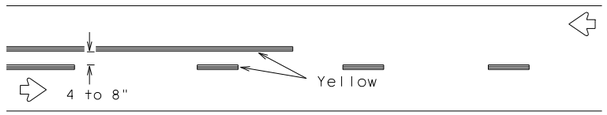
PAVEMENT MARKING PATTERNS



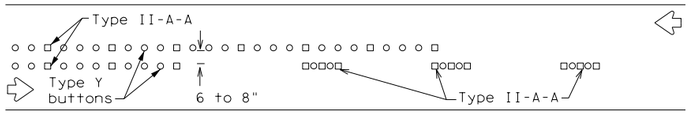
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



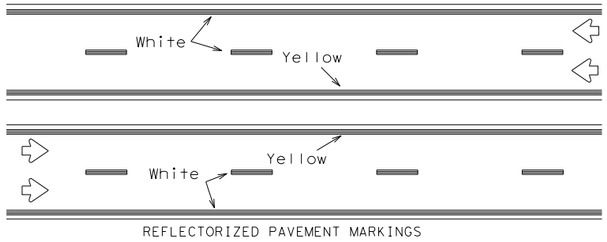
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



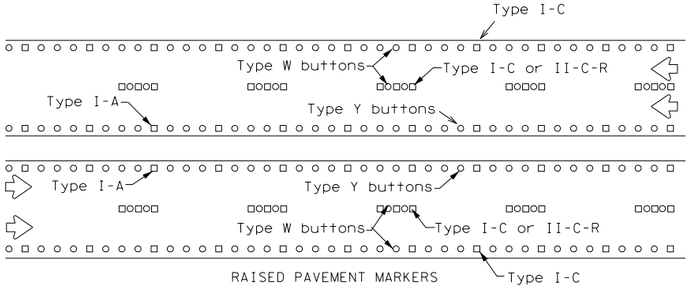
RAISED PAVEMENT MARKERS - PATTERN B

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



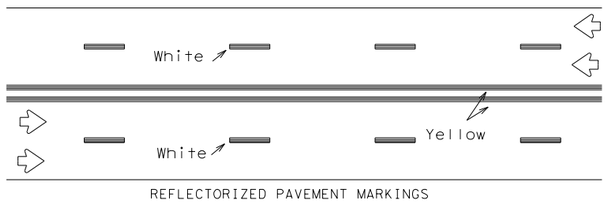
REFLECTORIZED PAVEMENT MARKINGS



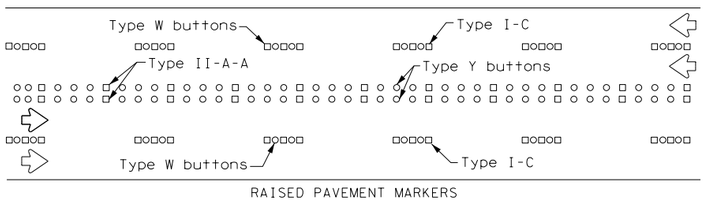
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



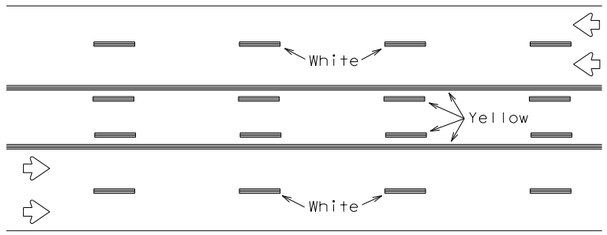
REFLECTORIZED PAVEMENT MARKINGS



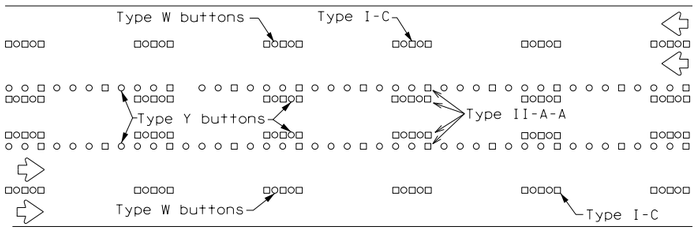
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

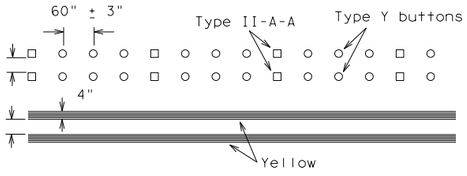
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

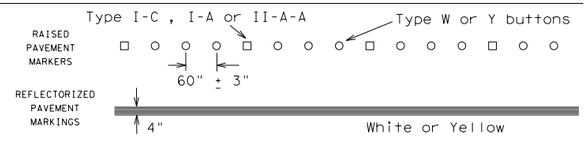
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

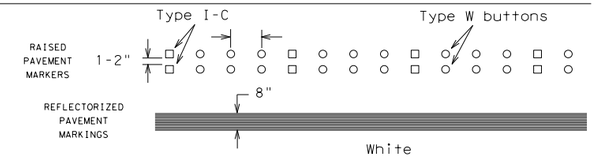


EDGE LINE OR SINGLE NO-PASSING LINE



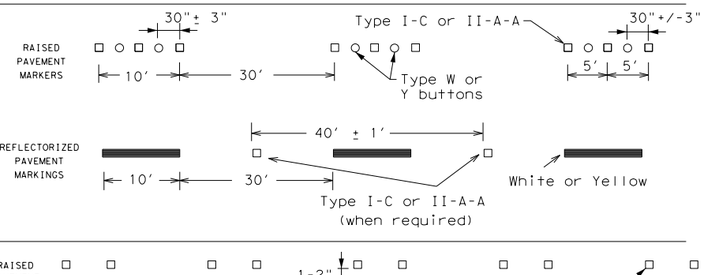
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

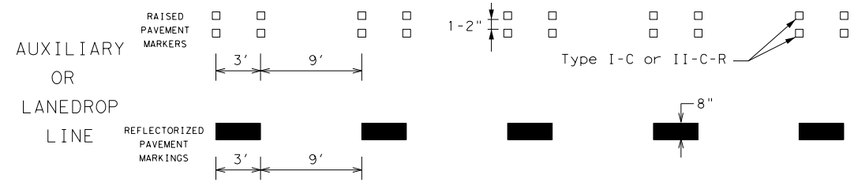


BROKEN LINES

CENTER LINE OR LANE LINE

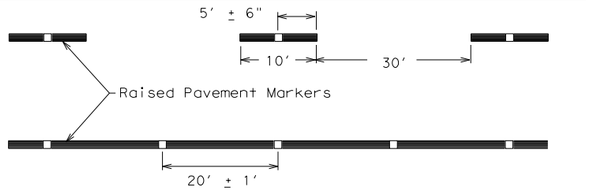


AUXILIARY OR LANEDROP LINE



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 Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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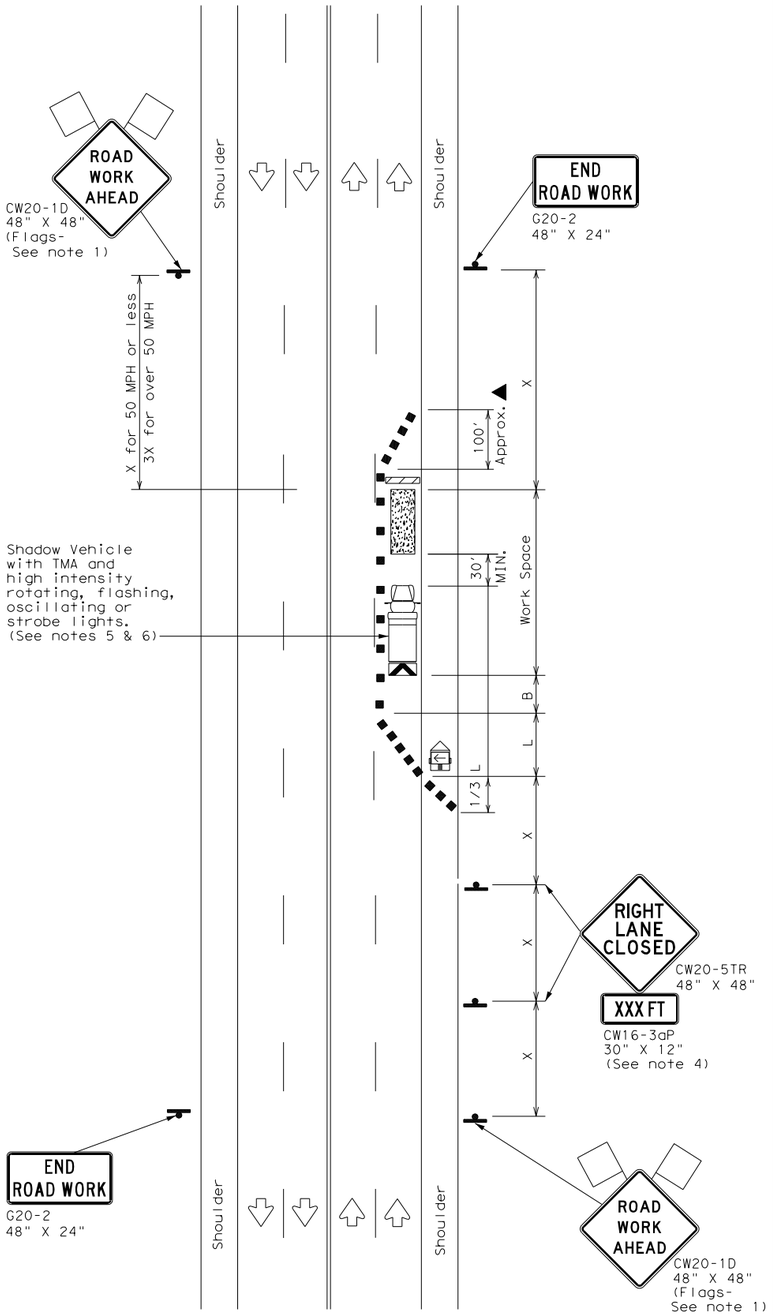
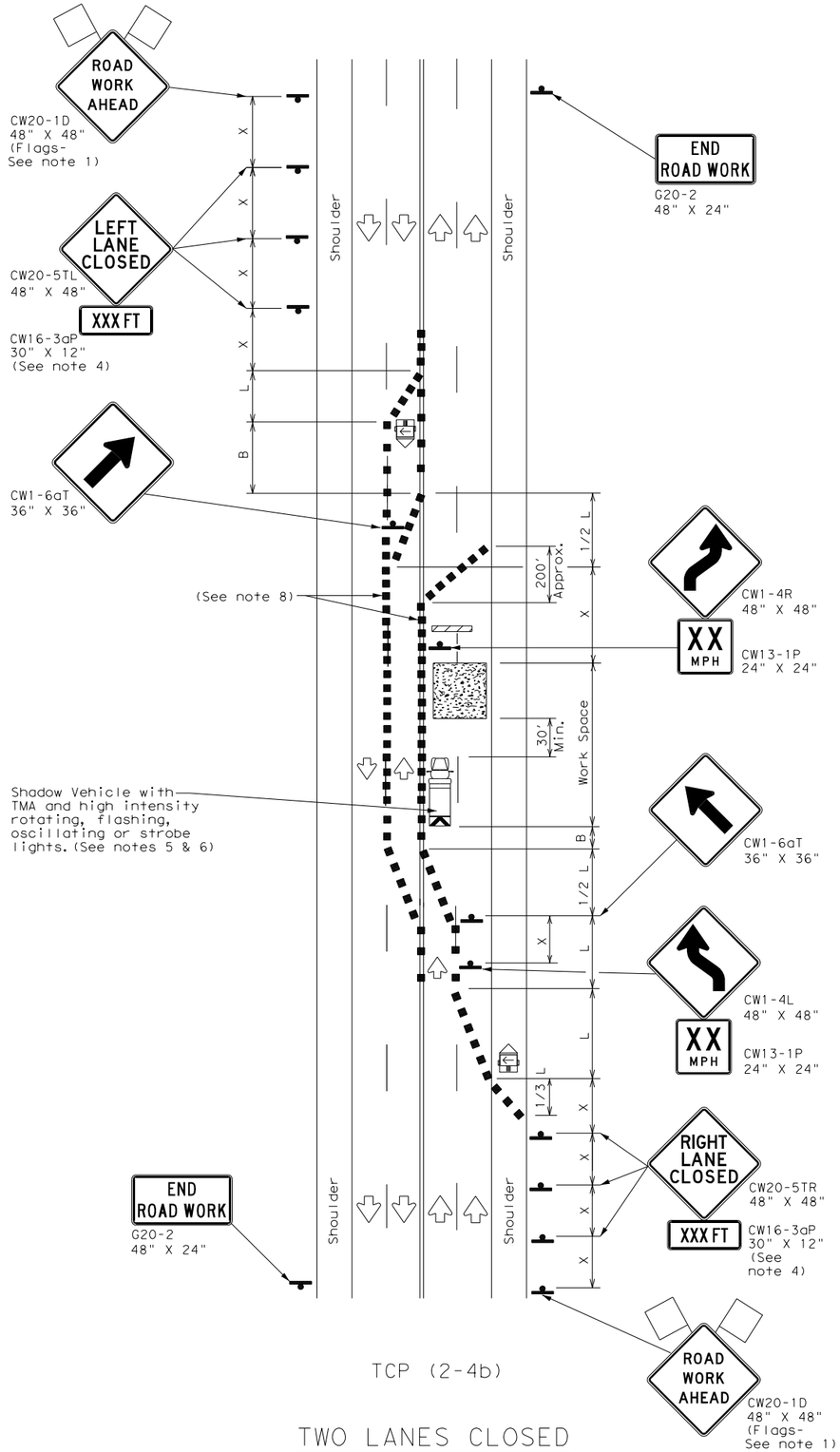


TCP (2-4a)

ONE LANE CLOSED



TCP (2-4b)

TWO LANES CLOSED

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"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* 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 downstream taper is optional. When used, it should be 100 feet minimum length per lane.
4. For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
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 in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-4a)

7. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED"signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-4b)

8. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(2-4)-18

FILE: tcp2-4-18.dgn	DN:	CK:	DW:	CK:
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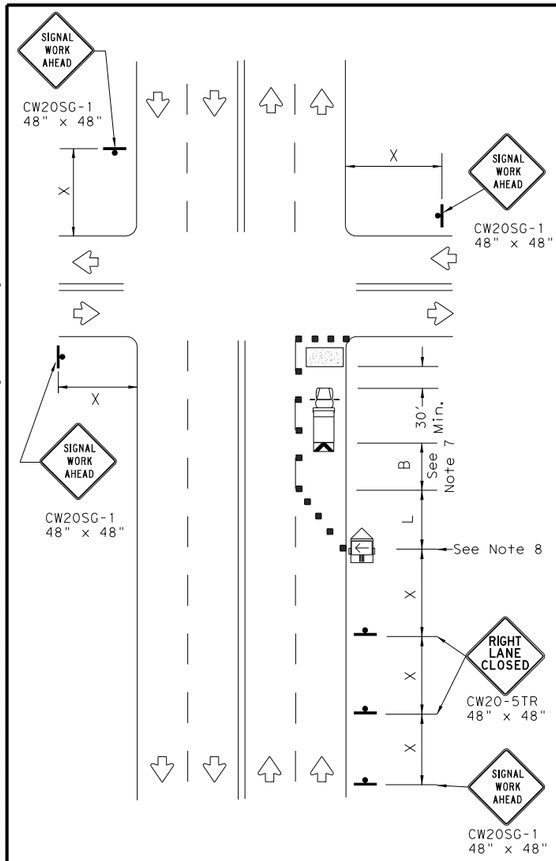
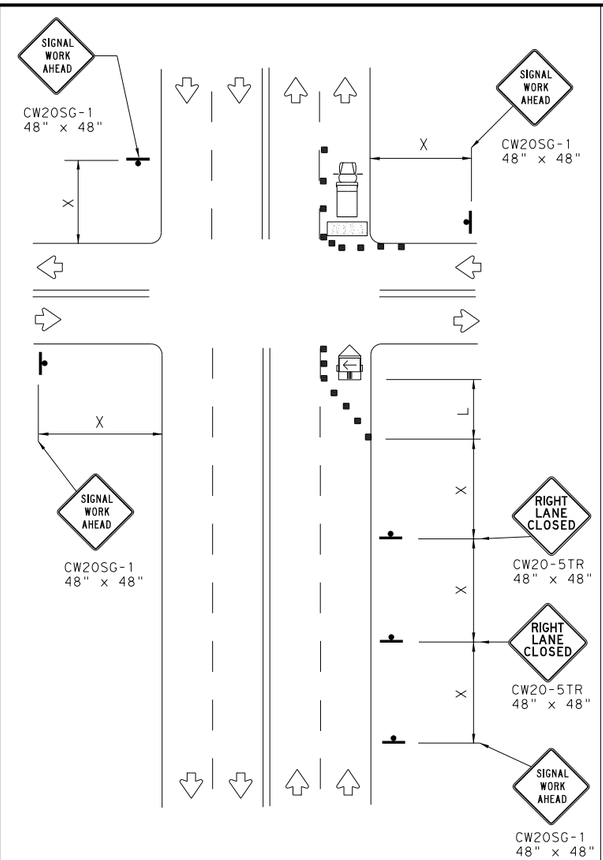


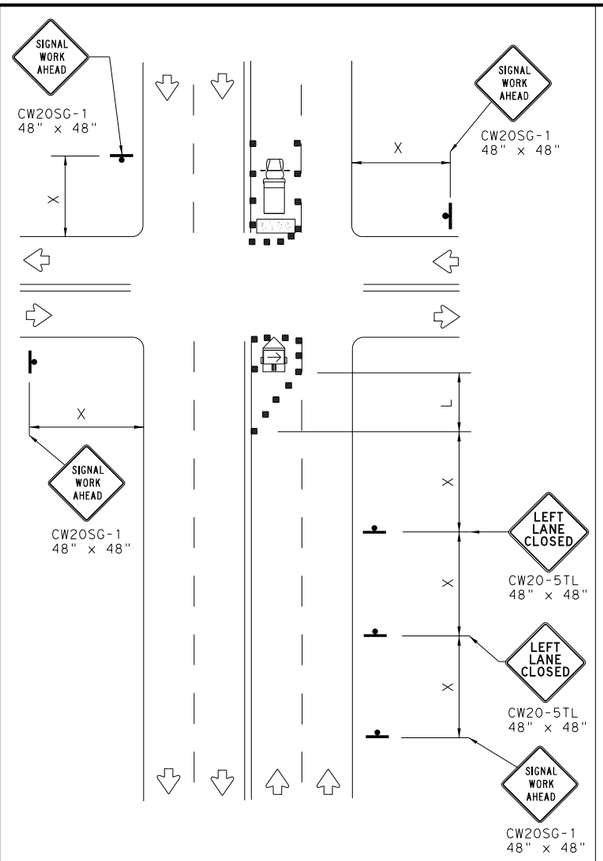
NEAR SIDE LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE RIGHT LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE LEFT LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY

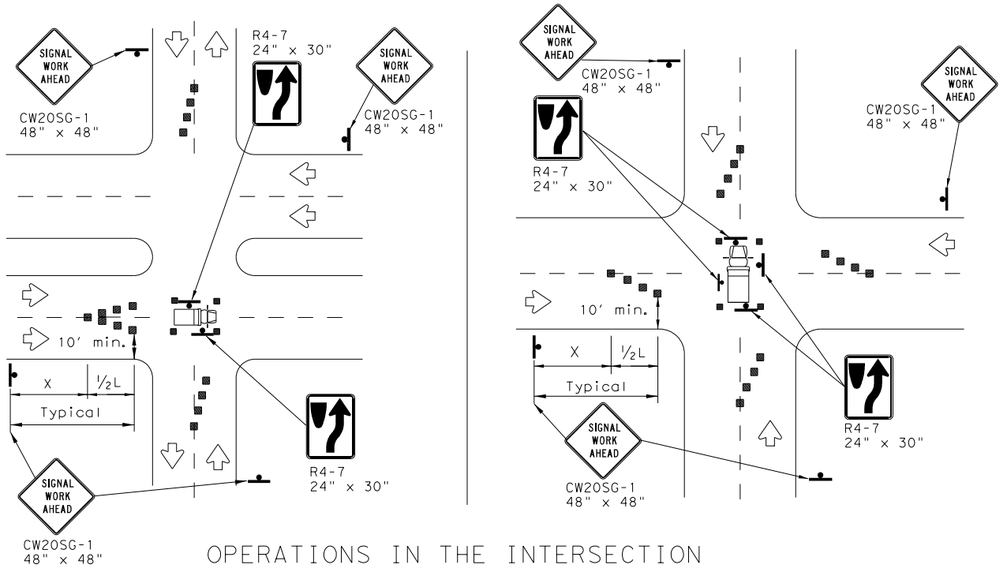
LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

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"
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.



OPERATIONS IN THE INTERSECTION

SHORT DURATION

GENERAL NOTES

1. The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
4. Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
5. High level warning devices (flag trees) may be used at corners of the vehicle.
6. When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
7. For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
8. The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
9. Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.

SHEET 1 OF 2

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ(BTS-1)-13

FILE: wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
2-98 10-99 7-13	DIST	COUNTY		SHEET NO.
4-98 3-03	PHR	HIDALGO		23

114

DATE:
FILE:

DISCLAIMER:
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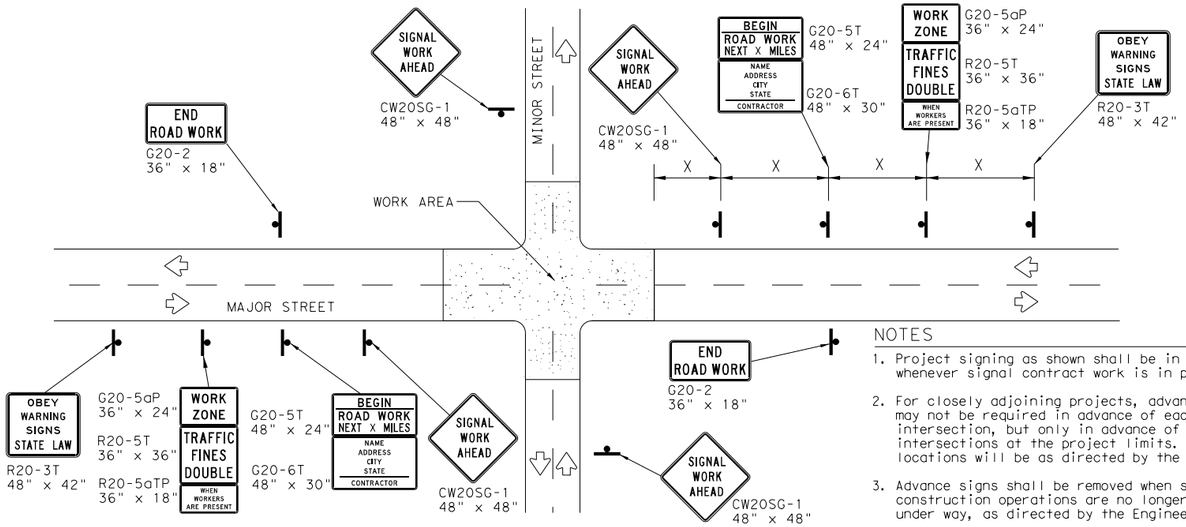


TYPICAL ADVANCE SIGNAL PROJECT SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

NOTES

1. Project signing as shown shall be in place whenever signal contract work is in progress.
2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
4. Warning sign spacing shown is typical for both directions.
5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. 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".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. 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. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

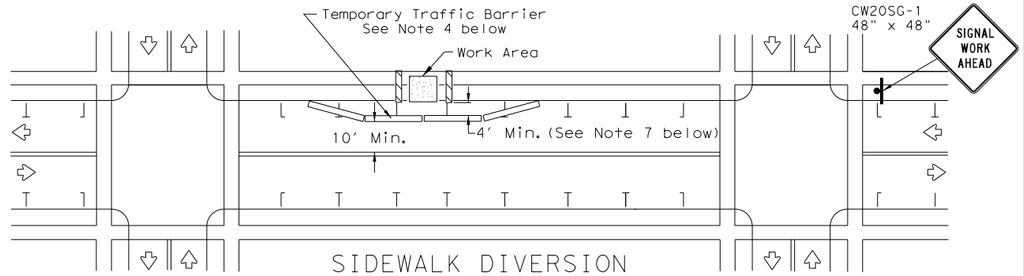
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support 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 fastners. 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.

LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

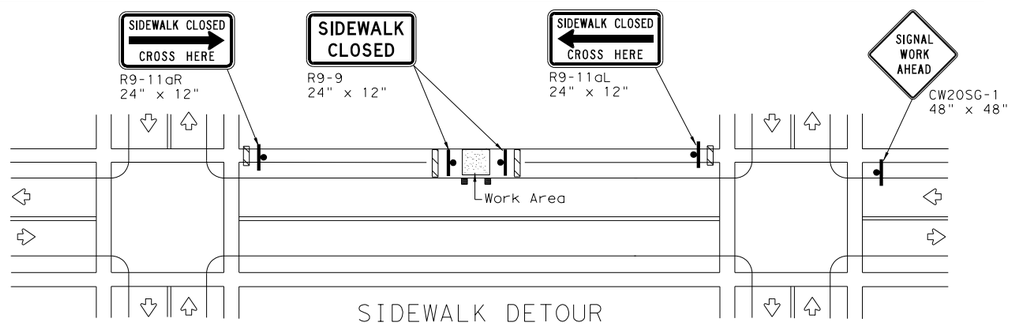
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

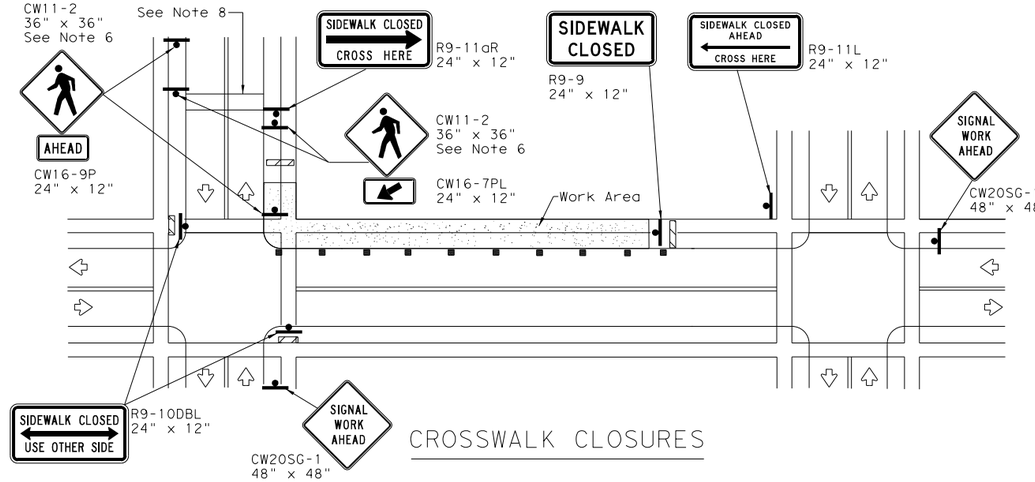
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ(BTS-2)-13

FILE:	wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS		-	-	-	MILPAS
2-98 10-99 7-13		DIST	COUNTY		SHEET NO.
4-98 3-03		PHR	HIDALGO		24

DATE:
FILE:

100% SUBMITTAL

ESTIMATE SUMMARY

HIDALGO COUNTY																		
						LAS MILPAS RD AT McCOLL RD		LAS MILPAS RD AT 10TH ST		ALT	ITEM-CODE			DESCRIPTION	UNIT	TOTAL	
EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL		ITEM NO.	DESC CODE	SP NO.			EST.	FINAL
						26.2		0.0			416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	26.2	
						0.0		87.6			416	6034		DRILL SHAFT (TRF SIG POLE) (48 IN)	LF	87.6	
						0.0		1.0			500	6001		MOBILIZATION	LS	1.0	
						8.0		326.0			618	6033		CONDT (PVC) (SCHD 40) (4")	LF	334.0	
						0.0		222.0			618	6034		CONDT (PVC) (SCHD 40) (4") (BORE)	LF	222.0	
						10.0		596.0			620	6007		ELEC CONDR (NO. 8) BARE	LF	606.0	
						0.0		13.0			620	6009		ELEC CONDR (NO. 6) BARE	LF	13.0	
						12.0		26.0			620	6010		ELEC CONDR (NO. 6) INSULATED	LF	38.0	
						228.0		717.0			621	6005		TRAY CABLE (4 CONDR) (12 AWG)	LF	945.0	
						0.0		6.0			624	6002		GROUND BOX TY A (122311) W/APRON	EA	6.0	
						0.0		1.0			624	6010		GROUND BOX TY D (162922) W/APRON	EA	1.0	
						155.0		0.0			625	6003		ZINC-COAT STL WIRE STRAND (3/8")	LF	155.0	
						1.0		1.0			628	6301		ELC SRV TY T 120/240 000 (NS) GS (L) TS (O)	EA	2.0	
						1.0		0.0			680	6001		INSTALL HWY TRF SIG (FLASH BEACON)	EA	1.0	
						0.0		1.0			680	6002		INSTALL HWY TRF SIG (ISOLATED)	EA	1.0	
						0.0		1.0			*			SIGNAL CONTROLLER CONC. FOUNDATION	CY	1.0	
						0.0		1.0			*			CONTROLLER, FULL TRAFFIC ACTUATED	EA	1.0	
						2.0		4.0			*			PHOTOELECTRIC CELL	EA	6.0	
						2.0		4.0			*			ROADWAY LIGHT ON POLE (130 WATT) (LED)	EA	6.0	
						2.0		6.0			*			GROUND ROD 5/8" X 10'	EA	8.0	
						0.0		4.0			*			SIGN, "LEFT TURN YIELD ON FLASHING YELLOW ARROW" R10-17T (30"x30")	EA	4.0	
						0.0		4.0			*			SIGN, STREET NAME SIGN	EA	4.0	
						0.0		1.0			680	6004		REMOVING TRAFFIC SIGNALS (FLASHING BEACON)	EA	1.0	
						0.0		8.0			682	6001		VEH SIG SEC (12")LED(GRN)	EA	8.0	
						0.0		4.0			682	6002		VEH SIG SEC (12 IN) LED (GRN ARW)	EA	4.0	
						4.0		8.0			682	6003		VEH SIG SEC (12 IN) LED (YEL)	EA	12.0	
						0.0		8.0			682	6004		VEH SIG SEC (12 IN) LED (YEL ARW)	EA	8.0	
						4.0		8.0			682	6005		VEH SIG SEC (12 IN) LED (RED)	EA	12.0	
						0.0		4.0			682	6006		VEH SIG SEC (12 IN) LED (RED ARW)	EA	4.0	
						0.0		8.0			682	6023		BACK PLATE (12 IN) (3 SEC)	EA	8.0	
						0.0		4.0			682	6024		BACK PLATE (12 IN) (4 SEC)	EA	4.0	
						112.0		925.0			684	6010		TRF SIG CBL (TY A) (12 AWG) (5 CONDR)	LF	1037.0	
						0.0		987.0			684	6012		TRF SIG CBL (TY A) (12 AWG) (7 CONDR)	LF	987.0	
						2.0		0.0			686	6007		INS TRF SIG PL AM (S)STR(TY B)	EA	2.0	
						0.0		4.0			686	6059		INS TRF SIG PL AM (S) 1 ARM (55') LUM	EA	4.0	
						0.0		1.0			6306	6001		VIVDS PROSR SYS	EA	1.0	
						0.0		4.0			6306	6003		VIVDS CAM ASSY VAR LNS	EA	4.0	
						0.0		927.0			6306	6007		VIVDS CABLING	LF	927.0	
						0.0		1.0			6061	6001		GPS COMMUNICATIONS UNIT	EA	1.0	

*** FOR CONTRACTORS INFORMATION ONLY. THIS ITEM IS SUBSIDIARY TO ITEM 680.**

ESTIMATE & QUANTITY SHEET

COUNTY	PROJECT NO.	SHEET NO.
HIDALGO		25

100% SUBMITTAL

EXIST R.O.W.

10TH ST
(SH 336)

LAS MILPAS RD

ONLY

ONLY

EXIST. FLASHING
BEACON ASSEMBLY
(TO BE REMOVED)

FY

FR

EXIST. STEEL
STRAIN POLE
(TO BE REMOVED)

EXIST R.O.W.

LAS MILPAS RD

EXIST. STOP SIGN
(TO BE REMOVED)

EXIST R.O.W.

EXIST. STEEL
STRAIN POLE
(TO BE REMOVED)

EXIST. GAS LINE

EXIST. FIBER LINE

EXIST R.O.W.

10TH ST
(SH 336)

CAUTION
UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR WILL LOCATE ALL UTILITIES PRIOR TO DRILLING AND BORING. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGED UTILITIES.

EXIST. POWER SOURCE
(TO REMAIN)

EXIST R.O.W.

LAS MILPAS RD

EXIST. SERVICE POLE
(TO BE RELOCATED)

EXIST. FIRE HYDRANT
(TO BE RELOCATED)

EXIST R.O.W.

EXIST. GAS LINE

LEGEND

- FOUND 1/2" IRON ROD
- WATER METER
- WV WATER VALVE
- FIRE HYDRANT
- TREE
- SHRUB
- POWER POLE
- SIGN
- TYPE "A" INLET
- GRATE INLET
- TELEPHONE PEDESTAL
- GUY WIRE
- GAS METER
- -G- GAS LINE
- -OH- OVERHEAD ELECTRICAL LINE
- -S- SANITARY SEWER LINE
- -X- EXIST. FENCE
- -E/T- UNDERGROUND ELECTRIC
- -W- WATER LINE
- -FM- FORCE MAIN
- HANDICAP RAMP
- S SANITARY MANHOLE
- T TELEPHONE MANHOLE
- TRAFFIC FLOW
- MAIL BOX

0 15 30

STATE OF TEXAS
ALBERTO J. ALDANA
79962
REGISTERED PROFESSIONAL ENGINEER

Albert J. Aldana 10/2/2019
Date

HIDALGO COUNTY PCT. NO. 2

Texas Department of Transportation
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ALDANA ENGINEERING & TRAFFIC DESIGN, LLC
ENGINEERING CONSULTANTS
720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
info@aetdengineers.com
Texas Registered Engineering Firm F-9769

LAS MILPAS RD AT 10TH ST
EXISTING CONDITIONS
(HCDA 07-12-22

SCALE: 1"=30'	DRAWN BY: AETD	CHECKED BY: AETD	PROJECT NO.: 219284	SHEET NO.: 26

10/2/2019 5:59:21 PM
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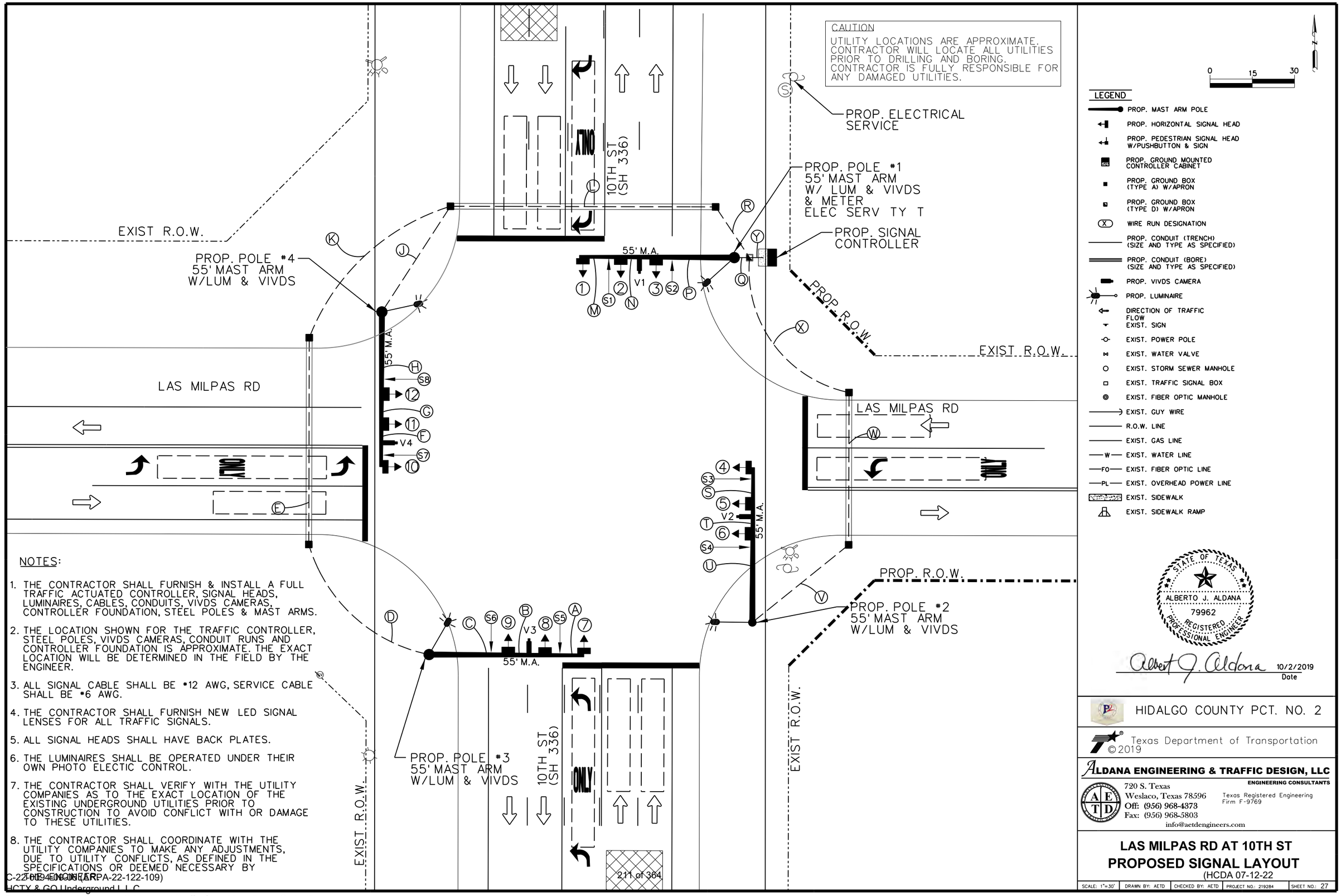

NOTES:

1. THE CONTRACTOR SHALL FURNISH & INSTALL A FULL TRAFFIC ACTUATED CONTROLLER, SIGNAL HEADS, LUMINAIRES, CABLES, CONDUITS, VIVDS CAMERAS, CONTROLLER FOUNDATION, STEEL POLES & MAST ARMS.
2. THE LOCATION SHOWN FOR THE TRAFFIC CONTROLLER, STEEL POLES, VIVDS CAMERAS, CONDUIT RUNS AND CONTROLLER FOUNDATION IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. ALL SIGNAL CABLE SHALL BE #12 AWG, SERVICE CABLE SHALL BE #6 AWG.
4. THE CONTRACTOR SHALL FURNISH NEW LED SIGNAL LENSES FOR ALL TRAFFIC SIGNALS.
5. ALL SIGNAL HEADS SHALL HAVE BACK PLATES.
6. THE LUMINAIRES SHALL BE OPERATED UNDER THEIR OWN PHOTO ELECTIC CONTROL.
7. THE CONTRACTOR SHALL VERIFY WITH THE UTILITY COMPANIES AS TO THE EXACT LOCATION OF THE EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION TO AVOID CONFLICT WITH OR DAMAGE TO THESE UTILITIES.
8. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO MAKE ANY ADJUSTMENTS, DUE TO UTILITY CONFLICTS, AS DEFINED IN THE SPECIFICATIONS OR DEEMED NECESSARY BY THE ENGINEER.

STATE OF TEXAS
ALBERTO J. ALDANA
79962
REGISTERED
PROFESSIONAL ENGINEER

Albert J. Aldana 10/2/2019
Date

HIDALGO COUNTY PCT. NO. 2

Texas Department of Transportation
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ALDANA ENGINEERING & TRAFFIC DESIGN, LLC
ENGINEERING CONSULTANTS
720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
info@aetdengineers.com
Texas Registered Engineering Firm F-9769

LAS MILPAS RD AT 10TH ST
PROPOSED SIGNAL LAYOUT
(HCDA 07-12-22

SCALE: 1"=30'	DRAWN BY: AETD	CHECKED BY: AETD	PROJECT NO.: 219284	SHEET NO.: 27

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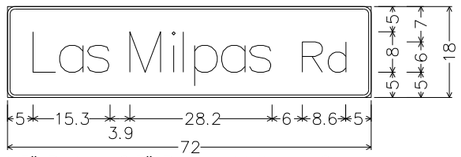
SIGN DETAILS

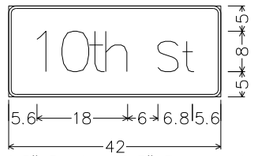
R10-17T
30" X 30"

(S1)(S3)(S5)(S7)



1.5" Radius, 0.5" Border, White on Green;
[Las Milpas] ClearviewHwy-3-W;
[Rd] ClearviewHwy-3-W;

(S2)(S6)



1.5" Radius, 0.5" Border, White on Green;
[10th] ClearviewHwy-3-W;
[St] ClearviewHwy-3-W;

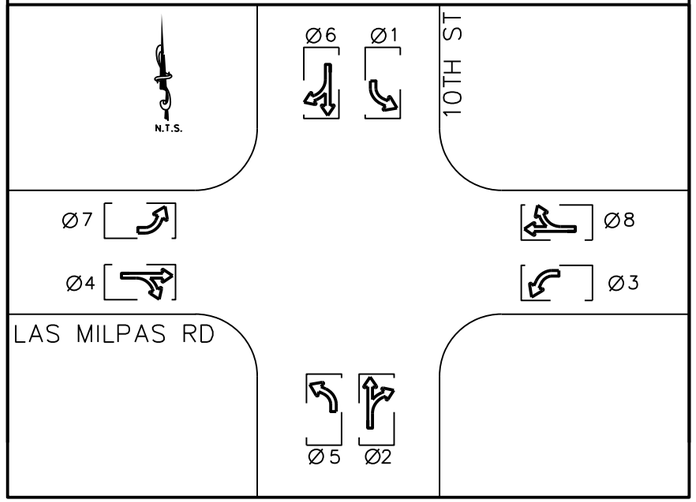
(S4)(S8)

ELECTRICAL SCHEDULE

ITEM	TOTAL QTY	ADD QTY	RUN NUMBER / RUN LENGTH	A 14	B 13	C 28	D 61	E 74	F 15	G 11	H 29	J 45	K 71	L 94	M 14	N 13	P 28	Q 6	R 22	S 13	T 11	U 32	V 44	W 54	X 65	Y 6
POWER	26	2	1/C-#6 INSULATED															2								2
GROUND	13	1	1/C-#6 BARE															1								1
	596	54	1/C-#8 BARE				1	1				1	1	1				1	1				1	1	1	1
PEDESTRIAN HEADS	0		7/C-#12																							
SIGNAL HEADS	925	84	5/C-#12		1	1	1	1		1	1	1	1	2		1	1	1	2		1	1	1	1	1	4
	987	90	7/C-#12	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	4
VIVDS	927	84	COAXIAL (SIAM ESE) CBL		1	1	1	1	1	1	1	1	1	2			1	1	2		1	1	1	1	1	4
LUMINAIRE	717	65	4/C-#12 TRAY CBL				1	1				1	1	2				1	2				1	1	1	
CONDUIT	0		2" PVC																							
	326		4" PVC				1					1	1					1	1				1		1	2
	222		4" PVC BORE					1						1										1		

* INCLUDES QUANTITY ON SIGNAL POLE AND/OR LUMINAIRE ARMS FOR FUTURE USE

PHASING



SIGNAL HEAD SCHEDULE

12" LED LENS (R Y G) SIGNALS (2)(3)(5)(6)(8)(9)(11)(12)

12" LED LENS (R SY FY G) SIGNALS (1)(4)(7)(10)

NOTE: BACK PLATES SHALL BE INSTALLED FOR ALL SIGNAL HEADS. ALL SIGNAL LENSES SHALL BE LED.

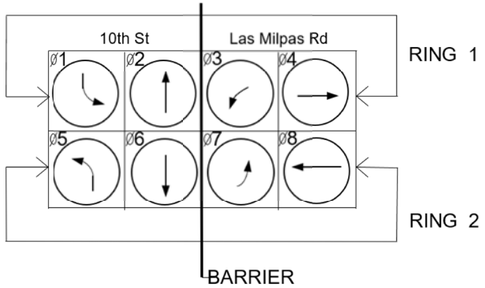
VIVDS DETECTOR SCHEDULE

CAMERA	PHASE
V1	Ø2 & Ø5
V2	Ø4 & Ø7
V3	Ø6 & Ø1
V4	Ø8 & Ø3

TRAFFIC SIGNAL POLES

POLE NO.	SIGNAL POLE DESIGNATION	MAST ARM DESIGN	FOUNDATION TYPE/DEPTH
1	LMA 55L-100	55 III-100	48"-A / 21.9'
2	LMA 55L-100	55 III-100	48"-A / 21.9'
3	LMA 55L-100	55 III-100	48"-A / 21.9'
4	LMA 55L-100	55 III-100	48"-A / 21.9'

PHASING DIAGRAM



TIMING CHART

Phase	1	2	3	4	5	6	7	8
Street	10th Street		Las Milpas		10th Street		Las Milpas	
Direction	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB
Minimum green	8	20	8	20	8	20	8	20
Extension	2	2		2		2		2
Maximum 1	8	20	8	20	8	20	8	20
Maximum 2								
Yellow	4	4		4	4	4		4
All Red	1	1	1	1	1	1	1	1
Walk								
Flash Don't Walk								
Recall		MAX				MAX		
Memory								
Dual Entry		Y				Y		

ELECTRICAL SERVICE DATA

Service Pole No.	Service Pole Description (See ED (4)(5)-14)	Service Conduit Size	Service Conductors No./Size XHHW	Safety Switch Amps	Ckt. Bkr. Pole/Amp	Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating	Circuit No.	Branch Ckt. Bkr. Pole/Amps	KVA Load
1	ELC SRV TY T 120/240 000 (NS) GS (L) TS (O) (PAY ITEM 628-6301)	1 1/4"	3/#4	N/A	N/A	N/A	00	TS	1P/30	5.5
								LUM	2P/20	

(L) = LUMINAIRE, (O) = TRAFFIC SIGNAL

STATE OF TEXAS
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PROFESSIONAL ENGINEER

Albert J. Aldana 10/2/2019
Date

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720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
info@aetdengineers.com
Texas Registered Engineering Firm F-9769

LAS MILPAS RD AT 10TH ST
ELECTRICAL SCHEDULE
(HCDA 07-12-22

SCALE: 1"=30'	DRAWN BY: AETD	CHECKED BY: AETD	PROJECT NO.: 219284	SHEET NO.: 28

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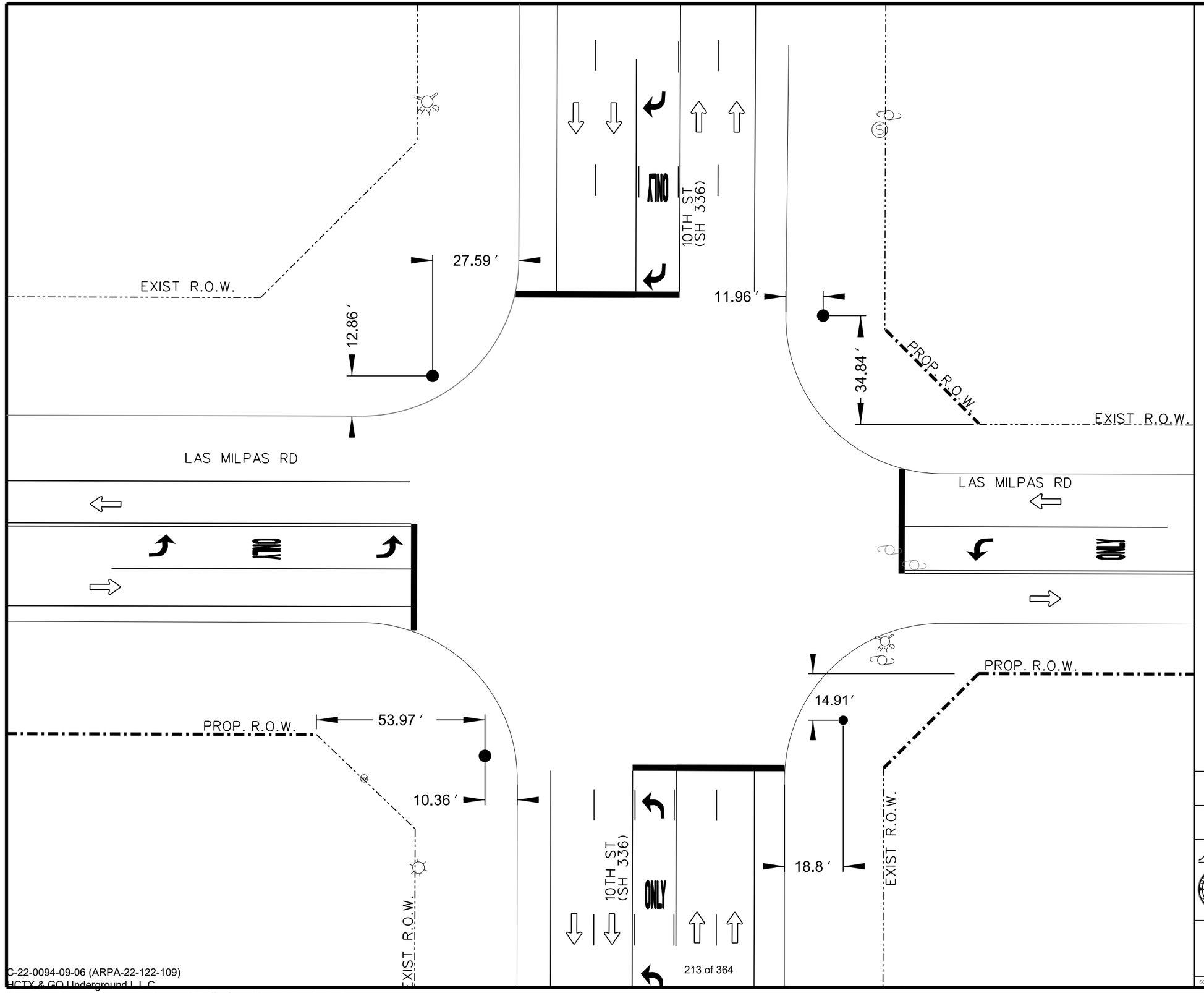

0 15 30

LEGEND

- PROP. MAST ARM POLE
- PROP. HORIZONTAL SIGNAL HEAD
- PROP. PEDESTRIAN SIGNAL HEAD W/PUSHBUTTON & SIGN
- PROP. GROUND MOUNTED CONTROLLER CABINET
- PROP. GROUND BOX (TYPE A) W/APRON
- PROP. GROUND BOX (TYPE D) W/APRON
- WIRE RUN DESIGNATION
- PROP. CONDUIT (TRENCH) (SIZE AND TYPE AS SPECIFIED)
- PROP. CONDUIT (BORE) (SIZE AND TYPE AS SPECIFIED)
- PROP. VIVDS CAMERA
- PROP. LUMINAIRE
- DIRECTION OF TRAFFIC FLOW
- EXIST. SIGN
- EXIST. POWER POLE
- EXIST. WATER VALVE
- EXIST. STORM SEWER MANHOLE
- EXIST. TRAFFIC SIGNAL BOX
- EXIST. FIBER OPTIC MANHOLE
- EXIST. GUY WIRE
- R.O.W. LINE
- EXIST. GAS LINE
- W — EXIST. WATER LINE
- FO — EXIST. FIBER OPTIC LINE
- PL — EXIST. OVERHEAD POWER LINE
- EXIST. SIDEWALK
- EXIST. SIDEWALK RAMP

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LAS MILPAS RD AT 10TH ST
SIGNAL POLE DETAILS
(HCDA 07-12-22

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C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

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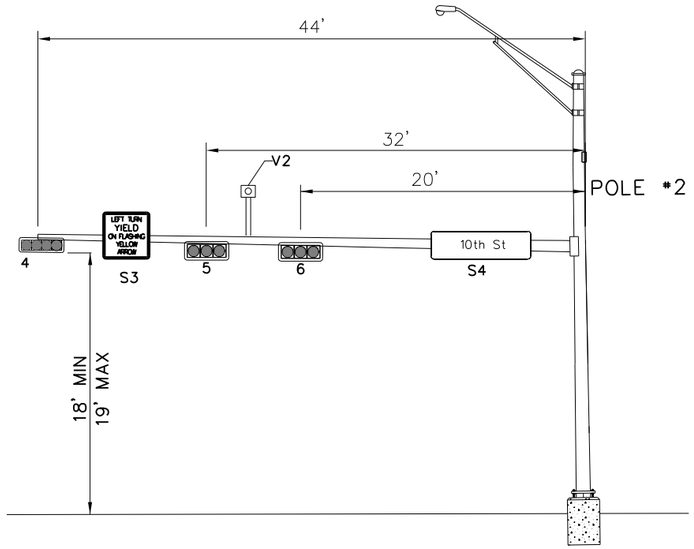
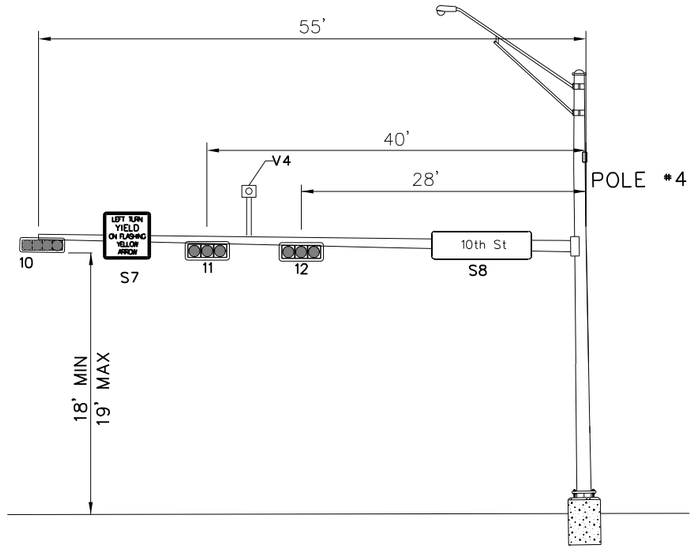


LOOKING EAST ON LAS MILPAS RD

AT 10TH ST

N.T.S.



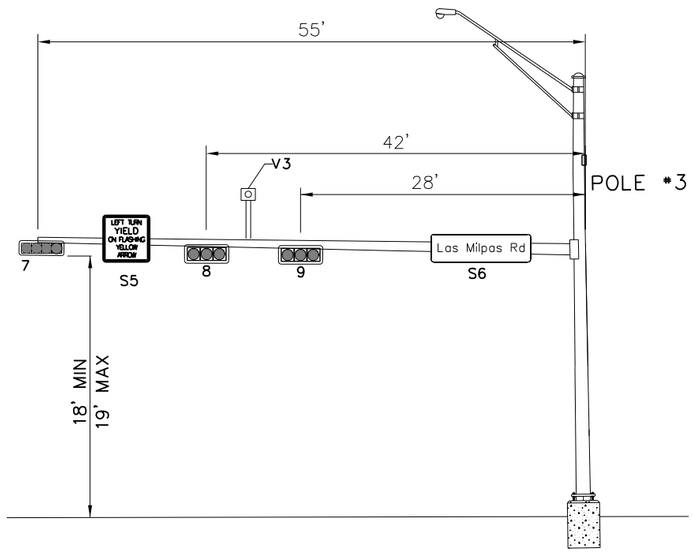
LOOKING WEST ON LAS MILPAS RD

AT 10TH ST

N.T.S.

NOTES:

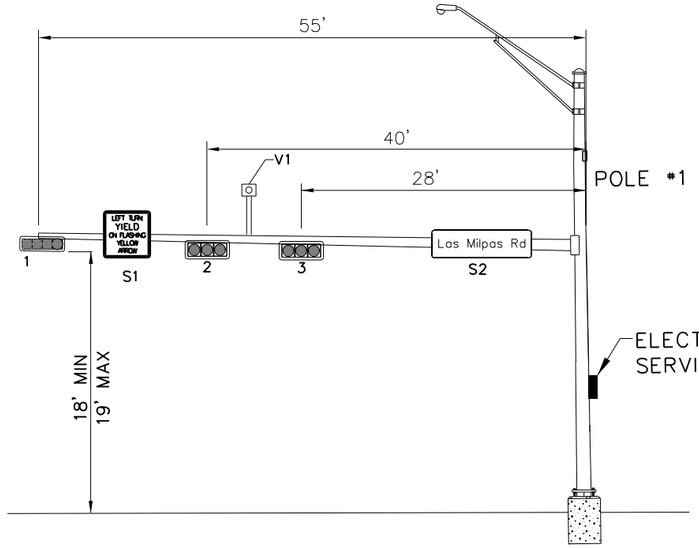
1. HEADS WILL BE CENTERED OVER THE LANES OR AS DIRECTED BY ENGINEER. DISTANCES SHOWN ALONG MAST ARMS ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD AS NEEDED.
2. FOUNDATIONS WILL BE ADJUSTED ON THE FIELD IN ORDER TO MEET CLEARANCE.
3. LOCATION OF MAST ARMS IS APPROXIMATE. ANY CHANGES WILL BE APPROVED BY THE ENGINEER.
4. MAST ARM ATTACHMENT HEIGHT WILL BE CALCULATED BY THE CONTRACTOR IN THE FIELD AND APPROVED BY THE ENGINEER.
5. DAMPING PLATES TO BE INSTALLED ON ARMS 40' OR LONGER.
6. CAMERA LOCATIONS WILL BE INSTALLED AS DIRECTED BY THE ENGINEER.



LOOKING SOUTH ON 10TH ST

AT LAS MILPAS RD

N.T.S.



LOOKING NORTH ON 10TH ST

AT LAS MILPAS RD

N.T.S.

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ENGINEERING CONSULTANTS
720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
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LAS MILPAS RD AT 10TH ST

ELEVATIONS

(HCDA 07-12-22

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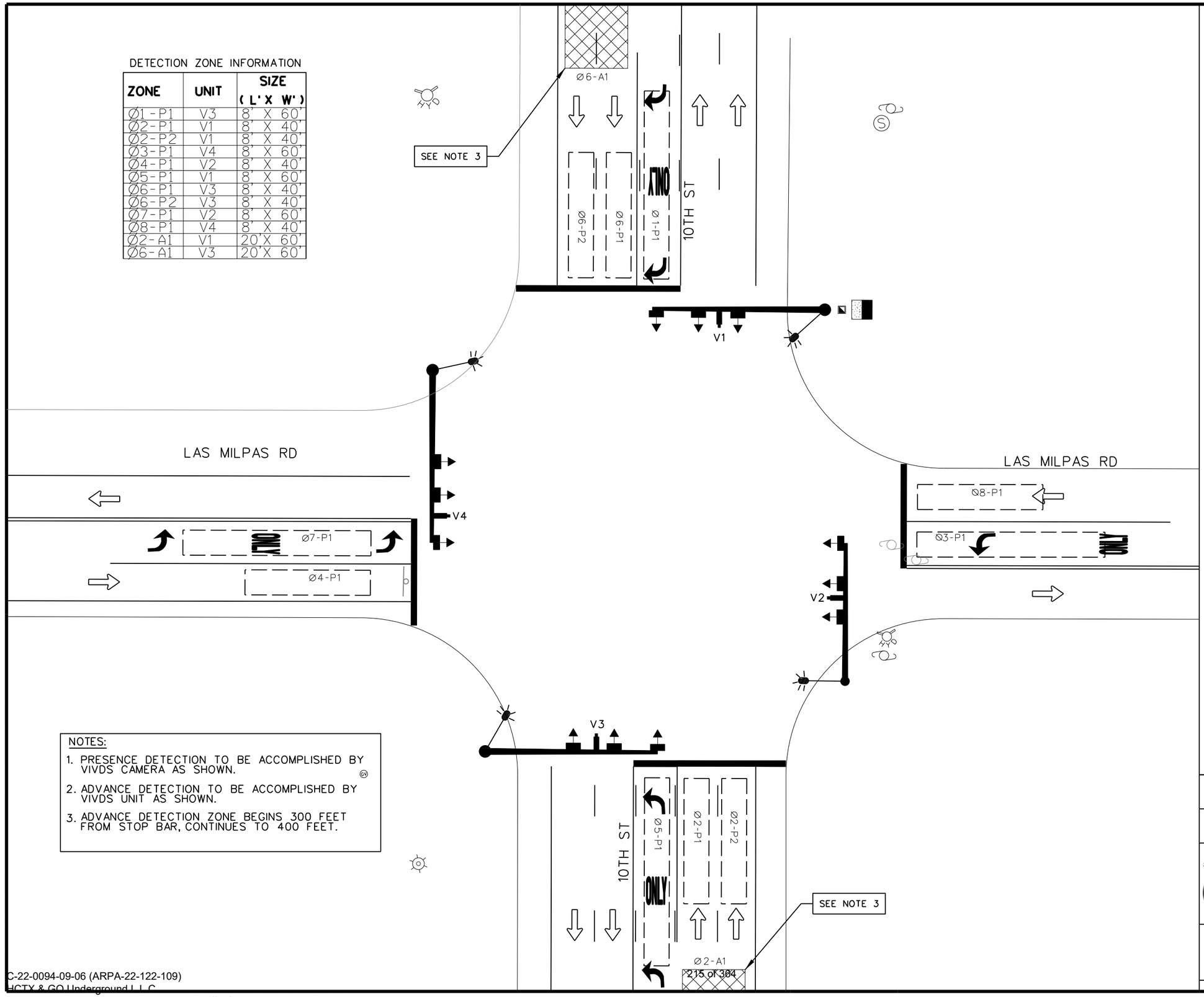
DETECTION ZONE INFORMATION

ZONE	UNIT	SIZE (L' X W')
Ø1-P1	V3	8' X 60'
Ø2-P1	V1	8' X 40'
Ø2-P2	V1	8' X 40'
Ø3-P1	V4	8' X 60'
Ø4-P1	V2	8' X 40'
Ø5-P1	V1	8' X 60'
Ø6-P1	V3	8' X 40'
Ø6-P2	V3	8' X 40'
Ø7-P1	V2	8' X 60'
Ø8-P1	V4	8' X 40'
Ø2-A1	V1	20' X 60'
Ø6-A1	V3	20' X 60'



NOTES:

1. PRESENCE DETECTION TO BE ACCOMPLISHED BY VIVDS CAMERA AS SHOWN.
2. ADVANCE DETECTION TO BE ACCOMPLISHED BY VIVDS UNIT AS SHOWN.
3. ADVANCE DETECTION ZONE BEGINS 300 FEET FROM STOP BAR, CONTINUES TO 400 FEET.

0 15 30

LEGEND

- PROP. MAST ARM POLE
- PROP. HORIZONTAL SIGNAL HEAD
- PROP. VIVDS CAMERA
- PROP. LUMINAIRE
- V1 VIVDS CAMERA DESIGNATION
- DETECTION ZONE (PRESENCE)
- DETECTION ZONE (ADVANCE)
- DIRECTION OF TRAFFIC FLOW

STATE OF TEXAS
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720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
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LAS MILPAS RD AT 10TH ST
PROPOSED VIVDS DETECTION
(HCDA 07-12-22

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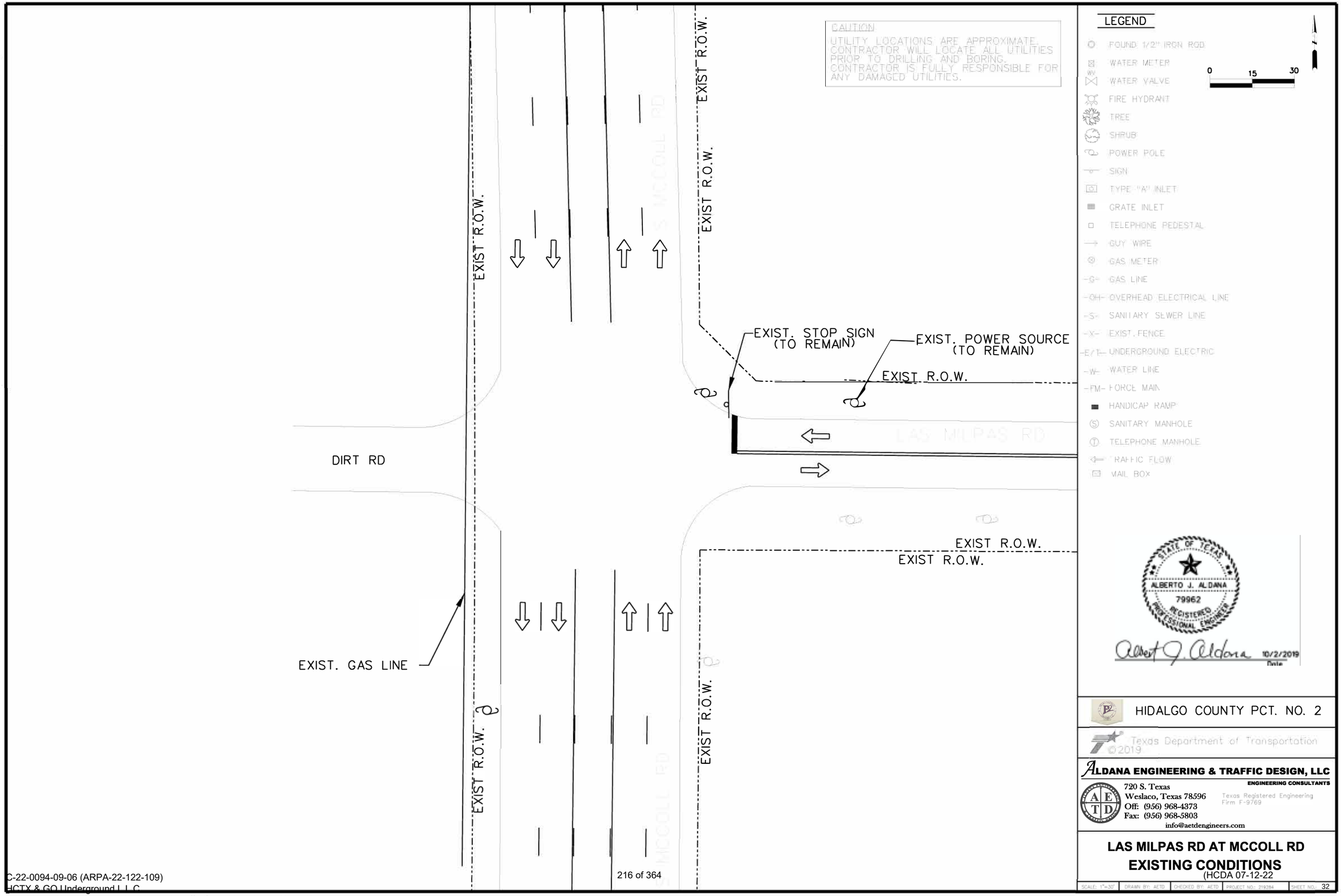

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ENGINEERING CONSULTANTS
720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
info@aetdengineers.com
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LAS MILPAS RD AT MCCOLL RD
EXISTING CONDITIONS
(HCDA 07-12-22

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ELECTRICAL SCHEDULE						
ITEM	TOTAL QTY	ADD QTY	RUN NUMBER / RUN LENGTH	A 65	B 62	C 40
POWER	12	12	1/C-#6 INSULATED			
GROUND	0		1/C-#6 BARE			
	10	10	1/C-#8 BARE			
PEDESTRIAN HEADS	0		7/C-#12			
SIGNAL HEADS	112	10	5/C-#12		1	1
	0		7/C-#12			
VIVDS	0		COAXIAL (SIAM ESE) CBL			
LUMINAIRE	228	21	4/C-#12 TRAY CBL	1	1	2
CONDUIT	0		2" PVC			
	8	8	4" PVC			
	0		4" PVC BORE			

* INCLUDES QUANTITY ON SIGNAL POLE AND/OR LUMINAIRE ARMS FOR FUTURE USE

QUANTITIES SHOWN INCLUDE QUANTITIES IN POLES & SPAN WIRE.

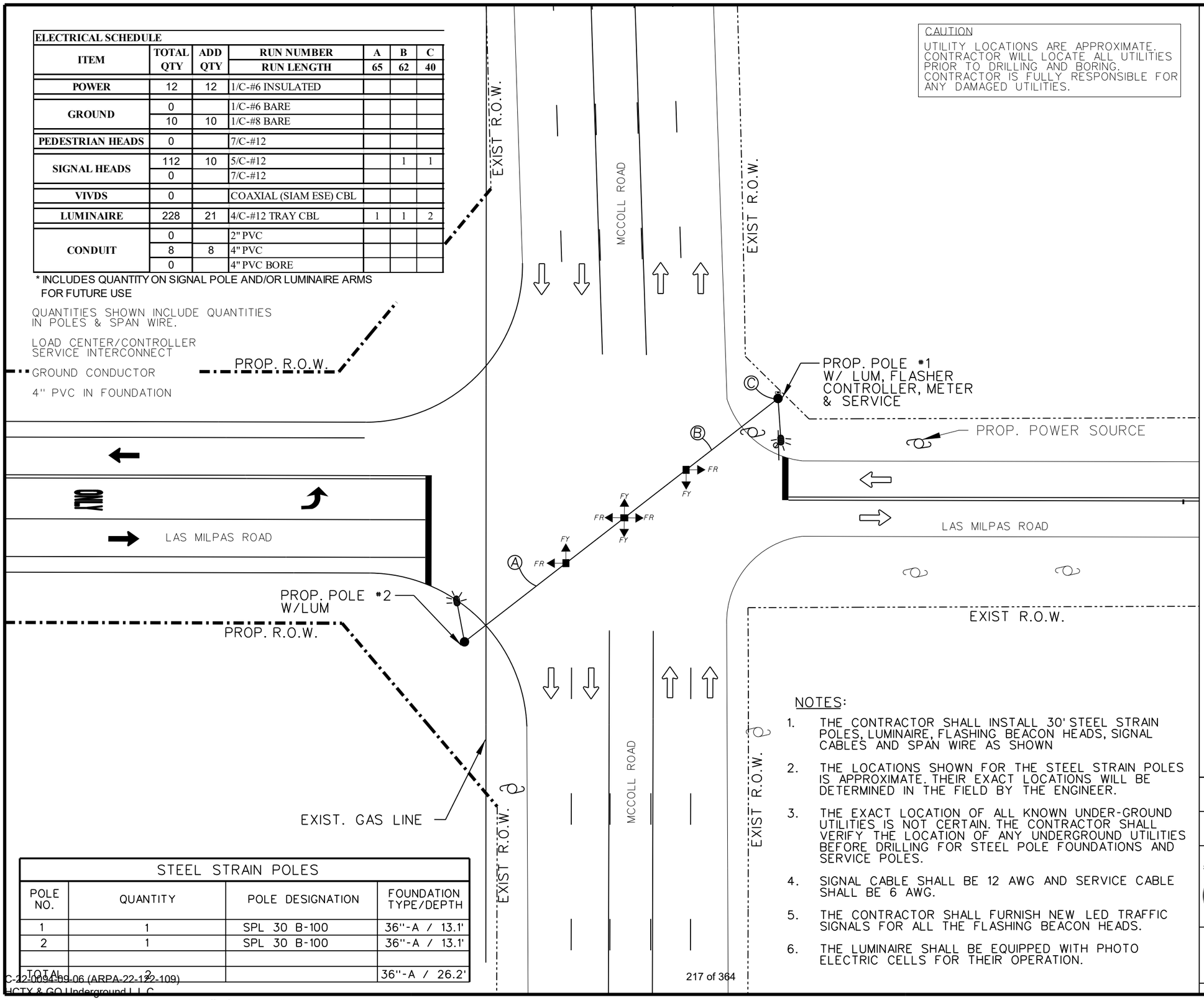
LOAD CENTER/CONTROLLER SERVICE INTERCONNECT

GROUND CONDUCTOR

4" PVC IN FOUNDATION

CAUTION

UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR WILL LOCATE ALL UTILITIES PRIOR TO DRILLING AND BORING. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGED UTILITIES.



STEEL STRAIN POLES			
POLE NO.	QUANTITY	POLE DESIGNATION	FOUNDATION TYPE/DEPTH
1	1	SPL 30 B-100	36"-A / 13.1'
2	1	SPL 30 B-100	36"-A / 13.1'
TOTAL	2		36"-A / 26.2'

NOTES:

1. THE CONTRACTOR SHALL INSTALL 30' STEEL STRAIN POLES, LUMINAIRE, FLASHING BEACON HEADS, SIGNAL CABLES AND SPAN WIRE AS SHOWN
2. THE LOCATIONS SHOWN FOR THE STEEL STRAIN POLES IS APPROXIMATE. THEIR EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. THE EXACT LOCATION OF ALL KNOWN UNDER-GROUND UTILITIES IS NOT CERTAIN. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UNDERGROUND UTILITIES BEFORE DRILLING FOR STEEL POLE FOUNDATIONS AND SERVICE POLES.
4. SIGNAL CABLE SHALL BE 12 AWG AND SERVICE CABLE SHALL BE 6 AWG.
5. THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNALS FOR ALL THE FLASHING BEACON HEADS.
6. THE LUMINAIRE SHALL BE EQUIPPED WITH PHOTO ELECTRIC CELLS FOR THEIR OPERATION.

0 15 30

LEGEND

- PROP. MAST ARM POLE
- PROP. HORIZONTAL SIGNAL HEAD
- PROP. PEDESTRIAN SIGNAL HEAD W/PUSHBUTTON & SIGN
- PROP. GROUND MOUNTED CONTROLLER CABINET
- PROP. GROUND BOX (TYPE A) W/APRON
- PROP. GROUND BOX (TYPE D) W/APRON
- WIRE RUN DESIGNATION
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- PROP. CONDUIT (BORE) (SIZE AND TYPE AS SPECIFIED)
- PROP. VIVDS CAMERA
- PROP. LUMINAIRE
- DIRECTION OF TRAFFIC FLOW
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- EXIST. TRAFFIC SIGNAL BOX
- EXIST. FIBER OPTIC MANHOLE
- EXIST. GUY WIRE
- R.O.W. LINE
- EXIST. GAS LINE
- W — EXIST. WATER LINE
- FO — EXIST. FIBER OPTIC LINE
- PL — EXIST. OVERHEAD POWER LINE
- EXIST. SIDEWALK
- EXIST. SIDEWALK RAMP

STATE OF TEXAS
ALBERTO J. ALDANA
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Albert J. Aldana 10/2/2019
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ENGINEERING CONSULTANTS
720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
info@aetdengineers.com
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LAS MILPAS RD AT MCCOLL RD PROPOSED SIGNAL LAYOUT

(HCDA 07-12-22

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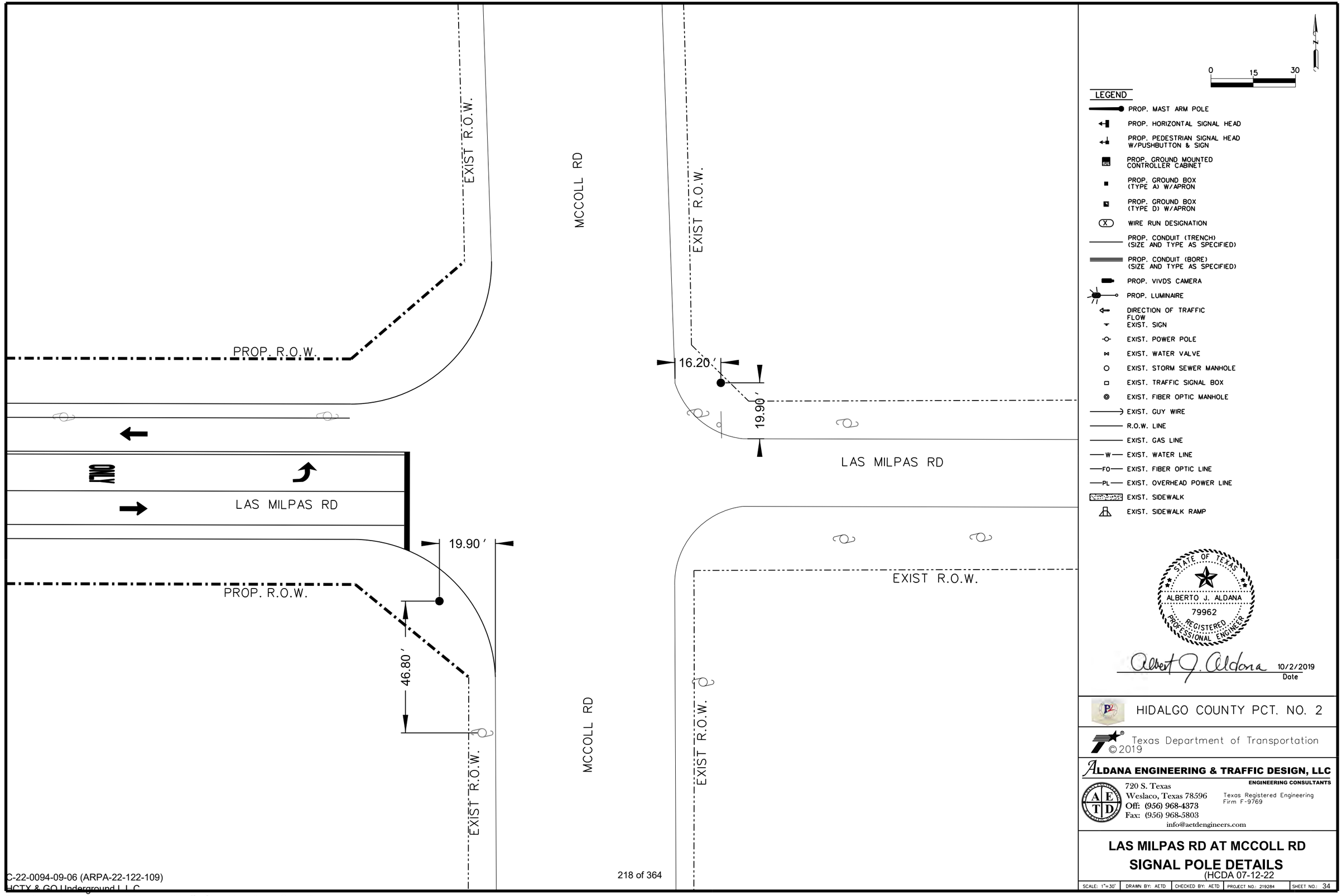

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720 S. Texas
Weslaco, Texas 78596
Off: (956) 968-4373
Fax: (956) 968-5803
info@aetdengineers.com
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LAS MILPAS RD AT MCCOLL RD
SIGNAL POLE DETAILS
(HCDA 07-12-22

SCALE: 1"=30'	DRAWN BY: AETD	CHECKED BY: AETD	PROJECT NO.: 219284	SHEET NO.: 34

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GENERAL NOTES FOR ALL ELECTRICAL WORK

1. The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.

2. Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.

3. Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is ½ in. or less in diameter.

4. Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.

5. Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.

6. When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

1. Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.

2. Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.

3. Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.

AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

4. Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.

5. Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.

6. Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.

7. Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

8. Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.

9. When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.

10. Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

1. Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.

2. Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.

3. Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.

4. Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.

5. When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."

6. Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.

7. During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.

8. Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.

9. Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.

10. Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.

11. At all electrical services, install a 6 AWG solid copper grounding electrode conductor.

12. Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).

13. Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.

14. File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS CONDUITS & NOTES

ED(1)-14

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ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS)11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.

2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.

3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.

4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.

2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.

3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.

4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.

5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.

6. Support conductors in illumination poles with a J-hook at the top of the pole.

7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.

8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.

9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.

10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.

11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.

2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.

3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.

4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.

5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.

2. Do not place ground rods in the same drilled hole as a timber pole.

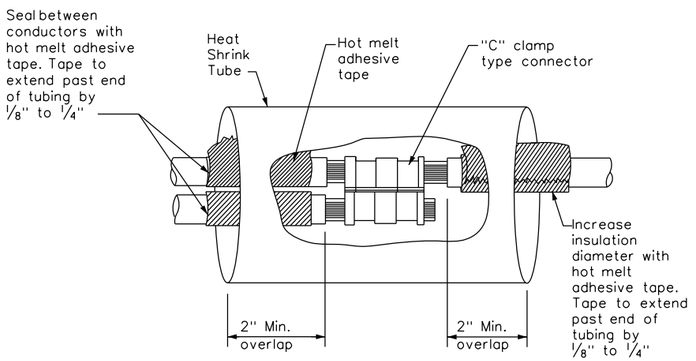
3. Install ground rods so the imprinted part number is at the upper end of the rod.

4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.

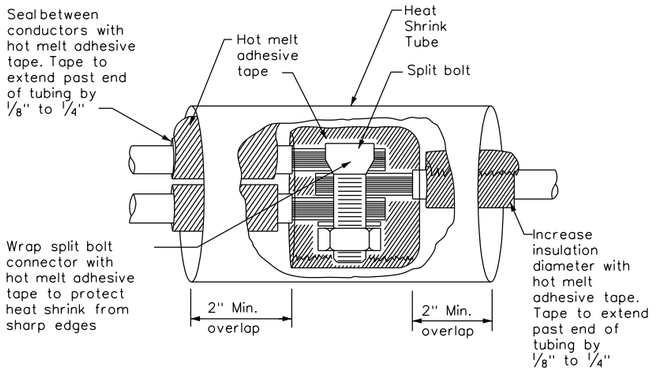
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.

6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.

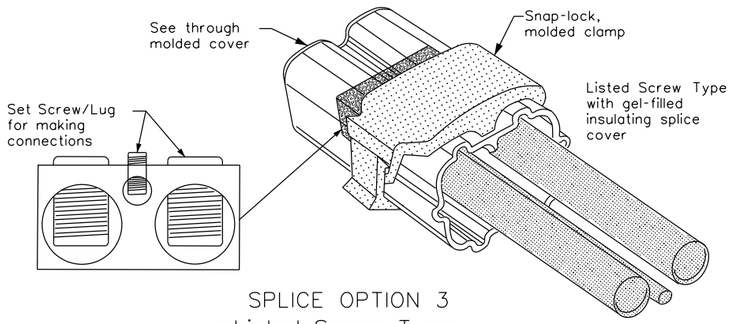
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



SPLICE OPTION 1
Compression Type



SPLICE OPTION 2
Split Bolt Type



SPLICE OPTION 3
Listed Screw Type

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS CONDUCTORS

ED(3)-14

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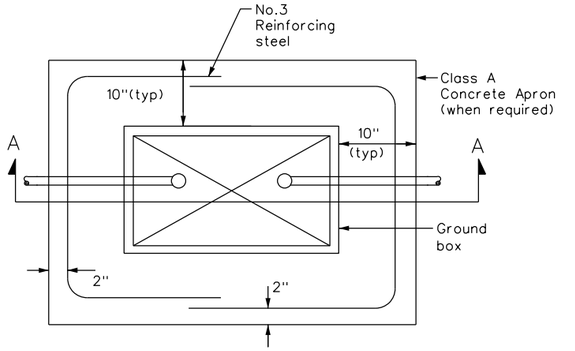
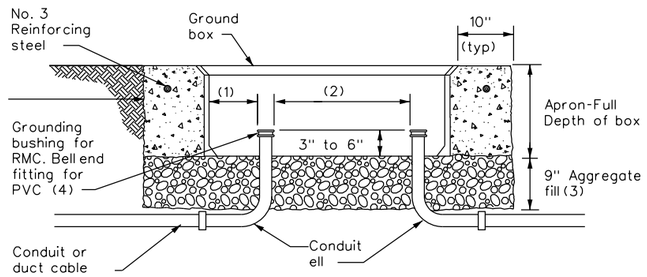


PLAN VIEW



SECTION A - A

APRON FOR GROUND BOX

(1) Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.

(2) Maintain sufficient space between conduits to allow for proper installation of bushing.

(3) Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.

(4) Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.

GROUND BOX DIMENSIONS	
TYPE	OUTSIDE DIMENSIONS (INCHES) (Width x Length X Depth)
A	12 X 23 X 11
B	12 X 23 X 22
C	16 X 29 X 11
D	16 X 29 X 22
E	12 X 23 X 17

GROUND BOXES

A. MATERIALS

1. Provide polymer concrete ground boxes measuring 16x30x24 in. (WxLxD) or smaller in accordance with Departmental Material Specification (DMS) 11070 "Ground Boxes" and Item 624 "Ground Boxes."

2. Provide Type A, B, C, D, and E ground boxes as shown in the plans, and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.

3. Ensure ground box cover is correctly labeled in accordance with DMS 11070.

4. Provide larger ground boxes in accordance with Item 624 and as shown in the plans.

B. CONSTRUCTION METHODS

1. Remove all gravel and dirt from conduit. Cap all conduits prior to placing aggregate and setting ground box. Provide Grade 3 or 4 coarse aggregate as shown on Table 2 of Item 302 "Aggregates for Surface Treatments." Ensure aggregate bed is in place and at least 9 inches deep, prior to setting the ground box. Install ground box on top of aggregate.

2. Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.

3. Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.

4. Install all conduits and ells in a neat and workmanlike manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.

5. Temporarily seal all conduits in the ground box until conductors are installed.

6. Permanently seal conduits immediately after the completion of conductor installation and pull tests. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a sealant.

7. When a ground rod is present in a ground box, bond all equipment grounding conductors together and to the ground rod with listed connectors.

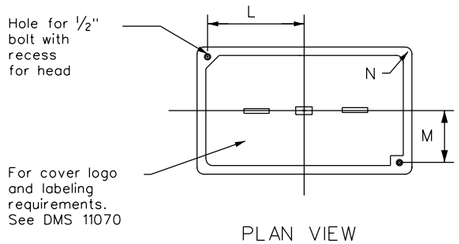
8. When a type B or D ground box is stacked to meet volume requirements, it is allowable to cut an appropriately sized hole for conduit entry in the side wall at least 18 inches below grade.

9. If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.

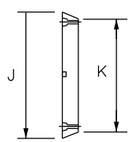
10. If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.

11. Bond metal ground box covers to the grounding conductor with a tank ground type lug.

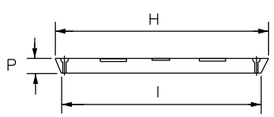
GROUND BOX COVER DIMENSIONS								
TYPE	DIMENSIONS (INCHES)							
	H	I	J	K	L	M	N	P
A, B & E	23 1/4	23	13 3/4	13 1/2	9 7/8	5 1/8	1 3/8	2
C & D	30 1/2	30 1/4	17 1/2	17 1/4	13 1/4	6 3/4	1 3/8	2



PLAN VIEW



END



SIDE

GROUND BOX COVER

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS GROUND BOXES

ED(4)-14

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ELECTRICAL SERVICES NOTES

1. Provide new materials. Ensure installation and materials comply with the applicable provisions of the National Electrical Code (NEC) and National Electrical Manufacturers Association (NEMA) standards. Ensure material is Underwriters Laboratories (UL) listed. Provide and install electrical service conduits, conductors, disconnects, contactors, circuit breaker panels, and branch circuit breakers as shown on the Electrical Service Data chart in the plans. Faulty fabrication or poor workmanship in material, equipment, or installation is justification for rejection. Where manufacturers provide warranties and guarantees as a customary trade practice, furnish these to the State.

2. Provide electrical services in accordance with Electrical Details standard sheets, Departmental Material Specification (DMS) 11080 "Electrical Services,"DMS 11081 "Electrical Services-Type A," DMS 11082 "Electrical Services-Type C," DMS 11083 "Electrical Services-Type D," DMS 11084 "Electrical Services-Type T," DMS 11085 "Electrical Services-Pedestal (PS)", and Item 628 "Electrical Services" of the Standard Specifications. Provide electrical service types A, C, and D, as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 628. Provide other service types as detailed on the plans.

3. Provide all work, materials, services, and any incidentals needed to install a complete electrical service as specified in the plans.

4. Coordinate with the Engineer and the utility provider for metering and compliance with utility requirements. Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location are paid for in accordance with Item 628. Get approval for the costs associated with these charges prior to engaging the utility company to do the work. Consult with the utility provider to determine costs and requirements, and coordinate the work as approved.

5. The enclosure manufacturer will provide Master Lock Type 2 with brass tumblers keyed *2195 for all custom electrical enclosures. Installing Contractor is to provide Master Lock *2195 Type 2 with brass tumblers for "off the shelf" enclosures. Master Lock *2195 keys and locks become property of the State. Unless otherwise approved, do not energize electrical service equipment until locks are installed.

6. Enclosures with external disconnects that de-energize all equipment inside the enclosure do not need a dead front trim. Protect incoming line terminations from incidental contact as required by the NEC.

7. When galvanized is specified for nuts, screws, bolts or miscellaneous hardware, stainless steel may be used.

8. Provide wiring and electrical components rated for 75° C. Provide red, black, and white colored XHHW service entrance conductors of minimum size 6 American Wire Gauge (AWG). Identify size 6 AWG conductors by continuous color jacket. Identify electrical conductors sized 4 AWG and larger by continuous color jacket or by colored tape. Mark at least 6 inches of the conductor's insulation with half laps of colored tape, when identifying conductors. Ensure each service entrance conductor exits through a separately bushed non-metallic opening in the weatherhead. The lengths of the conductors outside the weatherhead are to be 12 inches minimum, 18 inches maximum, or as required by utility.

9. All electrical service conduit and conductors attached to the electrical service including the riser or the elbow below ground are subsidiary to the electrical service. For an underground utility feed, all service conduit and conductors after the elbow, including service conduit and conductors for the utility pole riser when furnished by the Contractor, will be paid for separately.

10. Provide rigid metal conduit (RMC) for all conduits on service, except for the ½ in. PVC conduit containing the electrical service grounding electrode conductor. Size the service entrance conduit as shown in the plans. Ensure conduit for branch circuit entry to enclosure is the same size as that shown on the layout sheets for branch circuit conduit. Extend all rigid metal conduits a minimum of 6 inches underground and then couple to the type and schedule of the conduit shown on the layout for that particular branch circuit. Install a grounding bushing on the RMC where it terminates in the service enclosure.

11. Use of liquidtight flexible metal conduit (LFMC) is allowed between the meter and service enclosure when they are mounted 90 to 180 degrees to each other. Size the LFMC the same size as service entrance conduit. LFMC must not exceed 3 feet in length. Strap LFMC within 1 foot of each end. LFMC less than 12 inches in length need not be strapped. Each end of LFMC must have a grounding bushing or be terminated with a grounding fitting. The LFMC must contain a grounded (neutral) conductor. Ensure any bend in LFMC never exceeds 180 degrees. A pull test is required on all installed conductors, with at least six inches of free conductor movement demonstrated to the satisfaction of the Engineer.

12. Ensure all mounting hardware and installation details of services conform to utility company specifications.

13. For all electrical service enclosures listed under Item 628 on the MPL, the UL 508 enclosure manufacturers will prepare and submit a schematic drawing unique to each service. Before shipment to the job site, place the applicable laminated schematic drawings and the laminated plan sheet showing the electrical service data chart used to build the enclosure in the enclosure's data pocket. The installing contractor will copy and laminate the actual project plan sheets detailing all equipment and branch circuits supplied by that service. The laminated plan sheets are to be placed in the service enclosure's document pocket. Reduce 11 in. x 17 in. plan sheets to 8 ½ in. x 11 in. before laminating. If the installation differs from the plan sheets, the installing contractor is to redline plan sheets before laminating.

14. When providing an "Off The Shelf" Type D or Type T service, provide laminated plan sheets detailing equipment and branch circuits supplied by that service. Reduce 11 in. x 17 in. plan sheets to 8 ½ in. x 11 in before laminating. Deliver these drawings before completion of the work to the Engineer, instead of placing in enclosure that has no door pocket.

15. Do not install conduit in the back wall of a service enclosure where it would penetrate the equipment mounting panel inside the enclosure. Provide grounding bushings on all metal conduits, and terminate bonding jumpers to grounding bus. Grounding bushings are not required when the end of the metal conduit is fitted with a threaded boss, such as a meter base hub.

SERVICE ASSEMBLY ENCLOSURE

1. Provide threaded hub for all conduit entries into the top of enclosure.

2. Type galvanized steel (GS) enclosures may be used for Type C panelboards and for Type D and T services that do not use an enclosure mounted photocell or lighting contactor. Provide GS enclosures in accordance with DMS 11080, 11082, 11083, and 11084.

3. Provide aluminum (AL) and stainless steel (SS) enclosures for Types A, C, and D in accordance with DMS 11080, 11081, 11082, 11083, and 11084. Do not paint stainless steel.

4. Provide pedestal service (PS) enclosures in accordance with ED(9) and DMS 11080 and 11085. Do not provide GS pedestal services. If GS is shown in the PS descriptive code, provide an AL enclosure.

MAIN DISCONNECT & BRANCH CIRCUIT BREAKERS

1. Field drill flange-mounted remote operator handle if needed, to ensure handle is lockable in both the "On" and "Off" positions.

2. When the utility company provides a transformer larger than 50 KVA, verify that the available fault current is less than the circuit breaker's ampere interrupting capacity (AIC) rating and provide documentation from the electric utility provider to the Engineer.

PHOTOELECTRIC CONTROL

1. Provide photocell as listed on the MPL. Move, adjust, or shield the photocell from stray or ambient night time light to ensure proper operation. Mount photocell facing north when practical. Mount top of pole photocells as shown on Top Mounted Photocell Detail.

* ELECTRICAL SERVICE DATA

Elec. Service ID	Plan Sheet Number	Electrical Service Description	Service Conduit ** Size	Service Conductors No./Size	Safety Switch Amps	Main Ckt. Bkr. Pole/Amps	Two-Pole Contractor Amps	Panelbd/ Loadcenter Amp Rating	Branch Circuit ID	Branch Ckt. Bkr. Pole/Amps	Branch Circuit Amps	KVA Load
SB 183	289	ELC SRV TY A 240/480 100(SS)AL(E)SF(U)	2"	3/*2	100	2P/100	100	N/A	Lighting NB	2P/40	26	28.1
									Lighting SB	2P/40	25	
									Underpass	1P/20	15	
NB Access	30	ELC SRV TY D 120/240 060(NS)SS(E)TS(O)	1 ¼"	3/*6	N/A	2P/60		100	Sig. Controller	1P/30	23	5.3
							30		Luminaires	2P/20	9	
									CCTV	1P/20	3	
2nd & Main	58	ELC SRV TY T 120/240 000(NS)GS(N)SP(O)	1 ¼"	3/*6	N/A	N/A	N/A	70	Flashing Beacon 1	1P/20	4	1.0
									Flashing Beacon 2	1P/20	4	

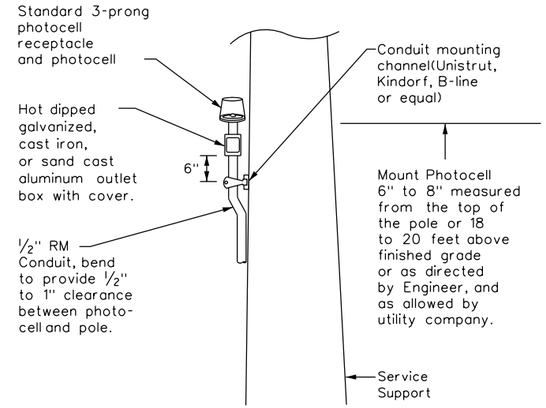
* Example only, not for construction. All new electrical services must have electrical service data chart specific to that service as shown in the plans.

** Verify service conduit size with utility. Size may change due to utility meter requirements. Ensure conduit size meets the National Electrical Code.

EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE

ELEC SERV TY X XXX/XXX XXX (XX) XX (X) XX (X)

- Schematic Type
- Service Voltage V / V
- Disconnect Amp Rating
  000 indicates main lug only/
  Typically Type T
- (SS)= Safety Switch Ahead of Meter-Check with Utility
- (NS)= No safety Switch Ahead of Meter-Check with Utility
- Enclosure Type
  - GS= Galvanized steel("off the shelf")
  - SS= Stainless steel(Custom Enclosure)See MPL
  - AL= Aluminum (Custom Enclosure)See MPL
- Photocell Mounting Location
  - (E)= Inside Service/Enclosure Mounted
  - (T)= Top of pole
  - (L)= Luminaire mounted
  - (N)= None/No Photocell or Lighting Contactor Required
- Service Support Type
  - GC= Granite concrete
  - OC= Other concrete
  - TP= Timber pole
  - SP= Steel pole
  - SF= Steel frame
  - OT= Pole by others or paid for separately
  - EX= Existing pole
  - TS= Service on traffic signal pole
  - PS= Pedestal Service
- O= Overhead Service Feed from Utility
- U= Underground Service Feed from Utility



TOP MOUNTED PHOTOCELL

Install conduit strap maximum 3 feet from box. 5 foot maximum spacing between straps supporting conduit.

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Traffic Operations Division Standard

ELECTRICAL DETAILS SERVICE NOTES & DATA

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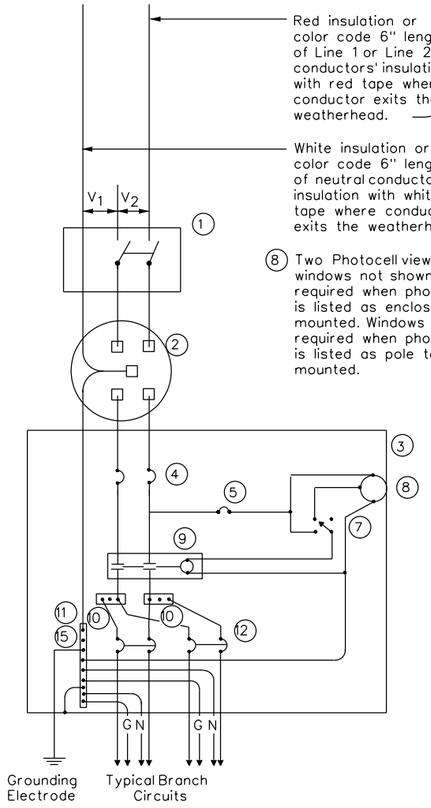
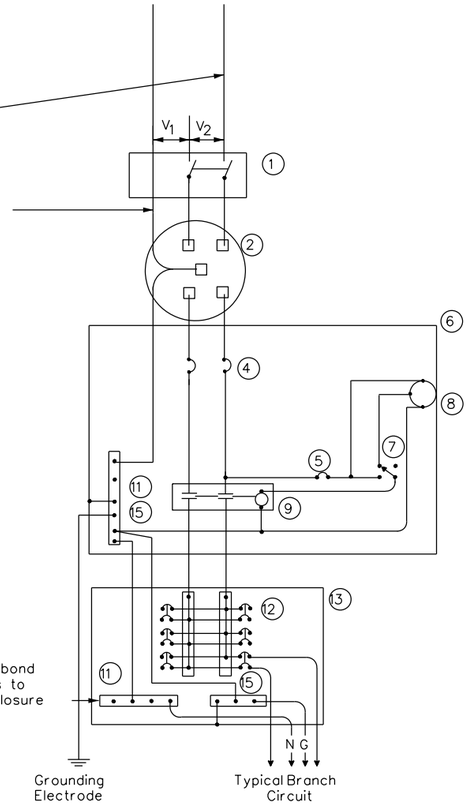
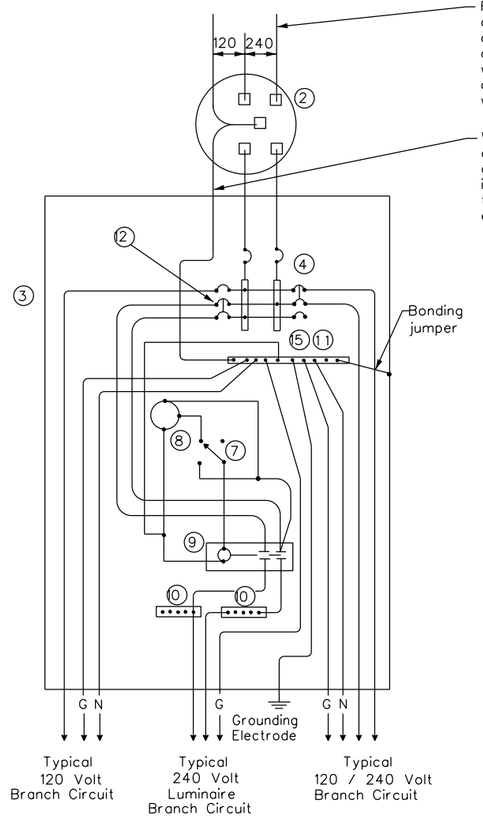


SCHEMATIC TYPE A
THREE WIRE

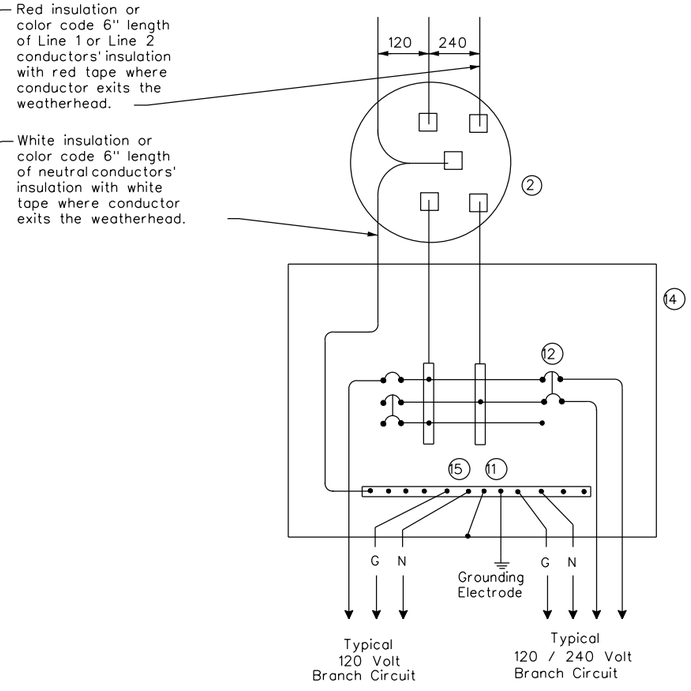
(8) Two Photocell viewing windows not shown but required when photocell is listed as enclosure mounted. Windows not required when photocell is listed as pole top mounted.



SCHEMATIC TYPE C
THREE WIRE



SCHEMATIC TYPE D - CUSTOM
120/240 VOLTS - THREE WIRE



SCHEMATIC TYPE T
120/240 VOLTS - THREE WIRE

Galvanized steel-"Buy Off The Shelf" only. When required install photocell top of the pole or on luminaire only, no lighting contractor will be installed.

WIRING LEGEND	
———	Power Wiring
———	Control Wiring
—N—	Neutral Conductor
—G—	Equipment grounding conductor-always required

SCHEMATIC LEGEND	
1	Safety Switch (when required)
2	Meter (when required-verify with electric utility provider)
3	Service Assembly Enclosure
4	Main Disconnect Breaker (See Electrical Service Data)
5	Circuit Breaker, 15 Amp (Control Circuit)
6	Auxiliary Enclosure
7	Control Station ("H-O-A" Switch)
8	Photo Electric Control (enclosure-mounted shown)
9	Lighting Contactor
10	Power Distribution Terminal Blocks
11	Neutral Bus
12	Branch Circuit Breaker (See Electrical Service Data)
13	Separate Circuit Breaker Panelboard
14	Load Center
15	Ground Bus

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS SERVICE ENCLOSURE AND NOTES

ED(6)-14

FILE: ed6-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		39

71F

DATE:
FILE:

TRAFFIC SIGNAL NOTES

1. Do not pass luminaire conductors through the signal controller cabinet.

2. Include an equipment grounding conductor in all conduits throughout the electrical system. Bond all exposed metal parts to the grounding conductor.

3. Provide roadway luminaires, when required, in accordance with the material and construction sections of Item 610, "Roadway Illumination Assemblies," except for performance testing of luminaires. Test installed roadway luminaires for proper operation as a part of the associated traffic signal system test.

4. If internally illuminated street name signs are approved for use, ground the fixture to the pole with a 12 AWG green XHHW conductor.

5. Bond anchor bolts to rebar cage in two locations using #3 bars or 6 AWG stranded copper conductors. Use listed mechanical connectors rated for embedment in concrete. See TXDOT standard TS-FD for further details.

6. Drill and tap signal poles for $\frac{1}{2}$ in. X 13 UNC tank ground fitting. Provide and install tank ground fitting 4 in. to 6 in. directly below electrical service enclosure. Provide properly sized hole through the bottom of the enclosure for the service grounding electrode conductor. Connect the electrical service grounding electrode conductor to the tank ground fitting. Ensure electrical service grounding electrode conductor is as short and straight as possible from the enclosure to the tank ground fitting. See Inset A detail for further information. Size service entrance conduit and branch circuit conduit as shown in the plans.

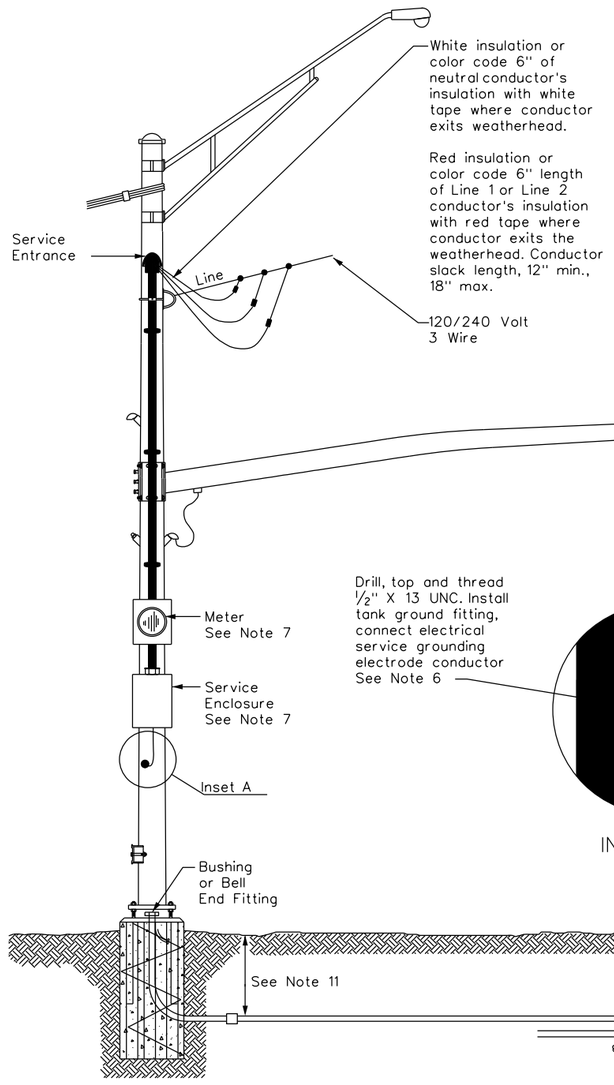
7. Mount electrical service enclosure and meter to signal pole with stainless steel bands. Ensure bands are a minimum width of $\frac{3}{4}$ in. Secure enclosures to bands using two-bolt brackets. Install brackets near top and bottom of each enclosure. Install properly sized stainless steel washers on each bolt in the enclosure. Band or drill and tap properly sized stand-off straps to signal pole for attaching conduit.

8. Conduct pull tests and insulation resistance tests on all illumination and power conductors as required in Item 620 "Electrical Conductors" and ED(3). To prevent electronics damage, do not conduct insulation resistance tests on traffic signal cables after termination.

9. Lock all enclosures and bolt down all ground box covers before applying power to the signal installation.

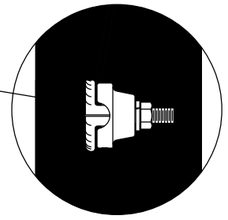
10. Terminate conduits entering the top of enclosures with a conduit-sealing hub or threaded boss such as meter hub. Install a grounding bushing on all metal conduits not connected to conduit-sealing hub or threaded boss. Bond the grounding bushing to the ground bus with a bonding jumper. Seal all conduits entering enclosures with duct seal or expanding foam. Do not use silicone to seal conduit ends.

11. For all conduits, ensure the burial depth is a minimum of 18". Ensure the minimum burial depth for conduit placed under a roadway is 24".

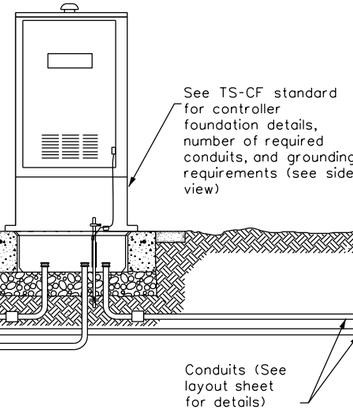


SIGNAL POLE WITH SERVICE

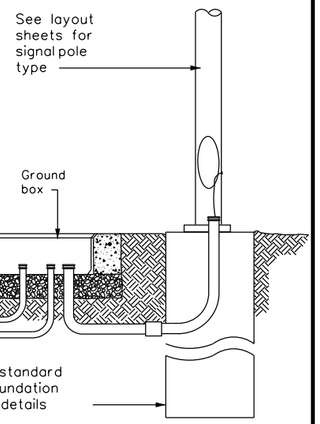
Type T electrical service mounted on signal pole shown as an example. See electrical details, layout sheets, and electrical service data chart for additional details.



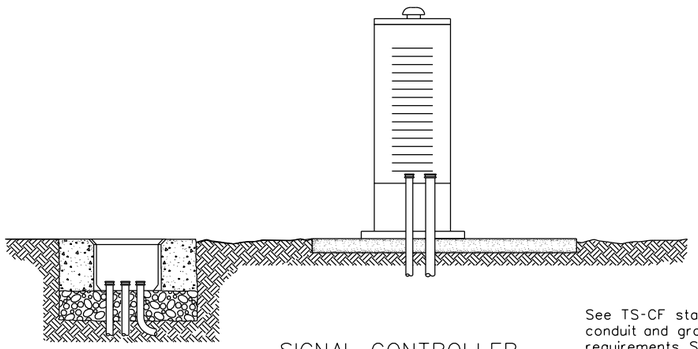
INSET A



SIGNAL CONTROLLER FRONT VIEW



SIGNAL POLE



SIGNAL CONTROLLER SIDE VIEW

See TS-CF standard for conduit and grounding requirements. See layout sheets for ground box locations and any additional conduits that are required.

Texas Department of Transportation

Traffic Operations Division Standard

ELECTRICAL DETAILS TYPICAL TRAFFIC SIGNAL SYSTEM DETAILS

ED(8)-14

FILE: ed8-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		40

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DATE: 1/30/2021 3:38:06 PM
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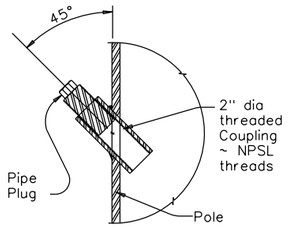
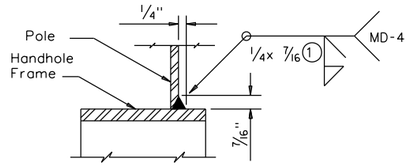
DETAIL A

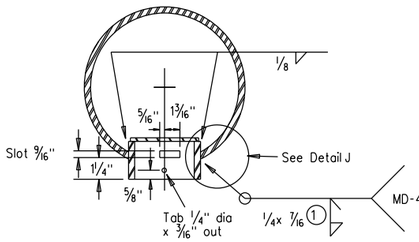
(for pole with luminaire)



POLE COUPLING DETAIL

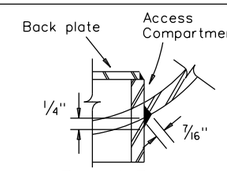


DETAIL G

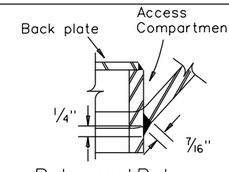


SECTION X-X

Opening for access compartment shall be no more than 1/16inch wider than the access compartment itself.

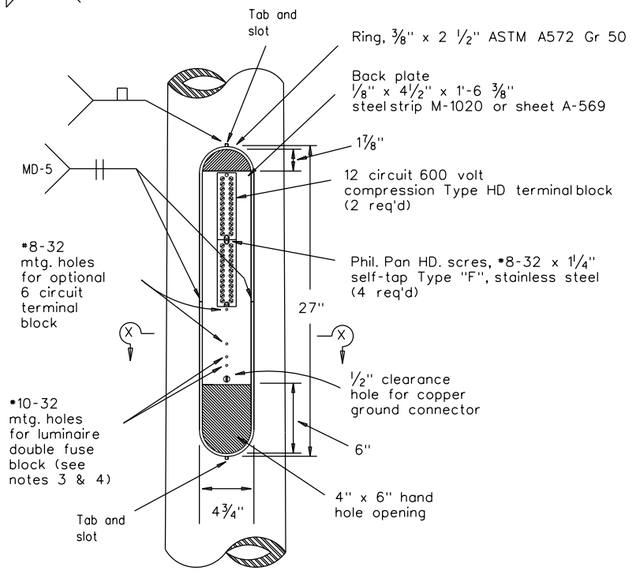


Round Pole

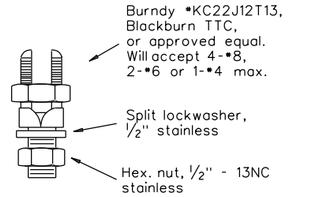


Polygonal Pole

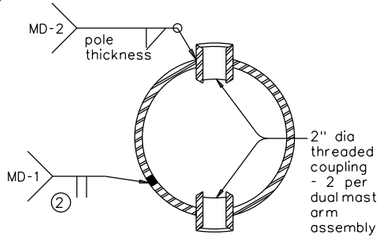
DETAIL J



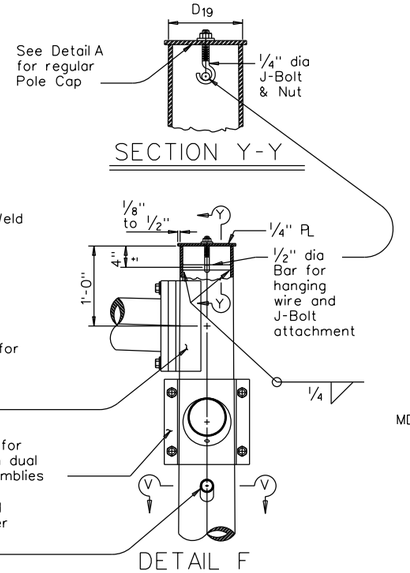
ACCESS COMPARTMENT



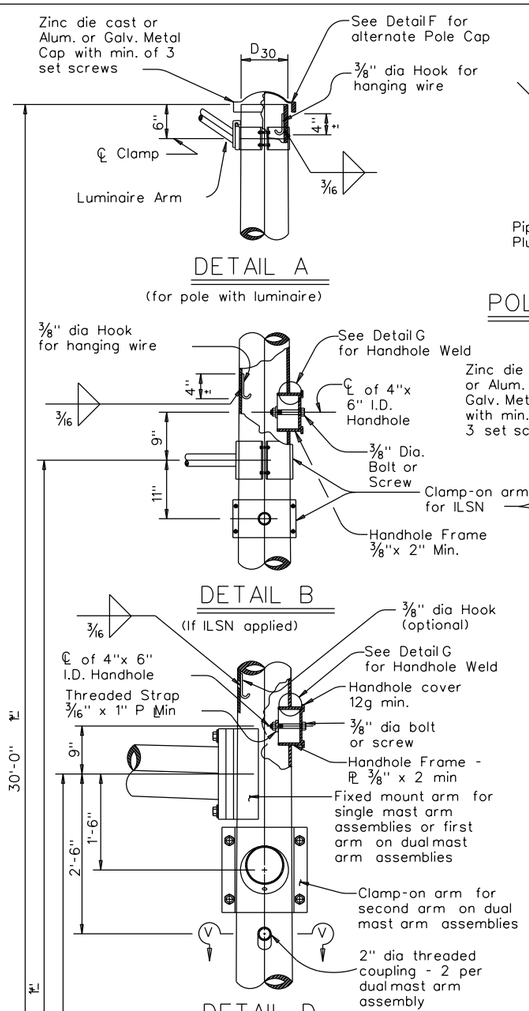
COPPER GROUND CONNECTOR



SECTION V-V



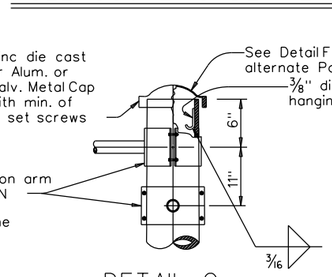
SECTION Y-Y



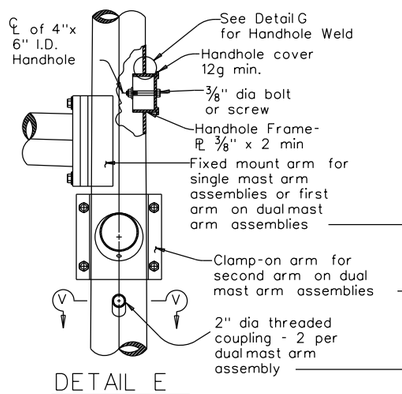
DETAIL B

DETAIL D

(for 30' pole with luminaire and ILSN sign)



DETAIL C



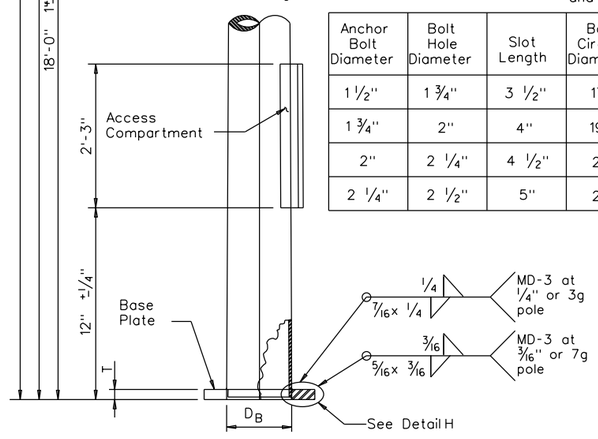
DETAIL E

(for 24' pole with ILSN sign and no luminaire)

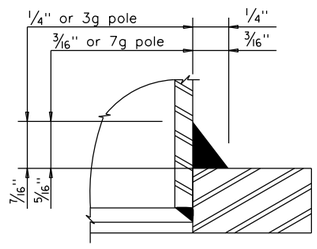
DETAIL F

(for 19' pole with no ILSN sign and no luminaire)

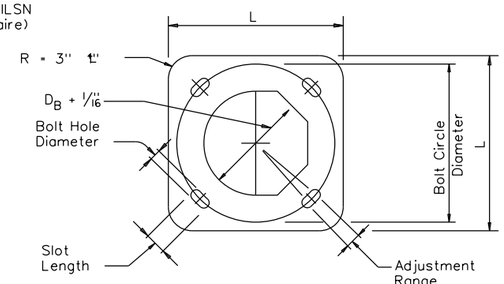
Anchor Bolt Diameter	Bolt Hole Diameter	Slot Length	Bolt Circle Diameter	Base PL Dim. L x T	Adjust. Range
1 1/2"	1 3/4"	3 1/2"	17"	18" x 1 1/2"	13.4°
1 3/4"	2"	4"	19"	20" x 1 3/4"	13.5°
2"	2 1/4"	4 1/2"	21"	22" x 2"	13.6°
2 1/4"	2 1/2"	5"	23"	24" x 2 1/4"	13.7°



POLE ELEVATION



DETAIL H



BASE PLATE PLAN

(1) 85% Min. penetration

(2) 60% Min. penetration 100% pemetration within 6" of circumferential base welds.

NOTES:

1. The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.

2. The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilsco SSS-5). The traffic signal contractor shall install the kit items in the field.

3. The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.

4. Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES MAST ARM POLE DETAILS

MA-D-12

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DN: MS	CK: JSY	DW: FDN	CK: CAL

REVISIONS
8-99
1-12

CONT	SECT	JOB	HIGHWAY
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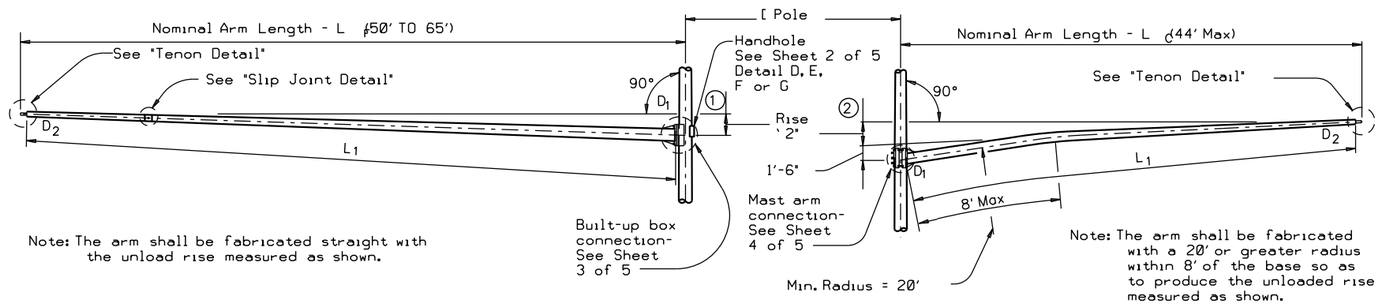
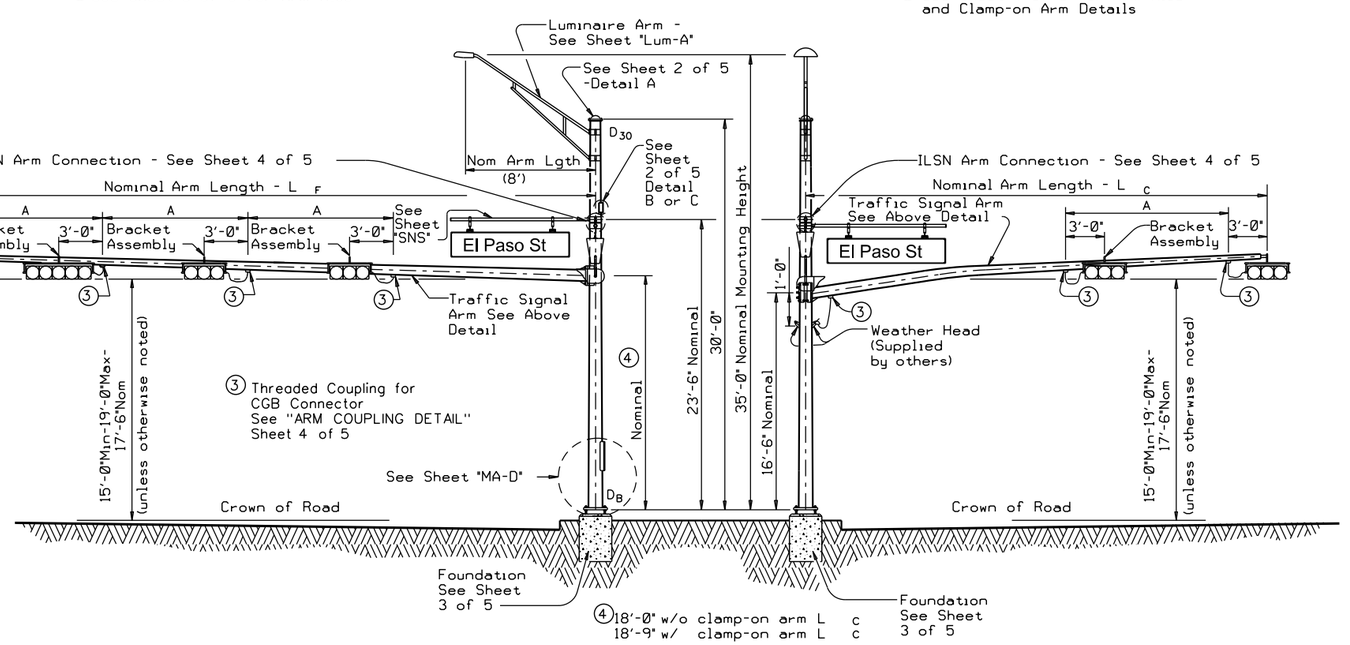


FIXED MOUNT TRAFFIC SIGNAL ARM

①See Sheet 3 of 5 for Arm Rise

CLAMP-ON TRAFFIC SIGNAL ARM (IF REQUIRED)

②See Sheet 4 of 5 for Arm Rise and Clamp-on Arm Details

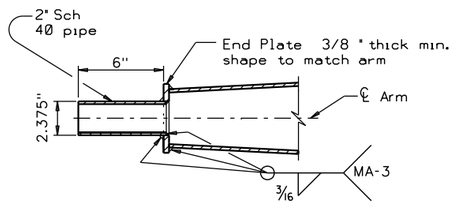


ELEVATION
(Showing fixed mount arm)

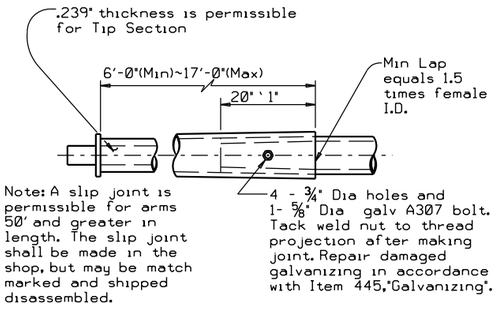
STRUCTURE ASSEMBLY

ELEVATION
(Showing clamp-on arm)

TABLE OF DIMENSIONS "A"										
Arm Length	24'	28'	32'	36'	40'	44'	50'	55'	60'	65'
Arm Type IIC	10'	11'	12'	13'						
Arm Type IIIC			10'	11'	12'	12'				
Arm Type IVC							12'	12'	12'	12'



TENON DETAIL



Note: A slip joint is permissible for arms 50' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

SLIP JOINT DETAIL(FIXED MOUNT ARM)

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed can be either 100 mph or 80 mph plus a 1.3 gust factor. If clamp-on traffic signal is required, designs are based on an arm included angle of 90 degrees or more. Angles of less than approximately 75 degrees will require a special design.

Poles are designed to support one 8'-0" luminaire arm, two 9'-0" internally lighted street name (ILSN) signs and two traffic signal arms with limited length combinations.

Each arm with its related attachment is shown below

Arm	Equivalent DL ⑤	WL EPA ⑤⑥
8' Luminaire Arm	Luminaire 60 lbs	1.6 sq ft
9' ILSN Arm	Sign 85 lbs	11.5 sq ft
50' to 65' Fixed Mount Arm	Signal Loads 310 lbs	52 sq ft
Up to 44' Clamp-on Arm	Signal Loads 180 lbs	32.4 sq ft

⑤ Equivalent dead load plus horizontal wind load applied at the end of arm except ILSN arm, which applied 4.5' from the centerline of the pole.

⑥ Effective projected area (actual area times drag coefficient) for the application of horizontal wind load.

Except as noted in Sheet 1 thru 5 of 5, other details not covered shall refer to Standard Sheet "MA-D" for pole details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Material, fabrication tolerances, and shipping practices shall also meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing" after fabrication.

Deviations from the details and dimensions shown herein require submission of shop drawings in accordance with the Item 441, "Steel Structures". Alternate designs are not acceptable.

Installation of damping plate for the long mast arm is not recommended.

Provision of the bracket assembly used to support the traffic signal heads shall be under the direction of the Engineer for approval.

Design also conforms to NCHRP Report 412 for fatigue resistance except that there are no stiffeners at the base plate. TxDOT is conducting tests to determine if stiffeners at the base plate will or will not result in optimal performance; depending upon the results of the tests, poles may need a retrofit to ensure optimal fatigue performance.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE) LMA(1)-12

Sheet 1 of 5

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DN: JSY	CK: ARC	DW: TGG	CK: JSY
REVISIONS	CONT	SECT	JOB	HIGHWAY
4-20-01	-	-	-	MILPAS
1-12	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		42

131A

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

HCDA 07-12-22

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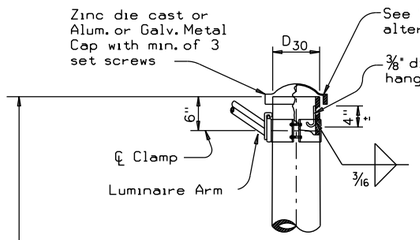
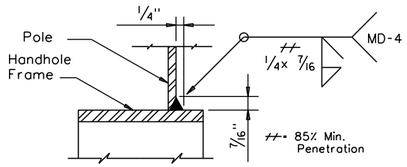
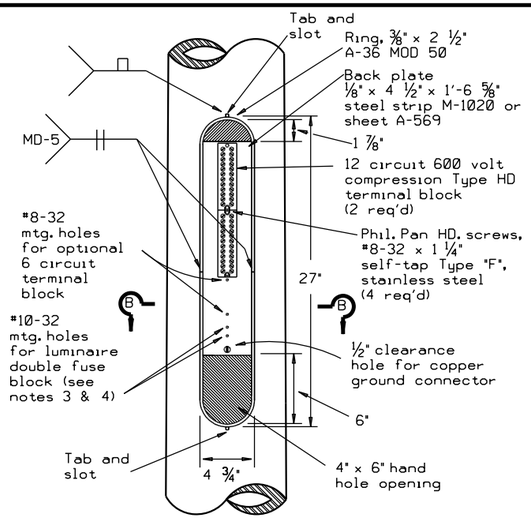


DETAIL A

(for pole with luminaire)



DETAIL H

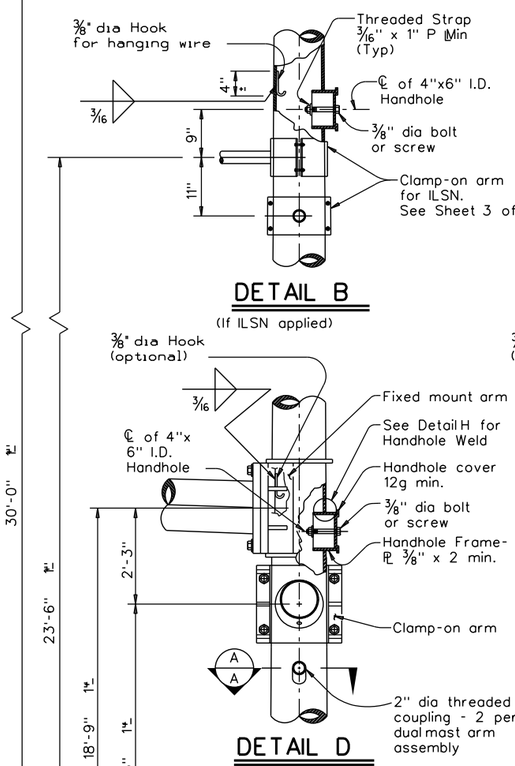


ACCESS COMPARTMENT

MATERIALS	
Round Shafts or Polygonal Shafts (7)	ASTM A595 Gr.A, A588, A1008 HSLAS Gr.50 Class 2, A1011 HSLAS Gr.50 Class 2, A572 Gr.50 or A1011 SS Gr.50 (8)
Plates (7)	ASTM A36, A588, or A572 Gr.50
Connection Bolts	ASTM A325, or A449 except where noted
Pin Bolts	ASTM A325
Pipe (7)	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50, A1011 HSLAS-F Gr.50
Misc. Hardware	Galvanized steel or stainless steel or as noted

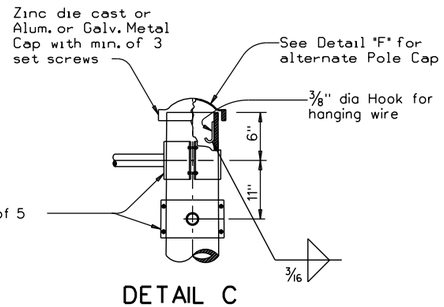
(7) ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F, or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.

(8) ASTM A1011 SS Gr.50 shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.

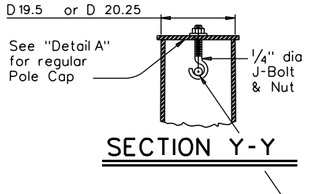


DETAIL B

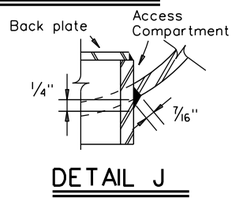
(If ILSN applied)



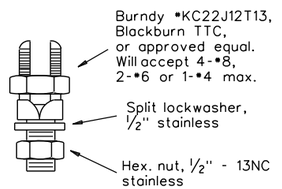
DETAIL C



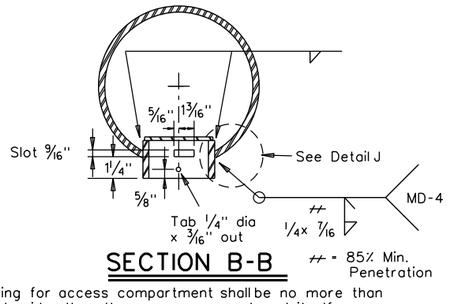
SECTION Y-Y



DETAIL J



COPPER GROUND CONNECTOR



SECTION B-B

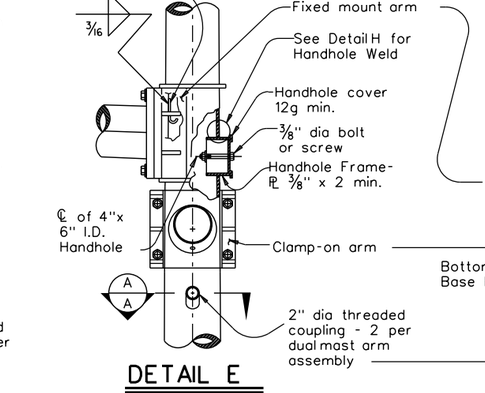
Opening for access compartment shall be no more than 1/16 inch wider than the access compartment itself.

ACCESS COMPARTMENT NOTES:

1. The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
2. The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilsco SSS-5). The traffic signal contractor shall install the kit items in the field.
3. The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
4. Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.

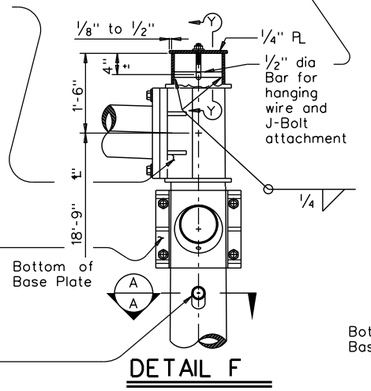
DETAIL D

(for 30' pole with luminaire and ILSN sign)



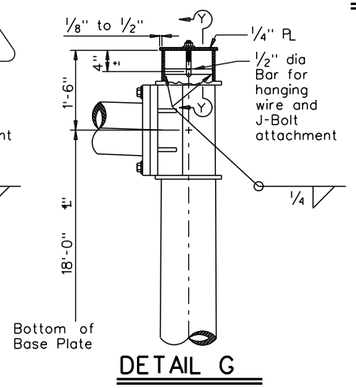
DETAIL E

(for 24' pole with ILSN sign and no luminaire, single or dual mast arm)



DETAIL F

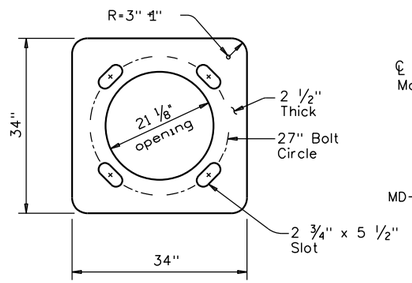
(for 20.25' pole with no ILSN sign and no luminaire, dual mast arm)



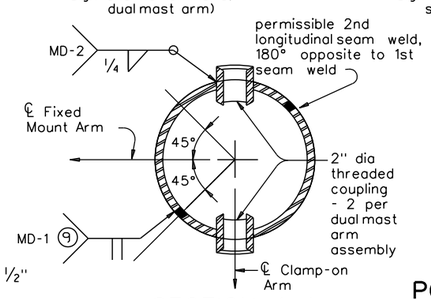
DETAIL G

(for 19.5' pole with no ILSN sign and no luminaire, single mast arm)

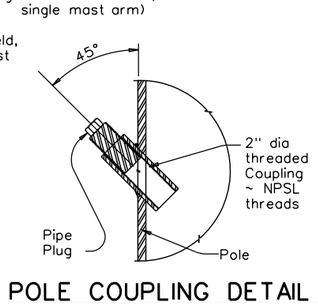
POLE ELEVATION



BASE PLATE



SECTION A-A



POLE COUPLING DETAIL

(9) Longitudinal seam weld must be oriented within 90° (45° rotation each side) along the fixed mount arm. 60% min penetration required, 100% penetration within 6" of circumferential base weld.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

LMA(2)-12

Sheet 2 of 5

©TxDOT July 2000	DN: JSY	CK: ARC	DW: TGG	CK: JSY
REVISIONS	CONT	SECT	JOB	HIGHWAY
4-20-01 1-12	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		43

131B

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HCDA 07-12-22

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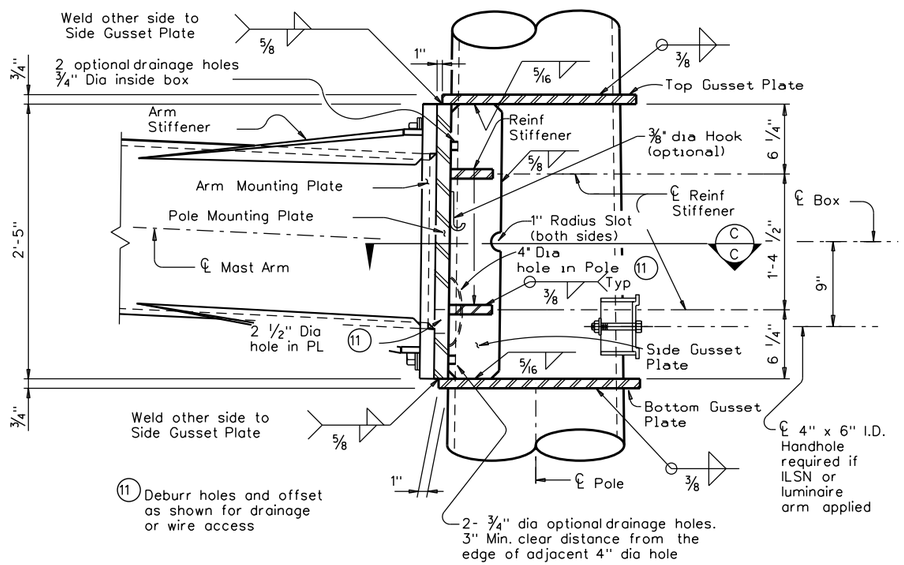
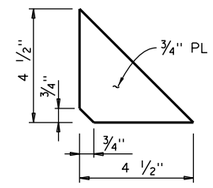
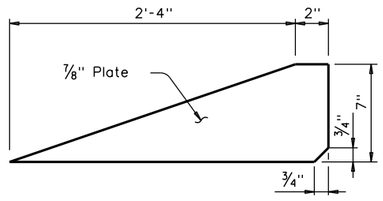


BUILT-UP BOX CONNECTION

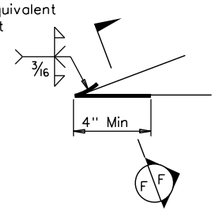


REINFORCING STIFFENER



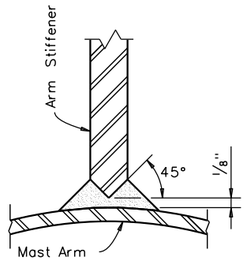
ARM STIFFENER
(Cut to match arm inclination and taper)

Provide Detail shown in SECTION F-F or equivalent 100% complete joint penetration weld from both sides.



Only 4" length at tip of Arm Stiffener requires a complete joint penetration weld. Smooth weld radius to connect Stiffener. Only a fillet weld is required for the remaining weld length.

DETAIL "K"



SECTION F-F

Fixed Mount Arm L_F	ROUND POLES (13)					Foundation Type
	D_B	$D_{19.5}$ or $D_{20.25}$	D_{24}	D_{30}	(12) thk	
ft.	in.	in.	in.	in.	in.	
50',55' 60',65'	21.0	18.2	17.6	16.8	.3125	48-A

Fixed Mount Arm L_F	ROUND ARMS (13)				
	L_1	D_1	D_2	(12) thk	Rise
ft.	ft.	in.	in.	in.	
50	49	18.5	11.7	.3125	3'- 3"
55	54	18.5	11.0	.3125	3'- 7"
60	59	18.5	10.3	.3125	3'-11"
65	64	18.5	9.6	.3125	4'- 4"

D_B = Pole Base O.D.
$D_{19.5}$ = Pole Top O.D. with no Luminaire and no ILSN (single mast arm)
$D_{20.25}$ = Pole Top O.D. with no Luminaire and no ILSN (dual mast arm)
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L_F = Fixed Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

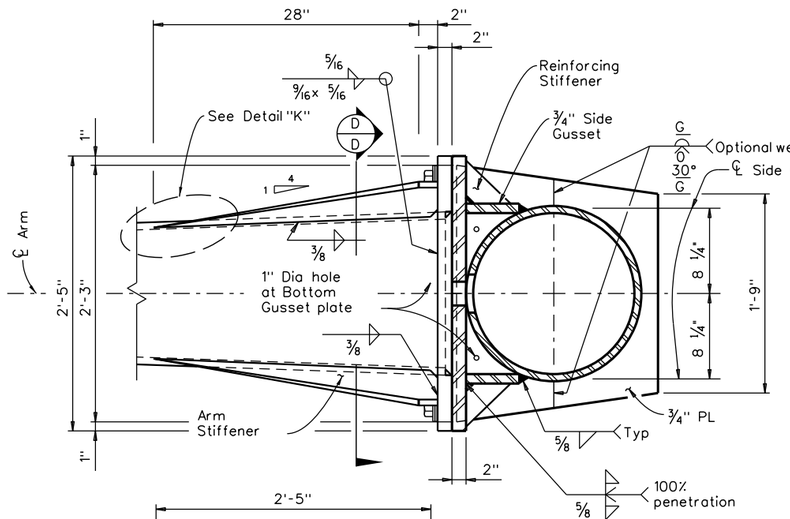
(13) Shaft profile 16-sided or 18-sided is considered to be equivalent to round section.

GENERAL NOTES:

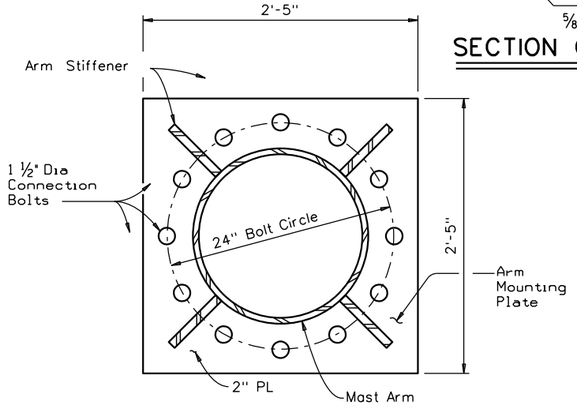
Built-up Box Connection: For the welded arm-to-pole connection as a build-up box configuration illustrated here is an example only, fabricators are required to submit a shop drawing of box connection for approval. The drawing shall specify the details of each box element, welds of arm-to-pole connection, arm-to-plate socket connection, and arm rise creation. Specify the proper location of drain holes along the pole. 2 1/2" dia hole in the pole mounting plate and 4" dia hole in the pole need to be aligned for wiring access or drainage. Arm stiffeners cut to match arm inclination and taper shall also be included.

The deviation from flat for either arm or pole mounting plate shall not exceed 3/32in., which is measured along the center of mounting plate to a radial distance of 13.5 in. The deformed-from-flat connection between arm and pole mounting plates shall not be allowed if the center of both mounting plates cannot contact directly.

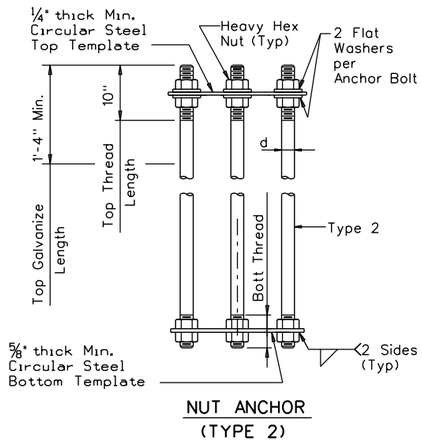
Fixed mount details are used for single mast arm assemblies and for the first arm on dual mast arm assemblies.



SECTION C-C

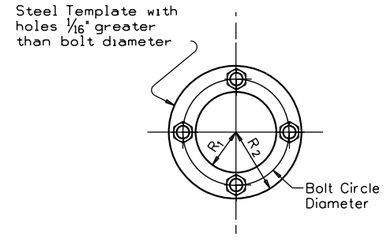


SECTION D-D



NUT ANCHOR
(TYPE 2)

ANCHOR BOLT ASSEMBLY



TEMPLATE DETAIL

ANCHOR BOLT & TEMPLATE SIZE						
Bolt Dia in.	Length ‡	Top Thread	Bottom Thread	Bolt Circle	R_2	R_1
2 1/2"	5'-2"	10"	6 1/2"	27"	16"	11"

‡ Min dimension given, longer bolts are acceptable.

FOUNDATION DESIGN TABLE													
FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		DRILLED SHAFT LENGTH-ft (16), (17), (18)			ANCHOR BOLT DESIGN (14)				FOUNDATION DESIGN LOAD (15)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
				10	15	40							
48-A	48"	20 #9	#4 at 6"	21.9	19.5	14.7	2 1/2"	55	27"	2	490	10	50' to 65' Mast arm assembly.

SEE SHEET "TS-FD" FOR ADDITIONAL DETAILS.

(14) Anchor bolt design develops the foundation capacity given under Foundation Design Laods.

(15) Foundation Design Loads are the allowable moments and shears at the base of the structure.

(16) Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.

(17) If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

(18) Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 3 of 5 — LMA(3)-12

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CONT	SECT	JOB	HIGHWAY
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DIST COUNTY SHEET NO.
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131C

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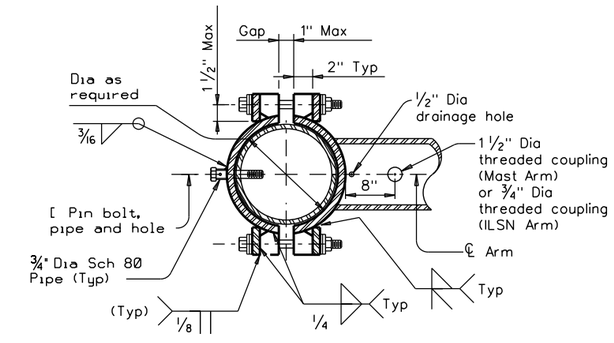
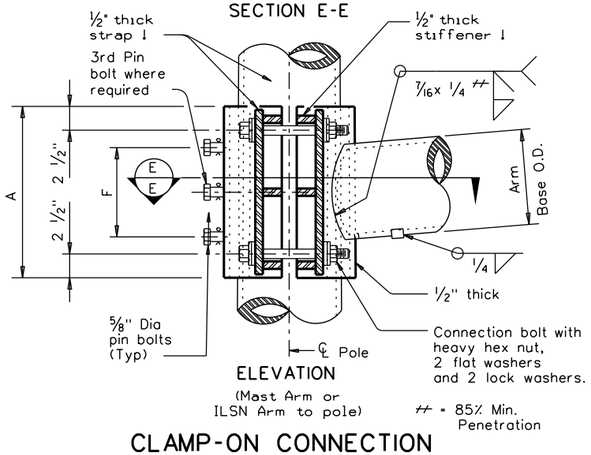


SECTION E-E



ELEVATION
(Mast Arm or ILSN Arm to pole)

CLAMP-ON CONNECTION

80 MPH WIND

Clamp-on Arm LC	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	thk (12)	Rise	L_1	D_1	D_2	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"

100 MPH WIND

Clamp-on Arm LC	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	thk (12)	Rise	L_1	D_1	D_2	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	8.0	5.3	.179	1'-8"	19.1	8.0	3.5	.179	1'-7"
24	23.1	9.0	5.8	.179	1'-9"	23.1	9.0	3.5	.179	1'-8"
28	27.1	9.5	5.7	.179	1'-10"	27.1	10.0	3.5	.179	1'-9"
32	31.0	9.5	5.2	.239	1'-11"	31.0	9.5	3.5	.239	1'-10"
36	35.0	10.0	5.1	.239	2'-0"	35.0	10.0	3.5	.239	1'-11"
40	39.0	10.5	5.1	.239	2'-3"	39.0	11.0	3.5	.239	2'-1"
44	43.0	11.0	5.1	.239	2'-8"	43.0	11.5	4.0	.239	2'-3"

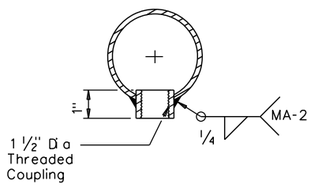
D1 = Arm Base O.D.
D2 = Arm End O.D.
L1 = Shaft Length
LC = Clamp-on Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

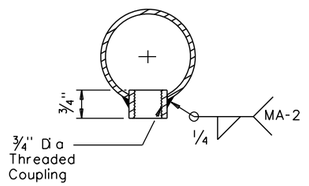
CLAMP-ON ARM CONNECTION

ILSN Arm Size		A	F	4 Conn. Bolts	5/8" Dia. Pin Bolts
Sch 40 pipe Dia	Thick			Dia	No.
in.	in.	in.	in.	in.	ea
3	.216	10	4	¾	2

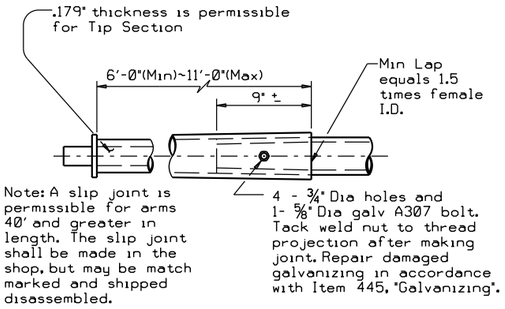
Mast Arm Size		A	F	4 Conn. Bolts	5/8" Dia. Pin Bolts
Base Dia	Thick			Dia	No.
in.	in.	in.	in.	in.	ea
6.5	.179	12	6	1	2
7.5	.179	14	8	1	2
8.0	.179	14	8	1	2
9.0	.179	16	10	1	2
9.5	.179	18	12	1 ¼	3
9.5	.239	18	12	1 ¼	3
10.0	.239	18	12	1 ¼	3
10.5	.239	18	12	1 ¼	3
11.0	.239	18	12	1 ¼	3
11.5	.239	18	12	1 ¼	3



ARM COUPLING DETAIL



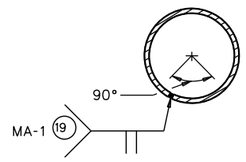
ILSN ARM COUPLING DETAIL



SLIP JOINT DETAIL(CLAMP-ON ARM)

Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 ½" Dia Threaded Coupling.

BRACKET ASSEMBLY



ARM WELD DETAIL

(19) Longitudinal Seam Weld must be oriented within the lower 90° of the signal arm.
60% Min penetration
100% penetration within 6° of circumferential base welds.

GENERAL NOTES:

Clamp-on details are used for the second arm on dual mast arm assemblies or ILSN arm support. For a clamp-on mast arm, a maximum 1 ½" wide vertical slotted hole may be cut in the front clamp plate to facilitate drainage during galvanizing. The slot shall be centered behind the arm and shall be no longer than the arm diameter minus 1". For an ILSN arm, a 1 ½" diameter hole shall be cut in the front clamp plate for wire access. A matched hole shall be field drilled through the pole to provide wire access after arm is oriented. Deburr both holes.

Where duplicate parts occur on a detail, welds shown for part shall apply to all similar parts on the detail.

Pin bolts are required to prevent rotation of clamp-on arms under design wind forces. Pin bolts shall be ASTM A325 with threads excluded from the shear plane. Pin bolt and ¾" diameter pipe shall have 3/16" diameter holes for a 1/8" diameter galvanized cotter pin. Back clamp plate shall be furnished with a ¾" diameter hole for each pin bolt. An 11/16" diameter hole for each pin bolt shall be field drilled through the pole after arm orientations have been approved by the Engineer.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 4 of 5 — LMA(4)-12

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DN: JK	CK: GRB	DW: FDN	CK: CAL

REVISIONS
4-20-01 1-12

CONT	SECT	JOB	HIGHWAY
-	-	-	MILPAS
DIST	COUNTY		SHEET NO.
PHR	HIDALGO		45

131D

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HCDA 07-22)

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Shipping Parts List

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed arm connection bolts and washers, and any additional hardware listed in the table.

Nominal Arm Length	30' Poles with Luminaire	24' Poles with ILSN	19.50' (Single Mast Arm) 20.25' (Dual Mast Arm)
	See note above plus: one (or two if ILSN attached) small hand hole, clamp-on simplex	See note above plus one small hand hole	Poles with no Luminaire and no ILSN See note above

Single Mast Arm

Lf ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
50	50L		50S		50	
55	55L		55S		55	
60	60L		60S		60	
65	65L		65S		65	

Dual Mast Arm

Lf ft.	Lc ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
50	20	5020L		5020S		5020	
	24	5024L		5024S		5024	
	28	5028L		5028S		5028	
	32	5032L		5032S		5032	
	36	5036L		5036S		5036	
	40	5040L		5040S		5040	
	44	5044L		5044S		5044	
55	20	5520L		5520S		5520	
	24	5524L		5524S		5524	
	28	5528L		5528S		5528	
	32	5532L		5532S		5532	
	36	5536L		5536S		5536	
	40	5540L		5540S		5540	
	44	5544L		5544S		5544	
60	20	6020L		6020S		6020	
	24	6024L		6024S		6024	
	28	6028L		6028S		6028	
	32	6032L		6032S		6032	
	36	6036L		6036S		6036	
	40	6040L		6040S		6040	
	44	6044L		6044S		6044	
65	20	6520L		6520S		6520	
	24	6524L		6524S		6524	
	28	6528L		6528S		6528	
	32	6532L		6532S		6532	
	36	6536L		6536S		6536	
	40	6540L		6540S		6540	
	44	6544L		6544S		6544	

Foundation Summary Table **

Location Ident.	Avg. N Blow/ft.	No. Each	Drill Shaft Length (feet) ***	Notes
				48-A
Total Drill Shaft Length				

** Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.

*** Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

Shipping Parts List

Traffic Signal Arms (Fixed Mount) (1 per pole)
Ship each arm with listed equipment attached

Nominal Arm Length ft.	Type IV Arm (4 Signals) 3 Bracket Assembly and 4 CGB Connectors Designation	Quantity
50	50IV	
55	55IV	
60	60IV	
65	65IV	

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7' Arm	
9' Arm	

Traffic Signal Arms (80 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached

Nominal Arm Length ft.	Type I Arm (1 Signal) CGB connector and 1 clamp w/bolts and washers Designation	Quantity	Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp w/bolts and washers Designation	Quantity	Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp w/bolts and washers Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	
40					40III-80	
44					44III-80	

Traffic Signal Arms (100 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached

Nominal Arm Length ft.	Type I Arm (1 Signal) CGB connector and 1 clamp w/bolts and washers Designation	Quantity	Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp Designation	Quantity	Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp Designation	Quantity
20	20I-100					
24	24I-100		24II-100			
28	28I-100		28II-100			
32			32II-100		32III-100	
36			36II-100		36III-100	
40					40III-100	
44					44III-100	

Anchor Bolt Assemblies (1 per pole) Each anchor bolt assembly consists of the following: Top and bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers and 4 nut anchor devices (type 2) per Standard Drawing "TS-FD". Templates may be removed for shipment.

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
2 1/2 "	5' - 3"	

Abbreviations
Lf= Fixed Arm Length
Lc= Clamp-on Arm Length (44' Max.)

Texas Department of Transportation
Traffic Operations Division

LONG MAST ARM ASSEMBLY PARTS LIST

LMA(5)-12

Sheet 5 of 5

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REVISIONS 4-20-01 1-12	CONT	SECT	JOB	HIGHWAY
	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		46

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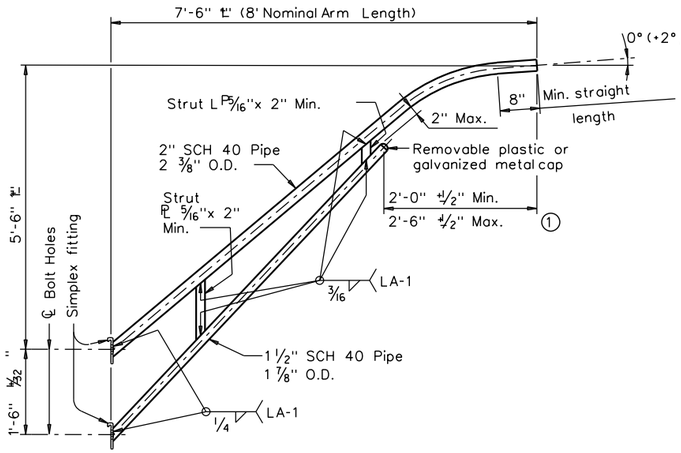
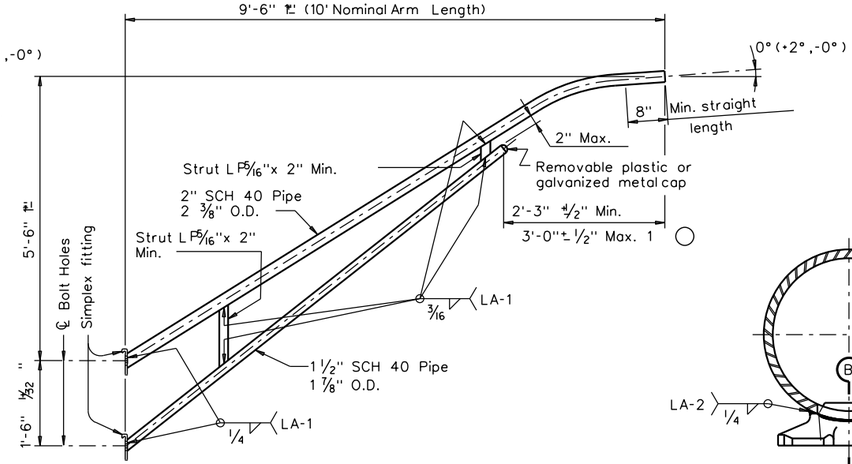
DATE: 1/30/2021 3:38:08 PM
FILE: P:\Clients\Firms\822\Las Milpas\Design\10 STANDARDS\06 Traffic Signals\LUM-A.DGN

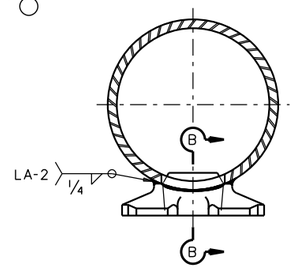
MATERIALS	
Pole or Arm Simplex	ASTM A27 Gr.65-35 or A148 Gr.80-50, A576 Gr.1021 3 ◯ or A36 (Arm only)
Arm Pipes	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50 4 ◯ or A1011 HSLAS-F Gr.50 4 ◯
Arm Strut Plates 2 ◯	ASTM A36, A572 Gr.50 4 ◯ or A588
Misc.	ASTM designations as noted



8-FOOT LUMINAIRE ARM



10-FOOT LUMINAIRE ARM



DIRECT ATTACHMENT DETAIL

1. Dimensional limits are given to show acceptable variation in design. All of a Fabricator's production of a particular arm length shall have the same dimensions within specified tolerances.
2. Any of the materials listed for plates may be used where the drawings do not specify a particular ASTM designation.
3. A576 must be suitable for forging and also meet minimum tensile strength of 65 ksi, minimum yield of 35 ksi, and elongation in 2 inches of 22 percent.
4. ASTM A572, A1008 HSLAS-F, and A1011 HSLAS-F may have higher yield strengths but shall not have less elongation than the grade indicated.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Revisions thereto. Design Wind Speed equals 90 mph plus a 1.3 gust factor. Arms are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq. ft.

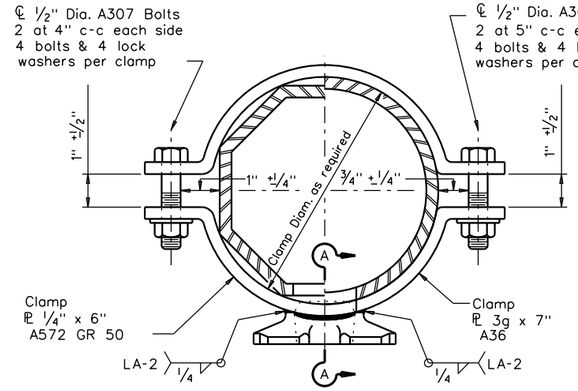
Materials and fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absense of specified Fabricaton tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.

Unless otherwise noted, all parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing".

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

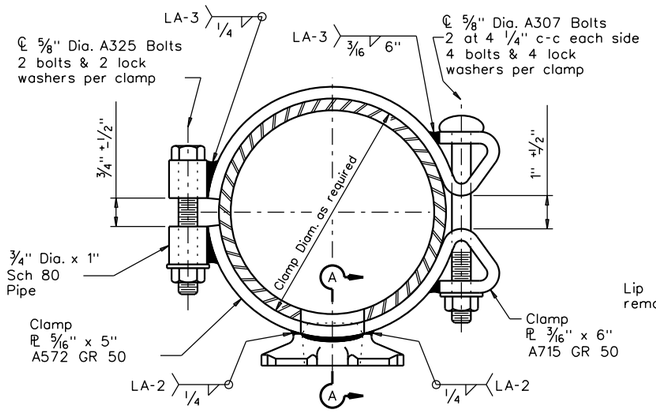
Each pole simplex fitting shall be supplied with 2 ASTM A325 bolts and 2 lock washers of the size specified. The bolts and lock washers shall be secured to the pole with the other hardware items called for in the plans. When clamp attachment is specified, the Fabricator shall ship the clamp assembly securely attached to the pole at the location shown on the plans.

If clamp assemblies are ordered without poles, the Fabricator shall ship one upper and one lower clamp assembly together in a single package, including all nuts and washers required for the clamps and simplex fittings.



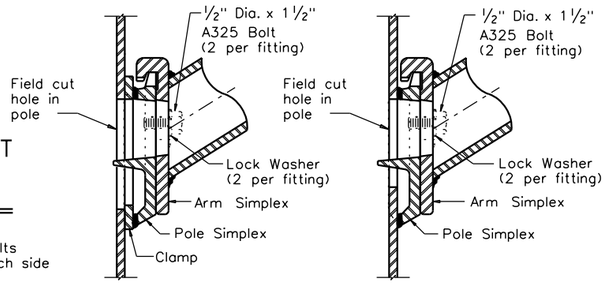
CLAMP ATTACHMENT DETAIL NO.1 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO.2 (HALF SECTION)



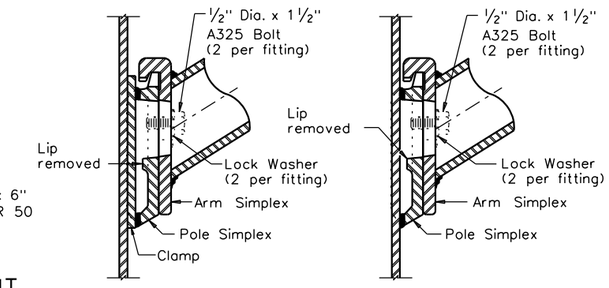
CLAMP ATTACHMENT DETAIL NO.3 (HALF SECTION)

CLAMP ATTACHMENT DETAIL NO.4 (HALF SECTION)



UPPER SIMPLEX FITTING

UPPER SIMPLEX FITTING

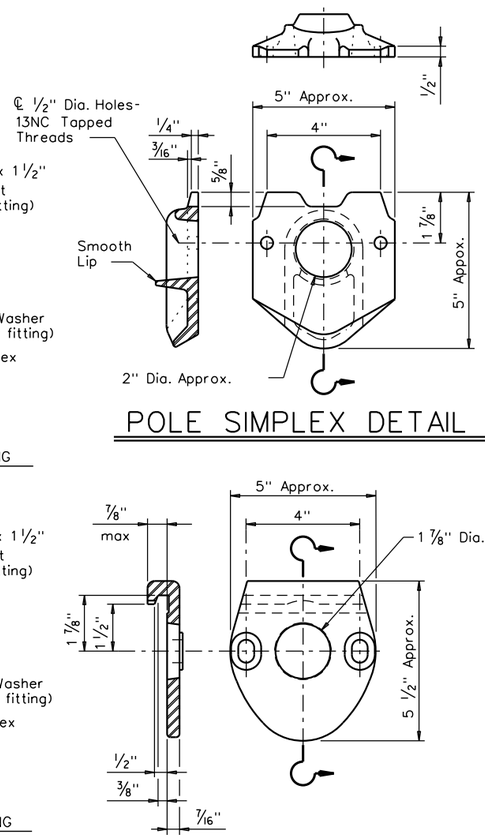


LOWER SIMPLEX FITTING

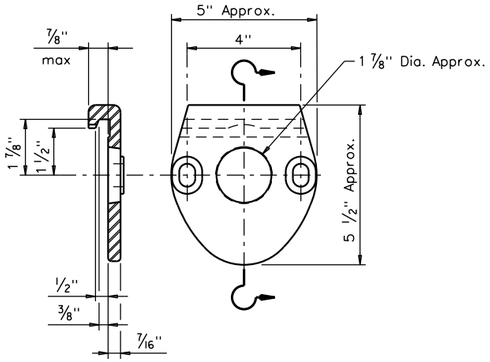
SECTON A-A

LOWER SIMPLEX FITTING

SECTON B-B



POLE SIMPLEX DETAIL



ARM SIMPLEX DETAIL

Texas Department of Transportation
Traffic Operations Division

STANDARD ASSEMBLY DRAWINGS FOR LUMINAIRE SUPPORT STRUCTURES

ARM DETAILS

LUM-A-12

© TxDOT August 1995

DN: LEH	CK: JSY	DW: LTT	CK: TEB

REVISIONS	CONT	SECT	JOB	HIGHWAY
5-96	-	-	-	MILPAS
1-99				
1-12	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		47

ELECTRICAL SERVICE DATA

Service Pole No.	Sheet No.	Electrical Service Description (see ED (4)-03)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect		Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
						Switch Amp / Fuse	Ckt. Bkr. Pole / Amp						
1 thru 5		TY T 120/240 000(NS)GS(L)TS(0)	1¼"	3/#4	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	<5.5
										ILL	1P/20	6.0	
19 thru 21		TY T 120/240 000(NS)GS(L)TS(0)	1¼"	3/#4	N/A	N/A	N/A	N/A	100	FB	1P/20	12.0	<2.2
										ILL	1P/20	6.0	

NOTES:

ENSURE MAIN SERVICE DROP IS BELOW WEATHERHEAD.

BREAKER BOX & METER BOX SHALL BE ATTACHED TO WOOD POLE BY GALVANIZED CHANNEL (SEE DETAIL "B").

BOLT BOX TO GALVANIZED CHANNEL MOUNTED FLUSH WITH POLE.

CONDUIT SHALL BE ATTACHED TO POLE WITH H.D. 2-HOLE STRAPS AND 1½"x1/4" #8 S.S. SCREW OR LAG BOLT.

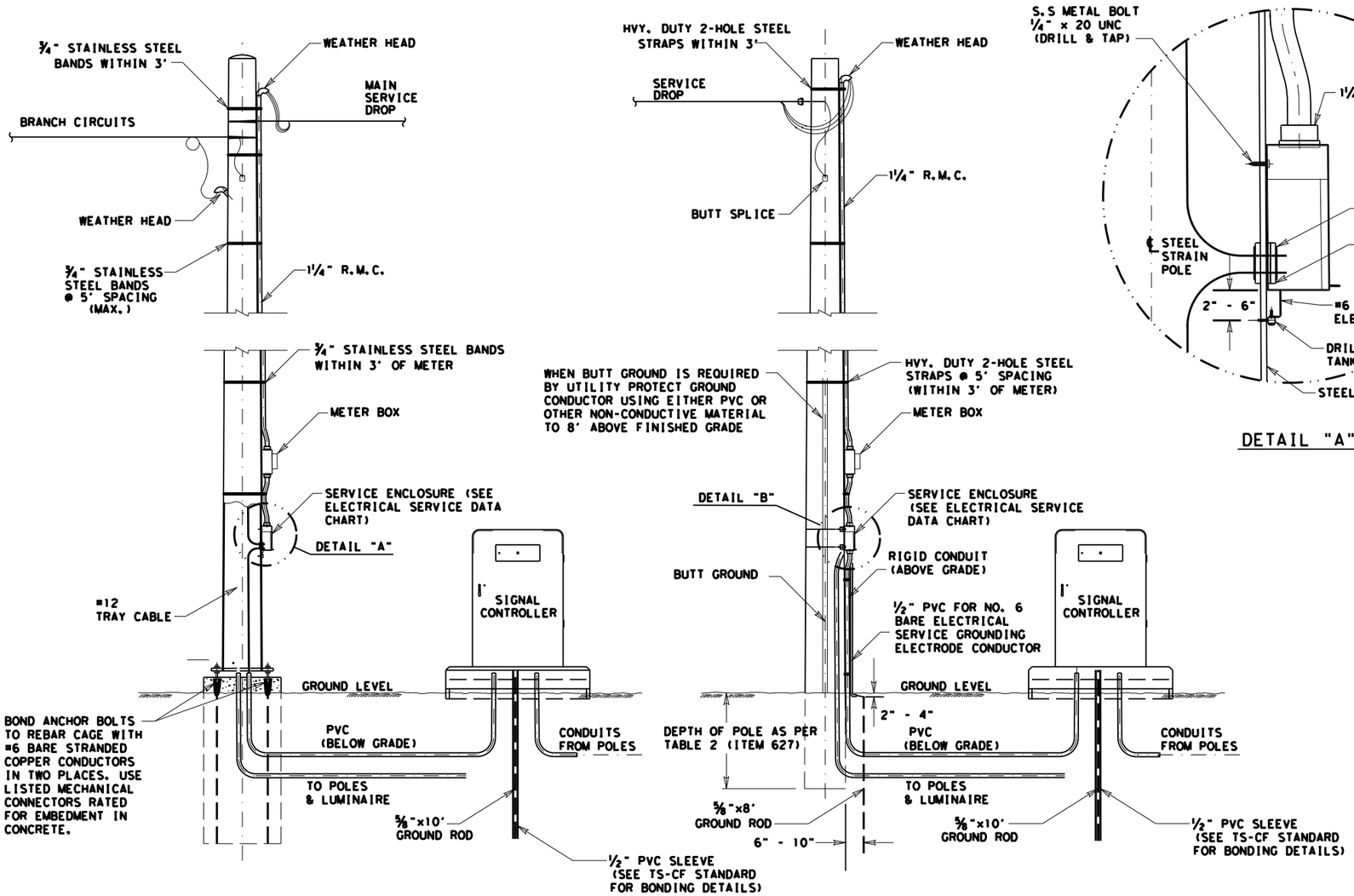
ALL EXPOSED CONDUIT SHALL BE RIGID METAL CONDUIT EXCEPT CONDUIT USED ON ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR.

WHEN SERVICE IS CONNECTED WITHIN 100' OF THE CONTROLLER, NO PULL BOX SHALL BE USED.

DISTRIBUTION TO LUMINAIRE SHALL BE OUT OF THE SERVICE BREAKER BOX. EACH LUMINAIRE SHALL HAVE A SEPARATE PHOTO CONTROL.

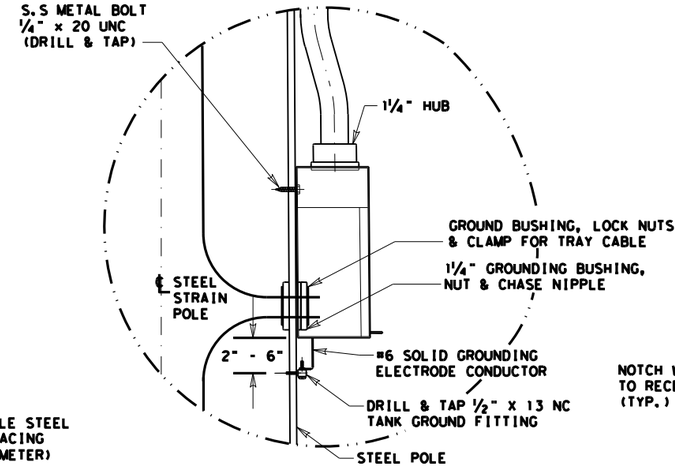
FURNISH & INSTALL 3 PRONG WEATHERPROOF LOCKTYPE BASE WITH PHOTO CELL TO CONTROL ILLUMINATION SIGN WHICH IS ATTACHED TO TRAFFIC SIGNAL SUPPORTS. LOCKBASE & PHOTO CELL SHALL BE INSTALLED ON TRAFFIC SIGNAL POLE NEAREST CABINET.

ALL CONDUIT & CONDUCTORS FROM SERVICE TO CONTROLLER CABINET SHALL BE AS PER PLANS.

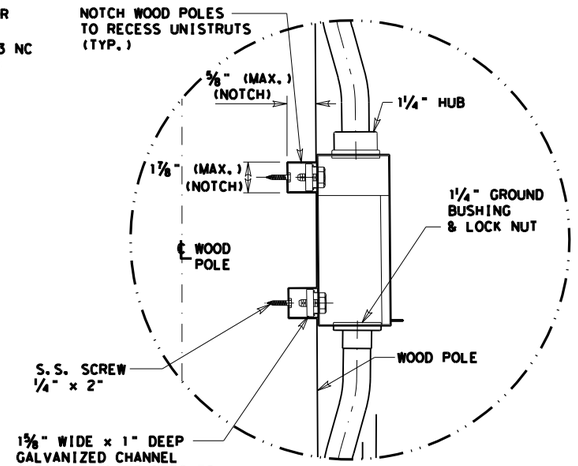


STEEL STRAIN POLE

WOOD POLE



DETAIL "A"



DETAIL "B"

ELECTRICAL SERVICE

PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

ELECTRICAL SERVICE DESIGN WITH SIGNAL CONTROLLER

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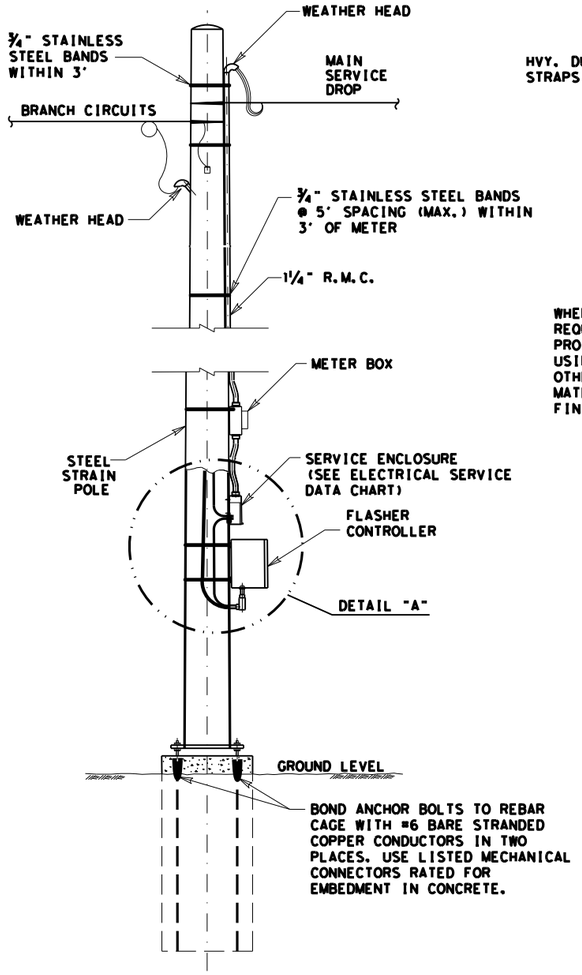
SHEET 1 OF 1

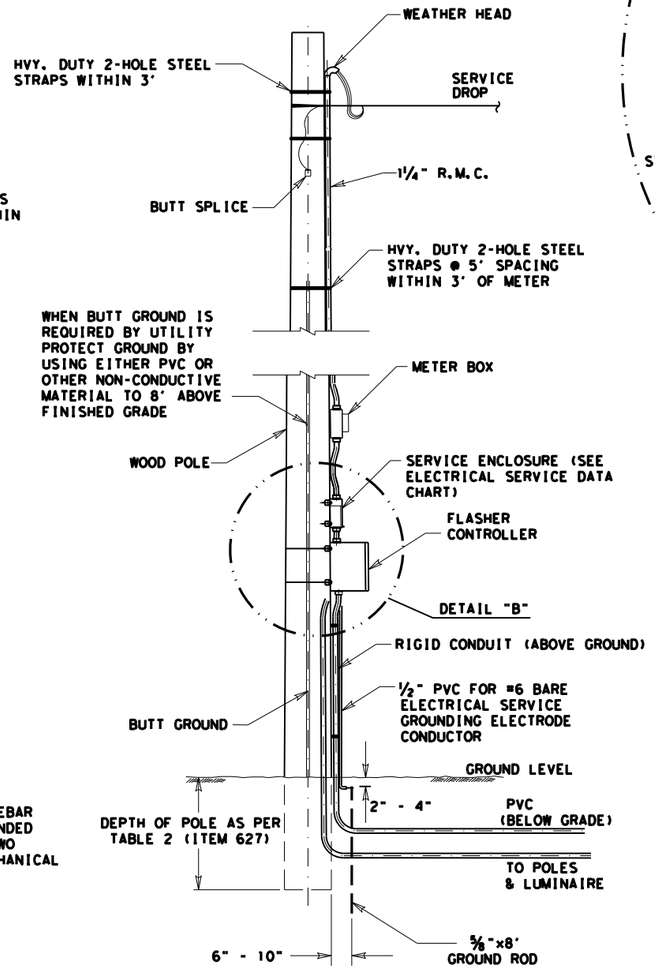
DN: OG	DRAWING	DATE	FED.RD. DIV.NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
CK DN: JSL	ORIGINAL	APR. 2010	6	TEXAS		48
DW: OG		MAY 2017	STATE DIST. NO.	COUNTY	CONTROL NO. / SECTION NO. / JOB NO.	HIGHWAY NO.
CK DW: JSL			21	HIDALGO		

ELECTRICAL SERVICE DATA

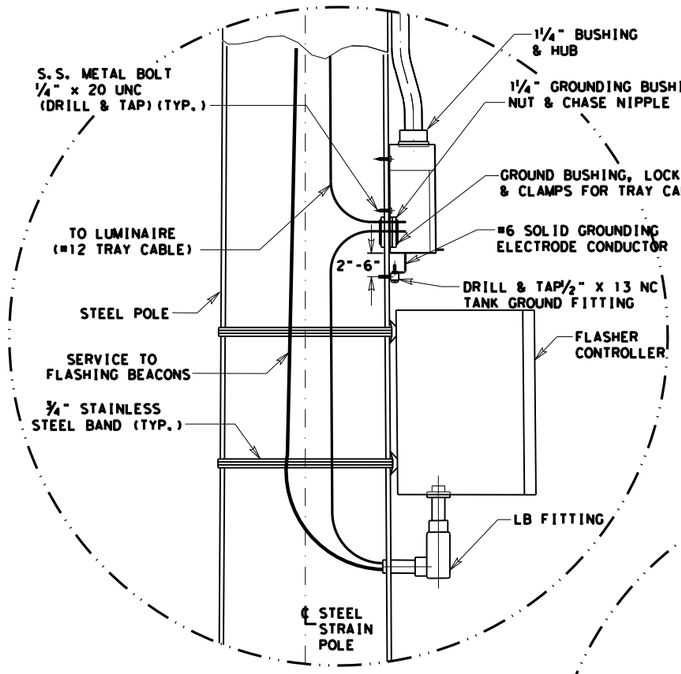
Service Pole No.	Sheet No.	Electrical Service Description (see ED (4)-03)	Service Conduit Size	Service Conductors No. / Size	Safety Switch Amps	Main Disconnect: Switch Amp/Fuse	Main Disconnect: Ckt. Bkr. Pole / Amp	Two-Pole Contactor Amps	Panelbd./ Loadcenter Amp Rating (min)	Circuit No.	Branch Ckt. Bkr. Pole / Amps	Branch Circuit Amps	KVA Load
		TY T 120/240 000(NS)GS(L)TS(O)	1¼"	3/#4	N/A	N/A	N/A	N/A	100	TS	1P/50	40.0	<5.5
										ILL	1P/20	6.0	
		TY T 120/240 000(NS)GS(L)TS(O)	1¼"	3/#4	N/A	N/A	N/A	N/A	100	FB	1P/20	12.0	<2.2
										ILL	1P/20	6.0	



STEEL STRAIN POLE
WITH FLASHER CONTROLLER



WOOD POLE



DETAIL "A"

NOTES:

ENSURE MAIN SERVICE DROP IS BELOW WEATHERHEAD.

BREAKER BOX & METER BOX SHALL BE ATTACHED TO WOOD POLE BY GALVANIZED CHANNEL (SEE DETAIL "B").

BOLT BOX TO GALVANIZED CHANNEL MOUNTED FLUSH WITH POLE.

CONDUIT SHALL BE ATTACHED TO POLE WITH H.D. 2-HOLE STRAPS AND 1½"x1/4" #8 S.S. SCREW OR LAG BOLT.

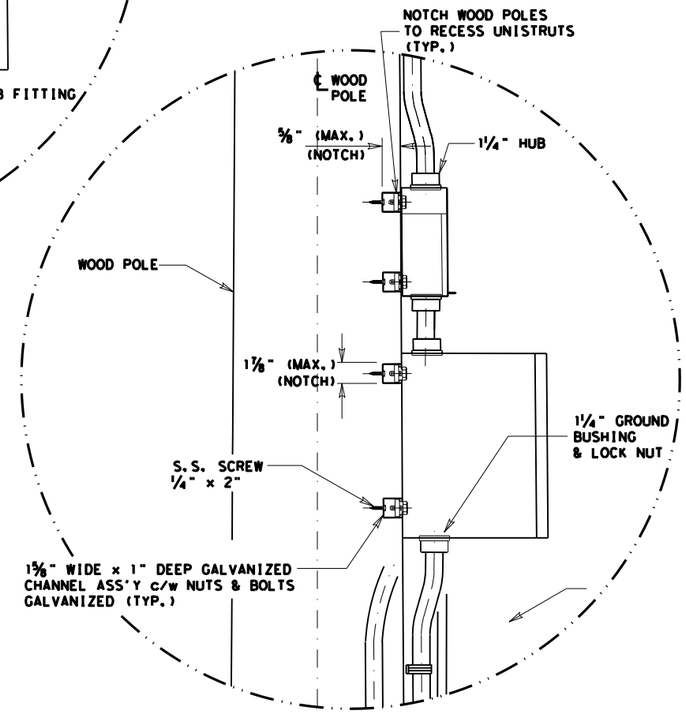
ALL EXPOSED CONDUIT SHALL BE RIGID METAL CONDUIT EXCEPT CONDUIT USED ON ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR.

WHEN SERVICE IS CONNECTED WITHIN 100' OF THE CONTROLLER, NO PULL BOX SHALL BE USED.

DISTRIBUTION TO LUMINAIRE SHALL BE OUT OF THE SERVICE BREAKER BOX. EACH LUMINAIRE SHALL HAVE A SEPARATE PHOTO CONTROL.

FURNISH & INSTALL 3 PRONG WEATHERPROOF LOCK TYPE BASE WITH PHOTO CELL TO CONTROL ILLUMINATION SIGN WHICH IS ATTACHED TO TRAFFIC SIGNAL SUPPORTS. LOCKBASE & PHOTO CELL SHALL BE INSTALLED ON TRAFFIC SIGNAL POLE NEAREST CABINET.

ALL CONDUIT & CONDUCTORS FROM SERVICE TO CONTROLLER CABINET SHALL BE AS PER PLANS.



DETAIL "B"

ELECTRICAL SERVICE

PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

ELECTRICAL SERVICE DESIGN WITH FLASHER CONTROLLER

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SHEET 1 OF 1

DN: OG	DRAWING	DATE	FED.RD. DIV.NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
CK DN: JSL	ORIGINAL	APR. 2010	6	TEXAS		49
DW: OG		MAY 2017	STATE DIST.NO.	(blank)	CONTROL SECTION NO. / JOB NO.	HIGHWAY NO.
CK DW: JSL			PHR	HIDALGO		

DA 07-12-22

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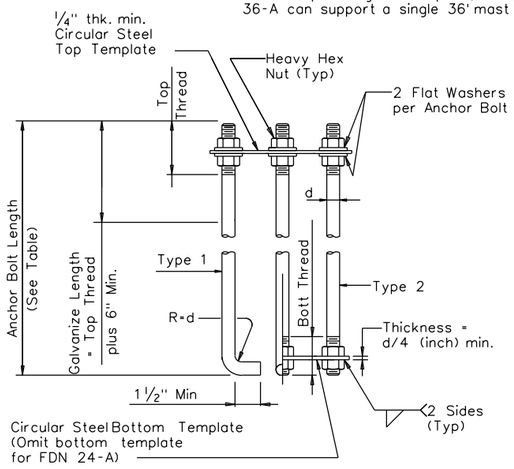
FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft 4 5 6			ANCHOR BOLT DESIGN (1)				FOUNDATION DESIGN LOAD (2)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
				10	15	40							
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	3/4"	36	12 3/4"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 1/2"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 3/4"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 1/4"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

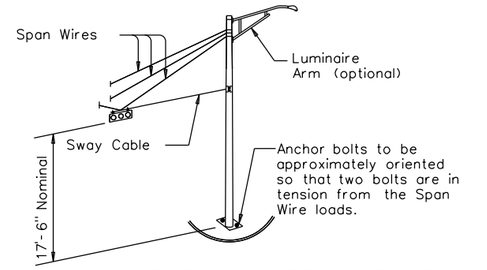
FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

		FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	32'	48'		
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 28'	32' X 32'		
			36' X 36'		
			40' X 36'		
			44' X 28'	44' X 36'	
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH		36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		24' X 24'		
			28' X 28'		
			32' X 24'	32' X 32'	
				36' X 36'	
				40' x24'	40' X 36'
					44' x 36'

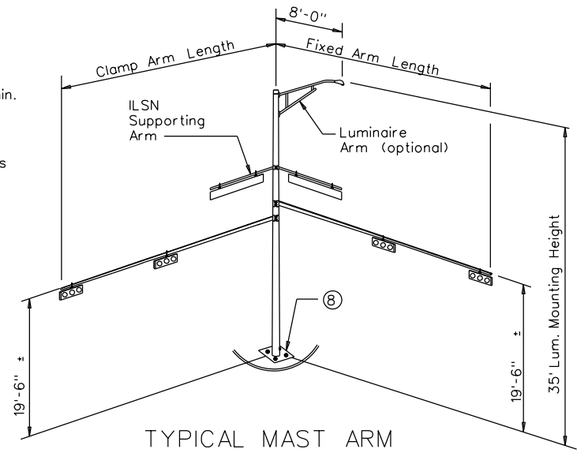
EXAMPLE:
1. For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
2. For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



ANCHOR BOLT ASSEMBLY

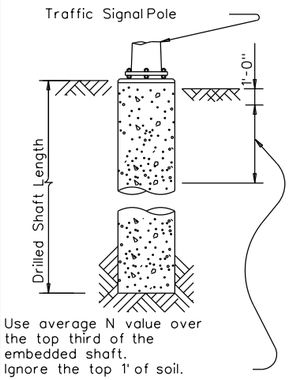


TYPICAL STRAIN POLE ASSEMBLY



TYPICAL MAST ARM ASSEMBLY

⑧ Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.



Use average N value over the top third of the embedded shaft. Ignore the top 1' of soil.

NOTES:

(1) Anchor bolt design develops the foundation capacity given under Foundation Design Loads.

(2) Foundation Design Loads are the allowable moments and shears at the base of the structure.

(3) Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.

(4) Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.

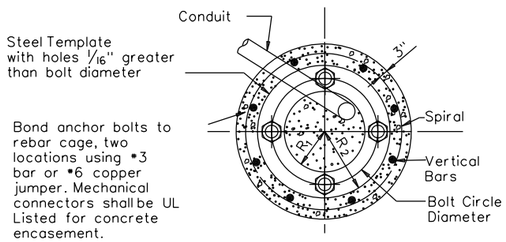
(5) If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

(6) Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

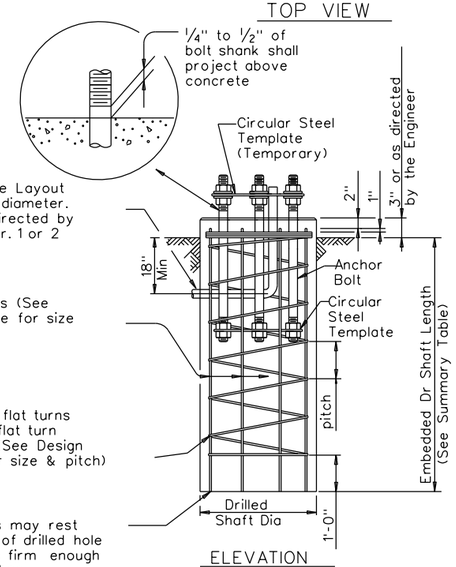
ANCHOR BOLT & TEMPLATE SIZES

BOLT DIA IN.	(7) BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
3/4"	1'-6"	3"	—	12 3/4"	7 1/8"	5 5/8"
1 1/2"	3'-4"	6"	4"	17"	10"	7"
1 3/4"	3'-10"	7"	4 1/2"	19"	11 1/4"	7 3/4"
2"	4'-3"	8"	5"	21"	12 1/2"	8 1/2"
2 1/4"	4'-9"	9"	5 1/2"	23"	13 3/4"	9 1/4"

(7) Min dimensions given, longer bolts are acceptable.



TOP VIEW



ELEVATION

FOUNDATION DETAILS

FOUNDATION SUMMARY TABLE (3)

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH (FEET) (6)				
				24-A	30-A	36-A	36-B	42-A
TOTAL DRILLED SHAFT LENGTHS								

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL POLE FOUNDATION

TS-FD-12

© TxDOT August 1995	DN: MS	CK: JSY	DW: MAO/MMF	CK: JSY/TEB
REVISIONS	CONT	SECT	JOB	HIGHWAY
5-96 11-99 1-12	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		50

128

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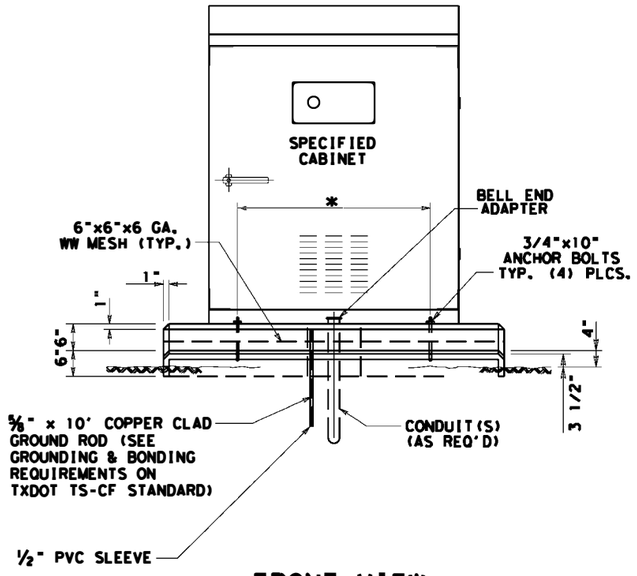
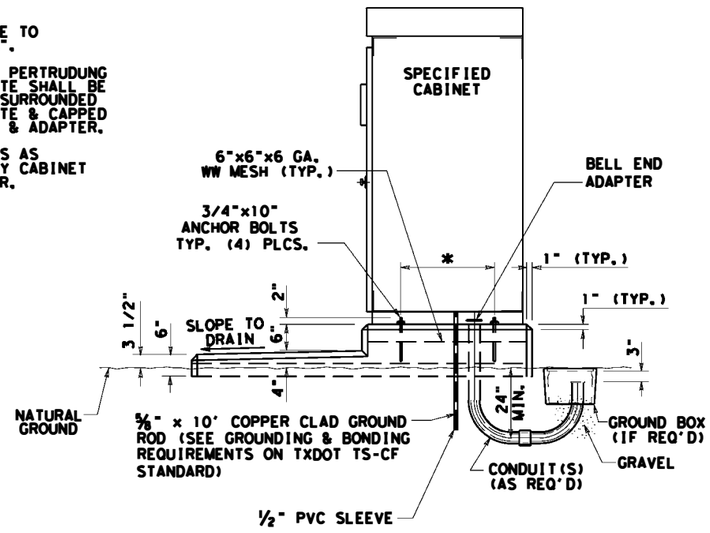


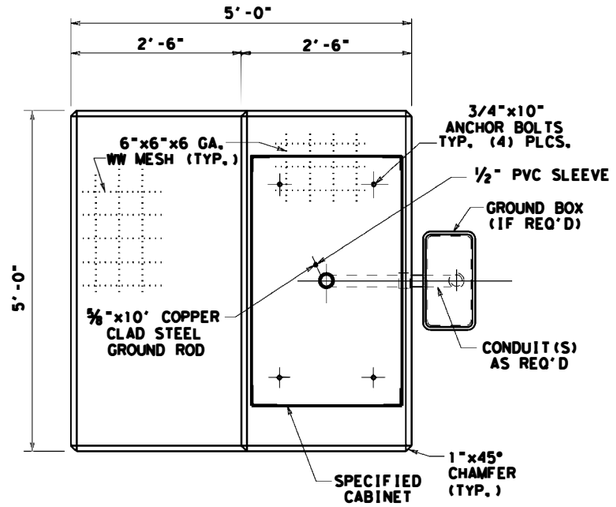
FRONT VIEW

NOTES:

1. ALL CONCRETE TO BE CLASS "A".
2. ALL CONDUIT PERTRUDUNG THRU CONCRETE SHALL BE COMPLETELY SURROUNDED WITH CONCRETE & CAPPED WITH A BELL & ADAPTER.
3. * ANCHOR BOLTS AS SPECIFIED BY CABINET MANUFACTURER.

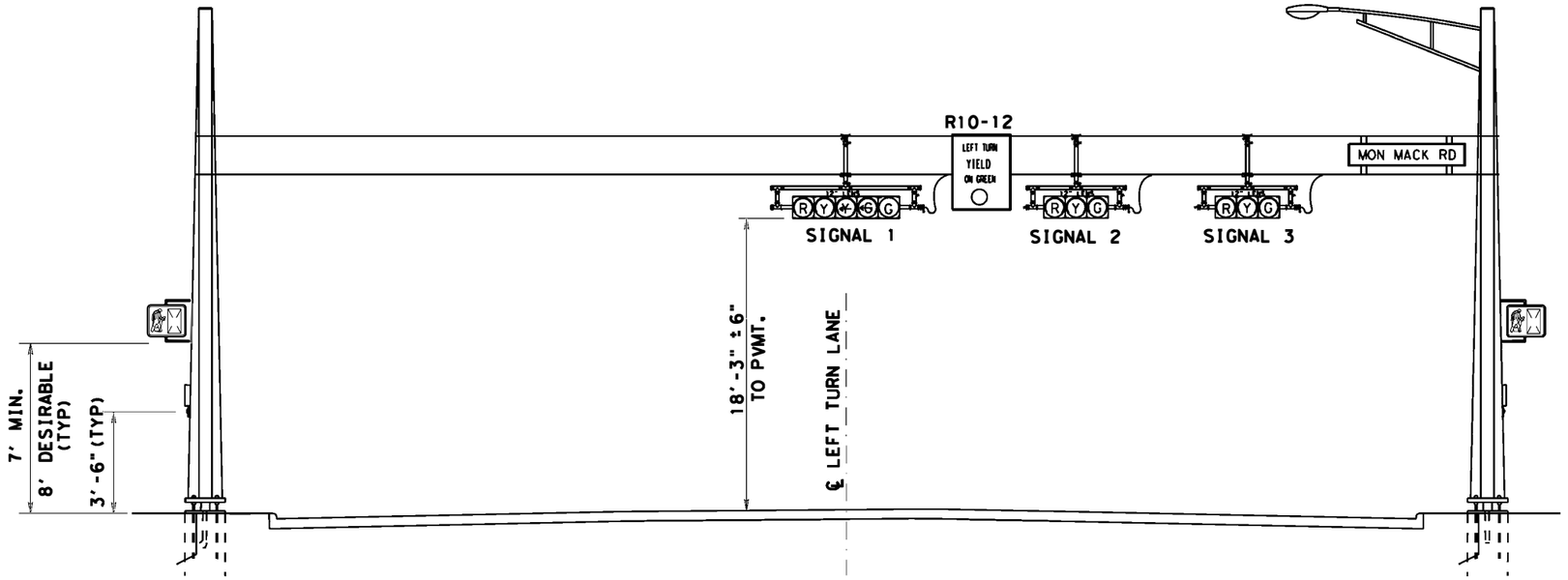


SIDE VIEW



TOP VIEW

DETAIL OF BASE MOUNT CABINET FOUNDATION



ELEVATION VIEW

DISTRICT STANDARD PLANS

TEXAS DEPARTMENT OF TRANSPORTATION

PHARR DISTRICT STANDARD

TRAFFIC SIGNAL CONSTRUCTION DETAILS

CONTROLLER FOUNDATON & LOOP DETECTOR INSTALLATION

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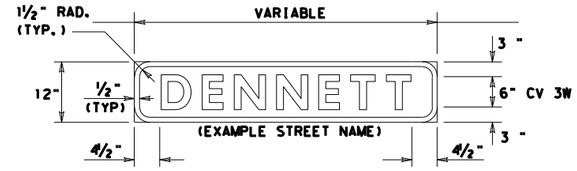
SHEET 1 OF 4

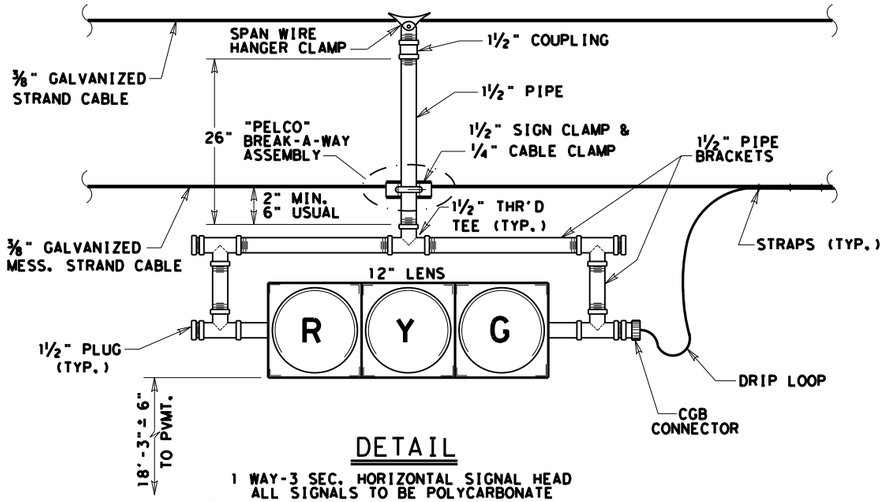
DN: OG	DRAWING	DATE	FED.RD. DIV.NO.	STATE	PROJECT NO.	SHEET NO.
CK DN: JSL	ORIGINAL	APRIL 2010	6	TEXAS		51
DW: OG	REV. JUL. 2015 AUG 2016		STATE DIST. NO.	(EQUAL)	CONTROL NO. / SECTION NO. / JOB NO.	HIGHWAY NO.
CK DW: JSL			PHARR	HIDALGO	(PRDA 07-19-22)	

D3-1



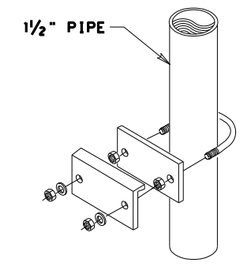
LETTERS & BORDER - WHITE (REFL)
BACKGROUND - GREEN (REFL)
MOUNT TYPE - SPAN WIRE OR MAST ARM

STREET NAME SIGN

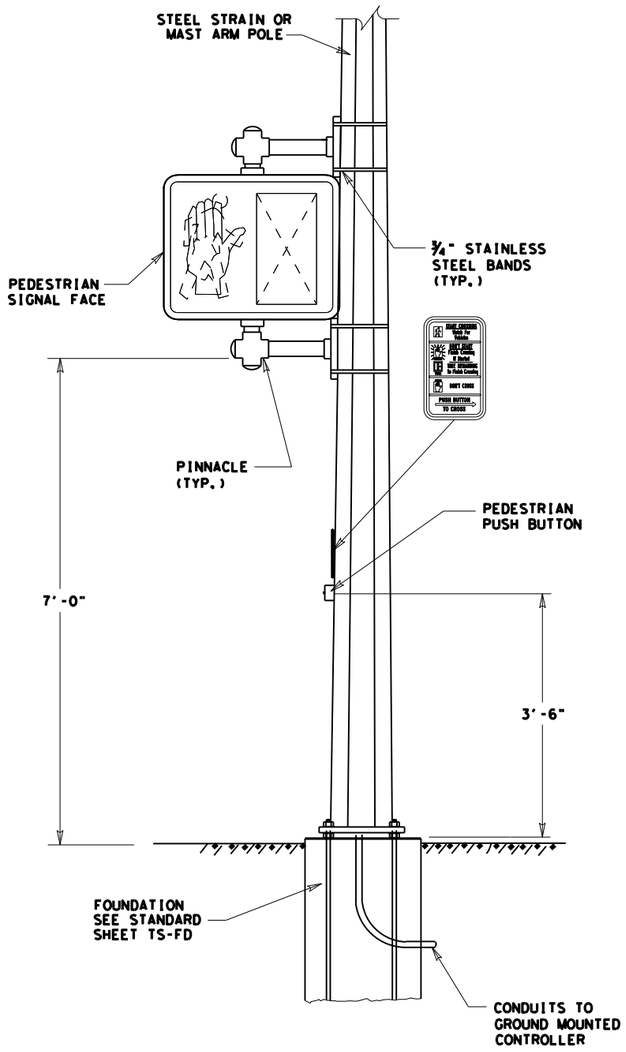


DETAIL

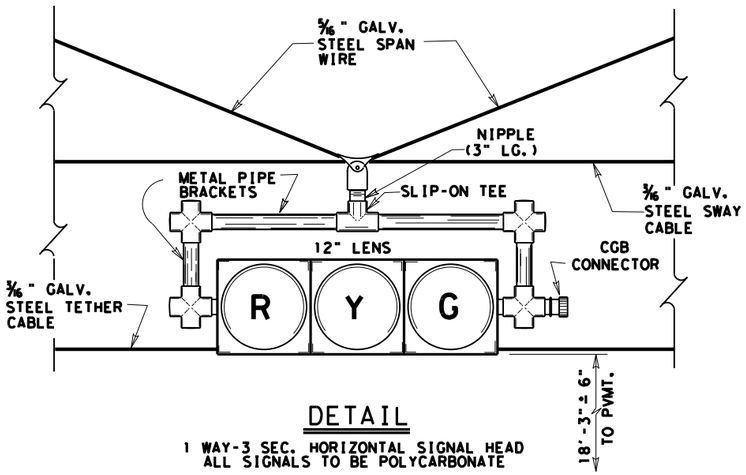
1 WAY-3 SEC. HORIZONTAL SIGNAL HEAD
ALL SIGNALS TO BE POLYCARBONATE
(TO BE USED ON SKEWED INTERSECTIONS OR WHEN SIGNAL POLES ARE NOT SQUARED TO EACH OTHER)



DETAIL-"PELCO" BREAK-A-WAY ASSEMBLY

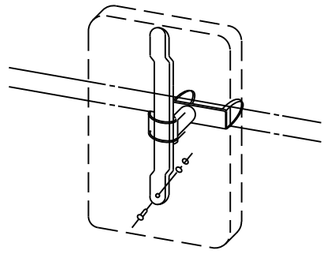


DETAIL-PEDESTRIAN SIGNALS



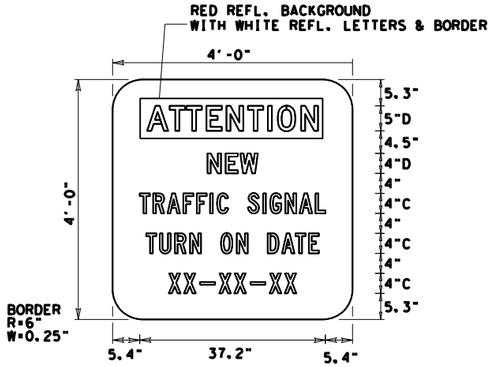
DETAIL

1 WAY-3 SEC. HORIZONTAL SIGNAL HEAD
ALL SIGNALS TO BE POLYCARBONATE

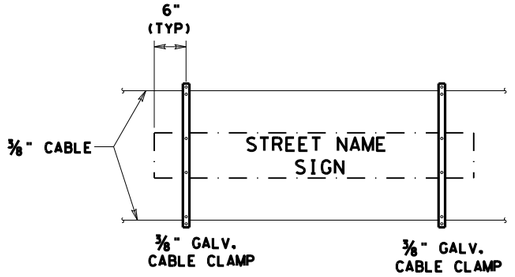


SIGN BRACKET

NOTE: THESE BRACKETS, USED IN PAIRS FOR LONGER SIGN, OR IN SINGLE UNITS FOR SMALLER SIGNS.



SPECIAL SIGN DETAIL



STREET NAME SIGN MOUNTING DETAIL

DISTRICT STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
PHARR DISTRICT STANDARD

TRAFFIC SIGNAL CONSTRUCTION DETAILS
MISCELLANEOUS DETAILS

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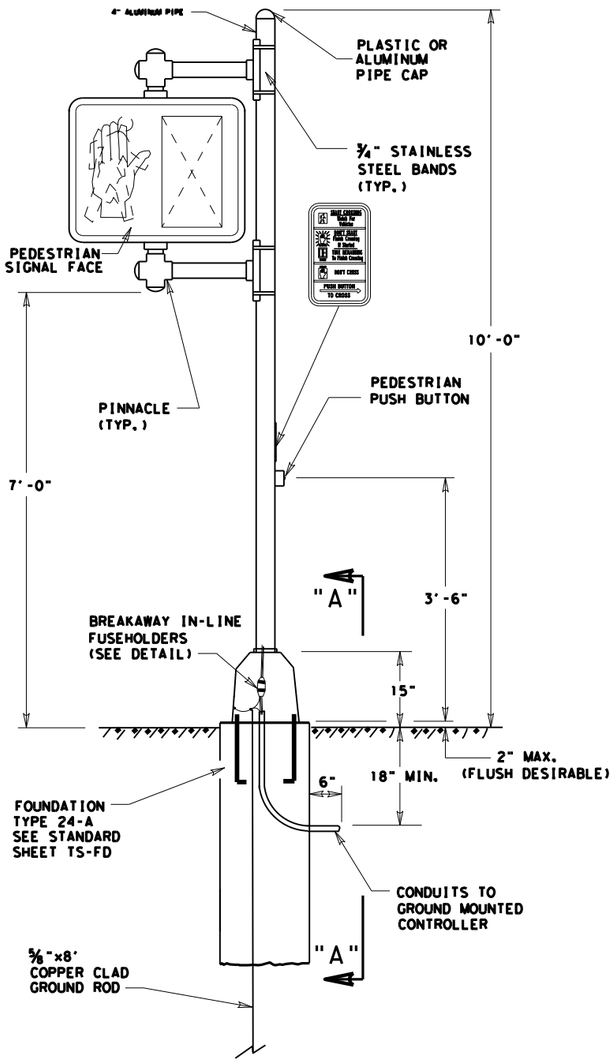
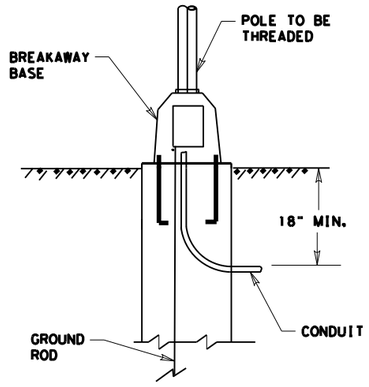
SHEET 2 OF 4

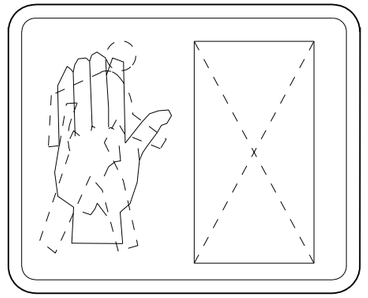
DN: OG	CK DN: JSL	DW: OG	CK DW: JSL	DRAWING	DATE	FED.RD. DIV.NO.	STATE	PROJECT NO.	SHEET NO.
				ORIGINAL	APRIL, 2010	6	TEXAS		52
				REV. MAY 2016 AUG 2016		STATE DIST. NO.	COUNTY	CONTROL NO. / SECTION NO. / JOB NO.	HIGHWAY NO.
						PHARR	HIDALGO	(HIDA 07-12)22	



PEDESTAL POLE DETAIL



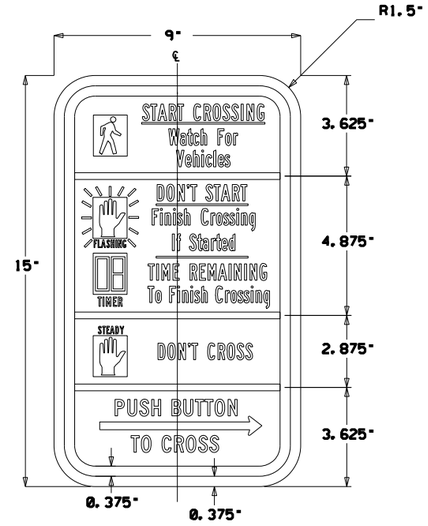
SECTION "A A"

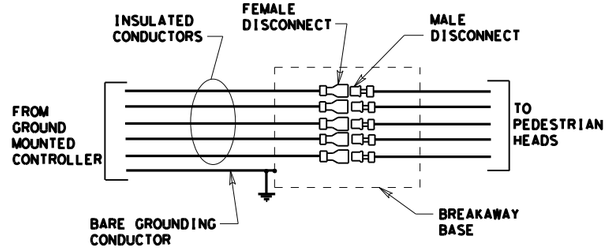


18"x16" LED PEDESTRIAN SIGNAL HEAD w/COUNTDOWN

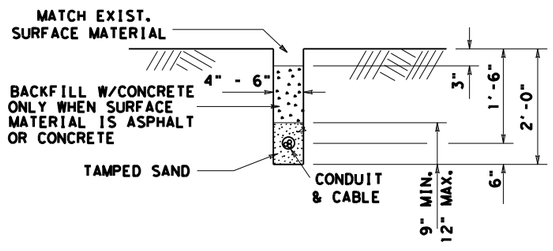
- LEGEND:
  BLACK
- BACKGROUND:
  WHITE (RETROREFLECTIVE)
- 08. HAND SYMBOL:
  ORANGE (RETROREFLECTIVE)
  ON BLACK
- PEDESTRIAN SYMBOL:
  WHITE (RETROREFLECTIVE)
  ON BLACK

NOTE:
REFER TO THE STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD) FOR MORE DETAILS AND DIMENSIONS REGARDING SIGN R10-3e



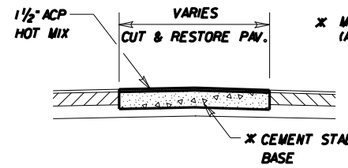


BREAKAWAY IN-LINE FUSEHOLDERS



NOTE:
ALL TRENCHES ARE TO BE MADE ONLY PARALLEL TO THE STREET. ALL CONDUIT RUNS CROSSING THE STREET SHALL BE PUSHED AND NO CUTS MADE IN THE SURFACE.

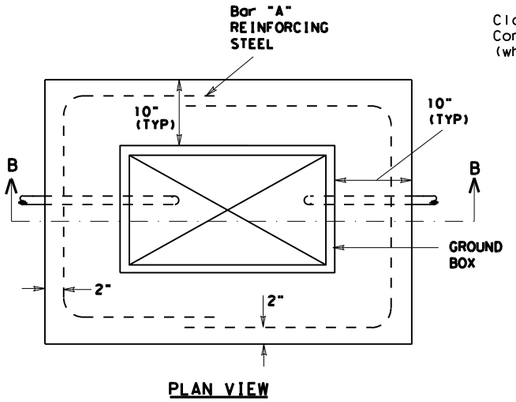
DETAIL - TRENCH LAY CONDUIT

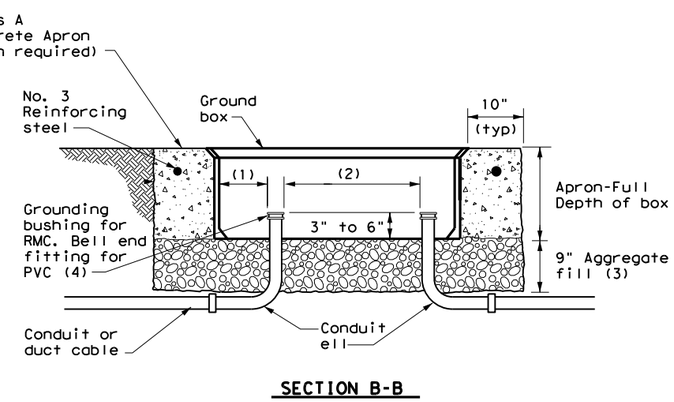


DETAIL - CUT AND RESTORE PAVEMENT

NOTES:

1. BREAKAWAY ELECTRICAL QUICK-DISCONNECTS SHALL BE WATERTIGHT BUSSMANN HEB SERIES OR EQUAL.
2. DRILL POLE FOR WIRE ENTRY. USE BUSHING OR RUBBER GROMMET TO PROTECT CONDUCTORS.
3. POLE SHAFT SHALL BE ONE PIECE SCHEDULE 40 ALUMINUM PIPE, ASTM B429 OR B221 (ALLOY 6601-T6), DO NOT USE ALUMINUM CONDUIT.





APRON FOR GROUND BOXES

(Where required)

DISTRICT STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
PHARR DISTRICT STANDARD

TRAFFIC SIGNAL CONSTRUCTION DETAILS

MISCELLANEOUS DETAILS

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SHEET 3 OF 4

DN: OG	DRAWING	DATE	FED.RD. DIST.NO.	STATE	PROJECT NO.	SHEET NO.
CK DN: JSL	ORIGINAL	APR. 2010	6	TEXAS		53
DW: OG	REV.	JUL. 2015 MAY 2016 AUG 2016 APR 2017	STATE DIST. NO.	COUNTY	CONTROL NO. / SECTION NO. / JOB NO.	HIGHWAY NO.
CK DW: JSL			PHARR	HIDALGO	(MCIDA 07-12-22)	

NOTES:

1. - THE CONTRACTOR SHALL INSTALL STEEL STRAIN POLES, LUMINAIRES, FLASHING BEACON HEADS, SIGNAL CABLES AND SPAN WIRE AS SHOWN.

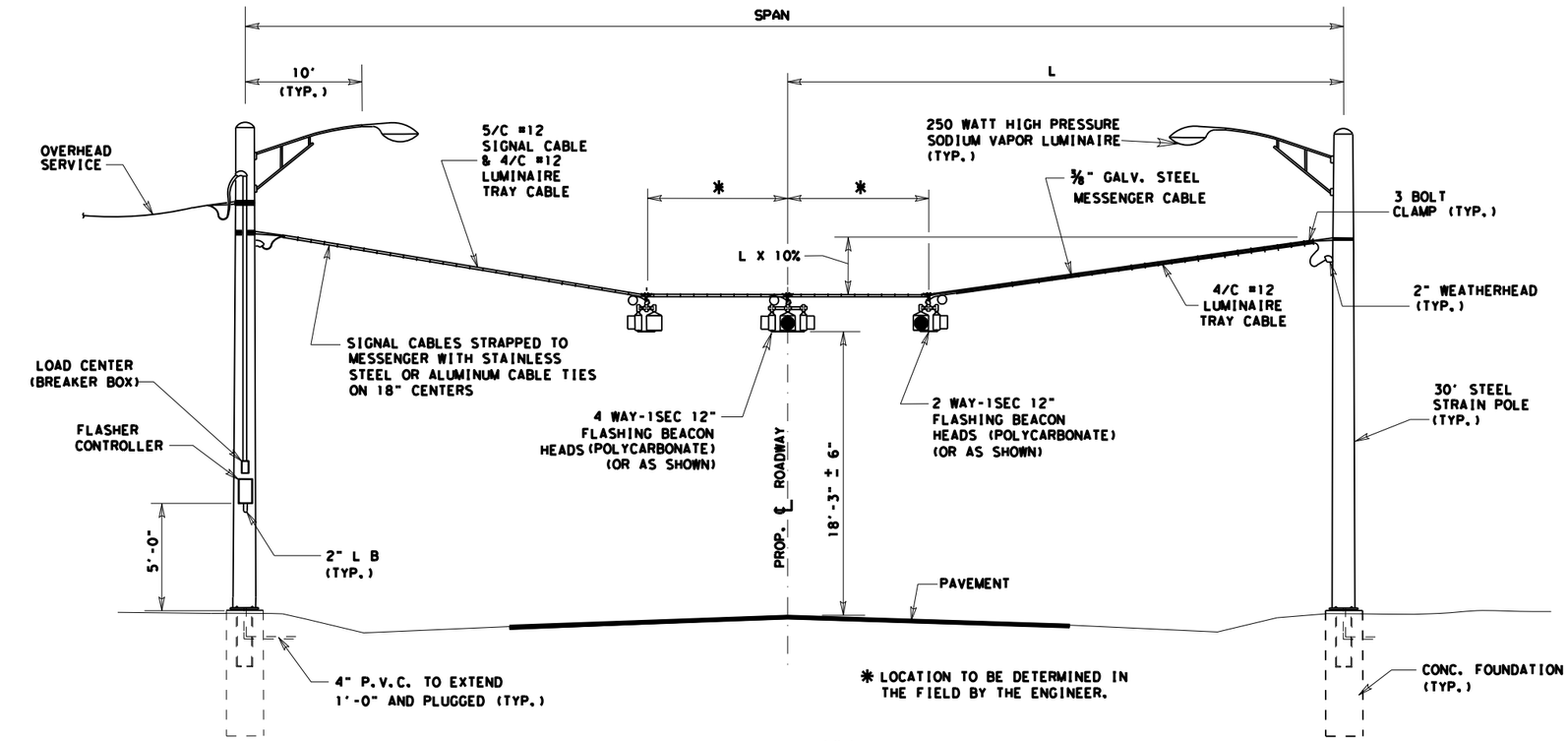
2. - THE LOCATIONS SHOWN FOR THE STEEL STRAIN POLES IS APPROXIMATE. THEIR EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER IN COORDINATION WITH THE PHARR DISTRICT SIGNAL SHOP.

3. - THE EXACT LOCATION OF ALL KNOWN UNDER-GROUND UTILITIES IS NOT CERTAIN. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UNDERGROUND UTILITIES BEFORE DRILLING FOR STEEL POLE FOUNDATIONS AND SERVICE POLES.

4. - SIGNAL CABLE SHALL BE #12 AWG AND SERVICE CABLE SHALL BE #6 AWG.

5. - THE CONTRACTOR SHALL FURNISH NEW LED TRAFFIC SIGNAL LAMPS FOR ALL FLASHING BEACON HEADS.

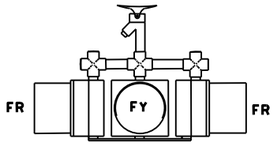
6. - THE LUMINAIRES SHALL BE EQUIPPED WITH PHOTO ELECTRIC CELLS FOR THEIR OPERATION.



NOTE:
ALL FLASHING BEACONS SHALL FLASH SIMULTANEOUSLY FOR EACH APPROACH.

TYPICAL FLASHING BEACON INSTALLATION

NOT TO SCALE



DETAIL
4 WAY-1 SEC.
12" FLASHING BEACON HEAD
(OR AS SHOWN)

DISTRICT STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
PHARR DISTRICT STANDARD

TRAFFIC SIGNAL
CONSTRUCTION DETAILS
MISCELLANEOUS DETAILS

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SHEET 4 OF 4

DN: OG	DRAWING	DATE	FED.RD. DIV.NO.	STATE	PROJECT NO.	SHEET NO.
CK DN: JSL	ORIGINAL	APR. 2010	6	TEXAS		54
DW: OG			STATE DIST. NO.	COUNTY	CONTROL NO. / SECTION NO. / JOB NO.	HIGHWAY NO.
CK DW: JSL			PHARR	HIDALGO	(RMDA 07-12-22)	

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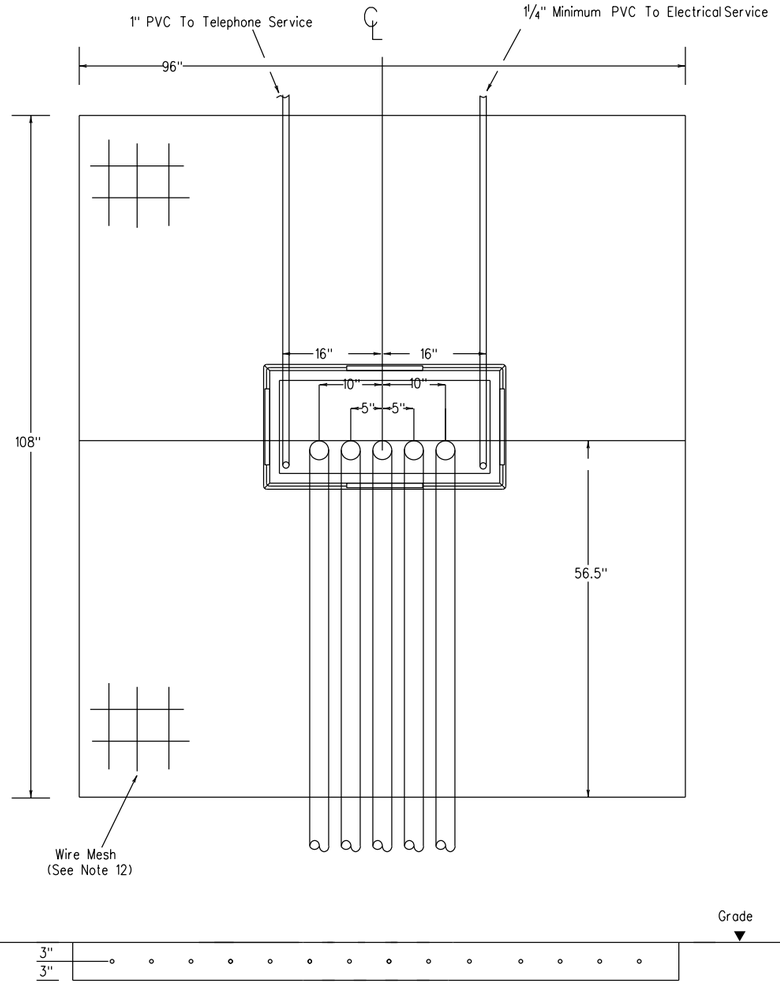
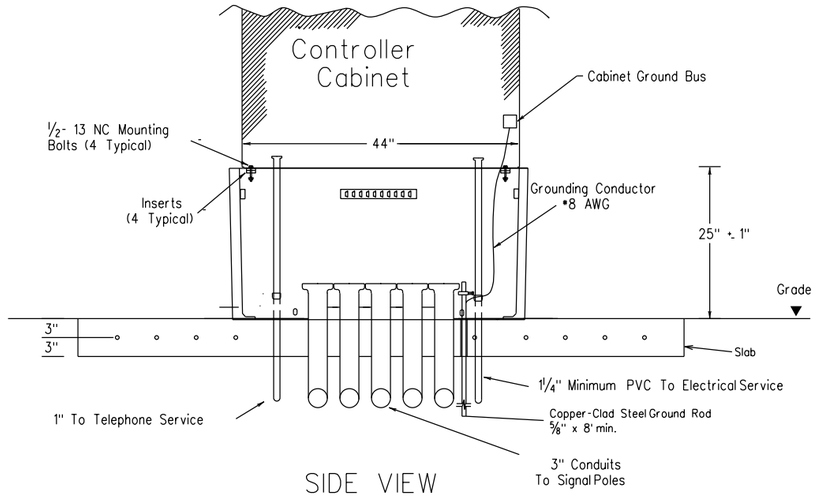
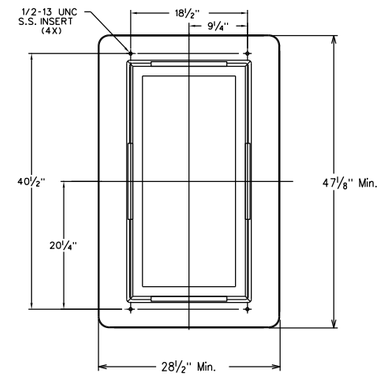
TOP VIEW
(Slab & Base)





SIDE VIEW
(Slab & Base)



CABINET BASE

TRAFFIC SIGNAL CONTROLLER BASE:

1. Provide a traffic signal controller base (cabinet base) manufactured of polymer concrete material consisting of calcareous and siliceous stone; glass fibers and thermoset polyester resin. The polymer concrete cabinet base must be reinforced on the inside of the cabinet base with fiberglass matting. Provide one of the following bases: Armorcast Part # A6001848X24, Quazite Model # PG3048Z709, or other as approved by TxDOT Traffic Operation Division.
2. The polymer concrete material must have a minimum compressive strength of 10,300 pounds per square inch (psi), minimum flexural strength of 3600 psi, and minimum shear strength of 3600 psi.
3. The polymer concrete cabinet base must conform to the dimensions shown and must accommodate a standard TxDOT basemount cabinet.
4. Supply the cabinet base with four ½"-13 UNC stainless steel inserts for attachment of the cabinet to the base. Inserts must withstand a minimum torque of 50 ft-lb and a minimum straight pull out strength of 750 lbs.
5. Provide the cabinet base with 4 cable racks mounted one on each side of the base 2" to 7 " from the top edge of the base. Unless approved otherwise, cable racks must be 1-1/2 x 3/16 x 3/16 inch steel channel with eight T-slots spaced at 1-1/2 inches. The cable racks must easily accommodate the insertion of tie wraps to attach field wiring to the racks to serve as strain relief. Secure cable racks to the base using ½"-13 UNC stainless steel screws and inserts.
6. The cabinet base, when secured to the concrete slab with controller cabinet attached, must withstand a minimum wind load of 125 mph or a 850 lb force applied at 49" above the bottom of the base without causing the base or cabinet to come out of their anchored position or cause any permanent deformation. The manufacturer must supply certification by an independent testing laboratory or sealed by a Texas Licensed Professional Engineer. Provide the cabinet base with hardware for attachment to a concrete slab.
7. The traffic signal base must be permanently marked either by impress or by permanent ink with the manufacturer's model number and name or logo.
8. Seal the base to the concrete with a silicone caulk bead and fastened to the slab per manufacturer's instructions.

CONCRETE SLAB:

9. Traffic signal controller pad must be a portland cement concrete slab poured in place, must conform to the dimensions shown, and must be level.
10. Bond a #8 AWG copper ground wire and an 8 ft ground rod bonded to the reinforcing mesh by a suitable UL Listed clamp and terminated to the cabinet grounding bus for the purpose of providing a local ground for the electrical grounding conductor. The electrical grounding conductor specified in Item 680-3.A.4 is required and must be terminated to the cabinet ground bus.
11. Install a PVC sleeve to prevent the ground rod from direct embedment in the slab.
12. Provide welded wire mesh 6X6-W2.9 X W2.9 for reinforcement. Provide joints and splices in the mesh with a minimum 6-inch overlap. Center the mesh between top and bottom and provide a minimum 3 inch cover on the edges.
13. Provide Class B concrete minimum for the slab in accordance with Item 421. Construct the slab in accordance with Item 531.

CONDUITS:

14. Stub up and run 3-inch conduits through the slab to the various traffic signal poles and ground boxes as shown on the layouts. Install the number of conduits as shown on layouts plus two additional 3 inch conduits for future use. Terminate the conduits with a bushing between 2 and 4-inches above the slab.
15. Extend conduits for future use at least 18-inches from the edge of the slab, terminate underground with a coupling, and cap and seal so that the seal can be removed without damaging the coupling. This must also apply to unused telephone conduit.
16. Stub up two separate conduits through the slab from the electrical and telephone services. Run the conduit for the electrical feed directly to the electrical service enclosure. Run the conduit for the telephone line directly to the telephone service, usually located on the same pole as the electrical service. Telephone must not under any circumstance share a conduit with any other function.
17. Terminate electric and telephone conduits above the slab with a coupling. After the base is installed, extend the conduits above the top of the base and secure to the base using a steel one-hole strap or similar suitable substitute.

CONTROLLER CABINET:

18. Anchor the controller cabinet to the base using four stainless steel 1/2-13 NC bolts.
19. The silicone caulk bead specified in Item 680.3.B must be RTV 133.

PAYMENT:

20. Bid TS-CF as subsidiary to Item 680.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL CONTROLLER CABINET BASE AND PAD

TS-CF-04

©TxDOT October 2000	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
12-04	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		55

132

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"
(HCDA 07-12-22

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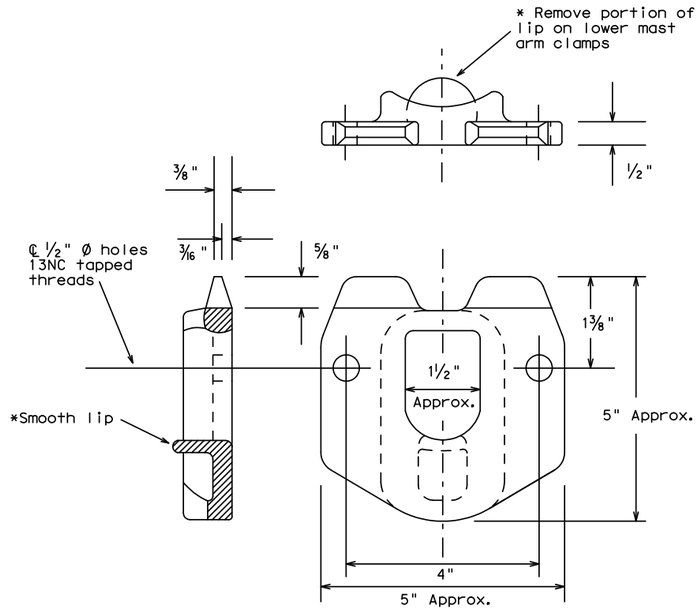
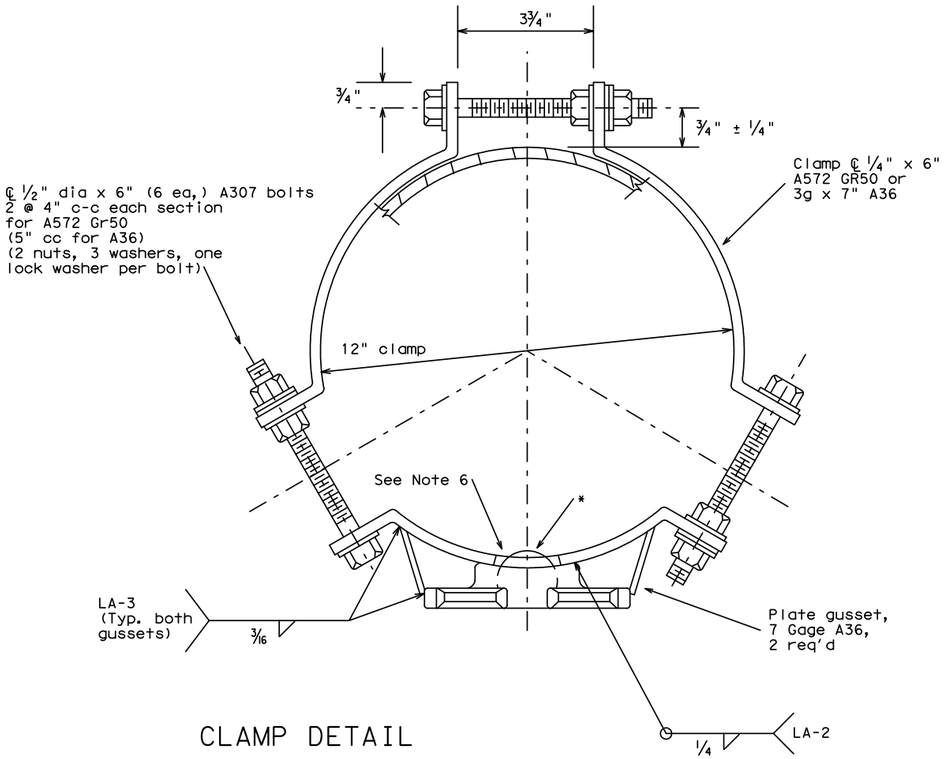
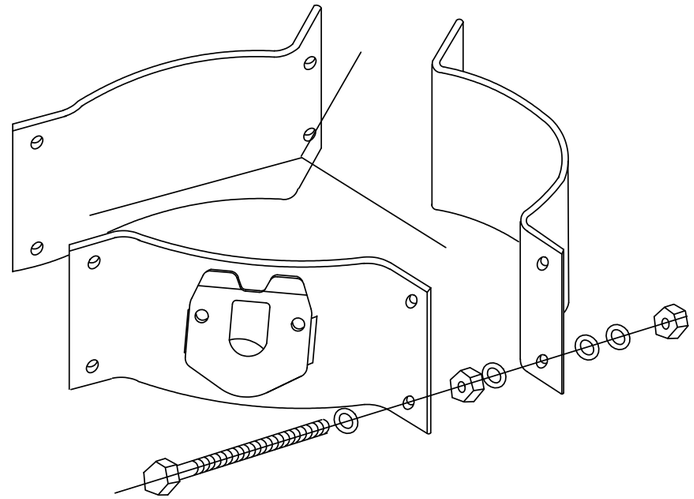


POLE SIMPLEX DETAILS



CLAMP DETAIL



PROJECTION

OTHER MATERIALS:

1. Pole simplex shall be ASTM A27 GR65-35 or A148 GR80-50 or A576 GR1021. ASTM A576 must be suitable for forging and also meet minimum tensile of 65ksi, minimum yield of 35ksi, and a minimum elongation of 22 percent in 2 inches.
2. Welded tabs and backplates shall be ASTM A-36 steel or better.
3. Nylon insert locknuts shall conform to ASTM A563.

GENERAL NOTES:

1. Materials and fabrication shall be in accordance with Standard Sheet "MA-C" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. In the absence of specified fabrication tolerances, dimensions shall be within the tolerances generally obtainable in normal fabrication practice.
2. All parts shall be galvanized after fabrication in accordance with Item 445, "Galvanizing". The throat of the Simplex shall be made free of all rough or sharp edges resulting from the galvanizing process.
3. Each simplex fitting shall be supplied with 2 ASTM A325 bolts, ½in. X 1½in. and 2 lock washers. The bolts and lock washers shall be secured to the clamp with the other hardware items. The Fabricator shall ship clamp assembly together in a single package, including all bolts, nuts, and washers required for the clamp and simplex fitting.
4. Design conforms to 1994 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals" and interim revisions thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor. Clamps are designed to support a 60 lb. luminaire having an effective projected area (actual area times drag coefficient) of 1.6 sq.ft.,12 ft. maximum arm length.
5. Each assembly shall consist of one upper piece simplex fitting having a smooth lip and one lower piece simplex fitting with the lip removed.
6. Approximately 2 in. diameter hole in upper mast arm clamp.

For 8.9 - 12 inch diameter Signal Poles
(Two req'd for each mast arm)

Texas Department of Transportation
Traffic Operations Division

CLAMP ON FITTING ASSEMBLY FOR LUMINAIRE MAST ARM

CFA-12

© TxDOT	DN: KAB	CK: RES	DW: FDN	CK: CAL
REVISIONS	CONT	SECT	JOB	HIGHWAY
11-99				
1-12				
	DIST	COUNTY		SHEET NO.
				56

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DATE:
FILE:

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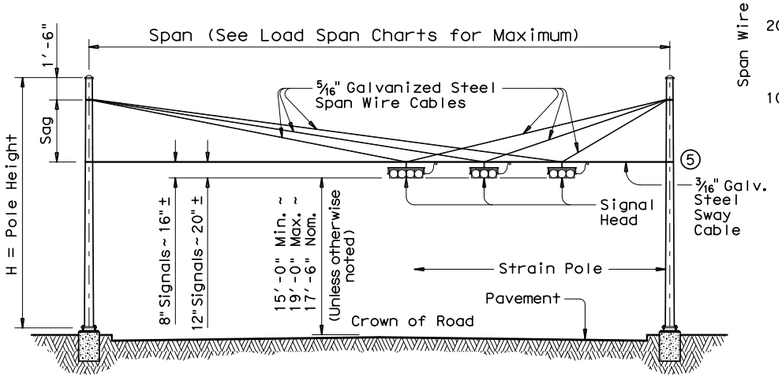
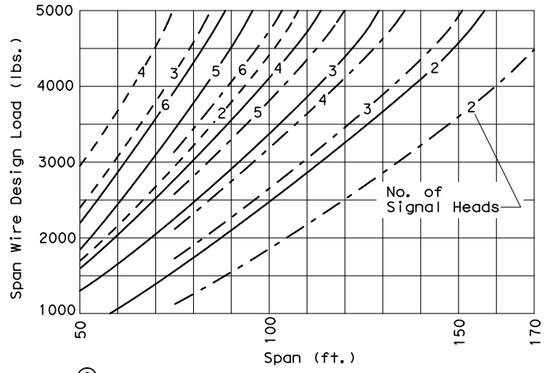
STRAIN POLE DESCRIPTION	Pole Type	Found-ation Type	Maximum Permissible Span Wire Load (lbs.)
26′ Pole	A	36-A	4900
30′ Pole	B	36-A	4300
30′ Pole with Lum.	B	36-A	4000
30′ Pole with 20′ Mast Arm	C	36-B	4400
30′ Pole with 24′ Mast Arm	C	36-B	4000
30′ Pole with 28′ Mast Arm	C	36-B	3600
30′ Pole with 32′ Mast Arm	C	36-B	3300
30′ Pole with 36′ Mast Arm	C	36-B	2900
30′ Pole with 20′ Mast Arm & Lum.	C	36-B	4100
30′ Pole with 24′ Mast Arm & Lum.	C	36-B	3800
30′ Pole with 28′ Mast Arm & Lum.	C	36-B	3400
30′ Pole with 32′ Mast Arm & Lum.	C	36-B	3000
30′ Pole with 36′ Mast Arm & Lum.	C	36-B	2500
34′ Pole	D	36-B	5200
34′ Pole with Lum.	D	36-B	4900

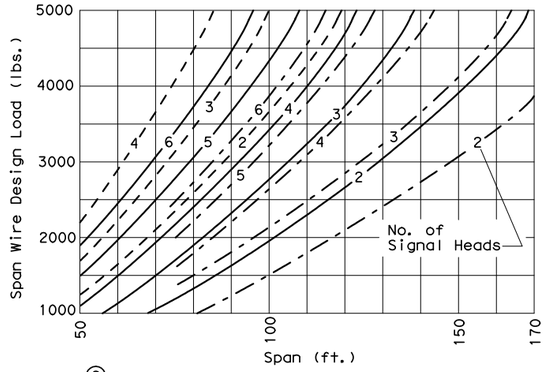
② Numbers on Load Span Charts indicate the number of signal heads on the span. The total span wire design load is based on one 5-section head and one or more additional 3-section head(s). Design wind pressures on cables are assumed as 1.6 lb/ft. Weight of span wire cables (one per signal head) is assumed as 0.65 lb/ft which includes an allowance for conductor cables and miscellaneous hardware. The effect of the sway cable on load distribution is ignored as it is assumed to break at design wind conditions. When a pole supports 2 spans, the span wire design loads for both spans should be added vectorially to determine the design load for that pole.



STRAIN POLE ELEVATIONS HORIZONTAL SIGNALS



② SIGNALS WITH 12-INCH LENS

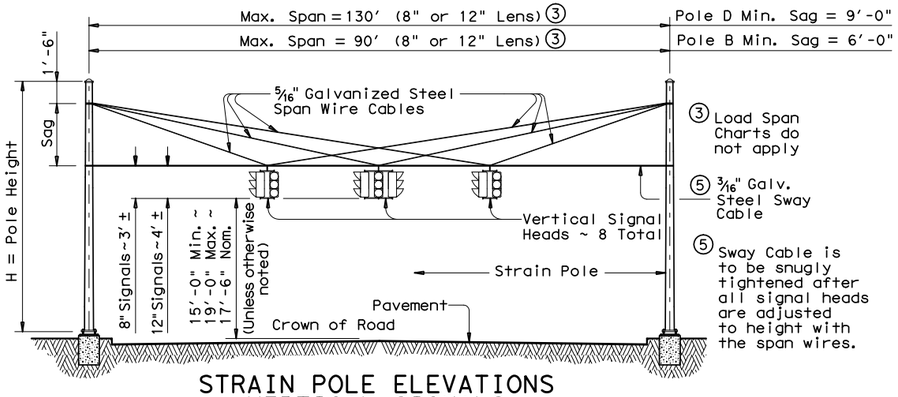


② SIGNALS WITH 8-INCH LENS

Signal Head Type	Wt. Per Head	Wind Area ◆
5-Section, 12" Lens	125 lbs	9.6 sq. ft.
5-Section, 8" Lens	70 lbs	4.8 sq. ft.
3-Section, 12" Lens	75 lbs	5.64 sq. ft.
3-Section, 8" Lens	45 lbs	3.0 sq. ft.

◆ Effective projected design wind area (actual area times drag coefficient)

- - - - - - - Sag = 4′-6" (26′ or 30′ Pole)
——————— Sag = 8′-0" (30′ or 34′ Pole)
— - — - — Sag = 11′-6" (34′ Pole)



STRAIN POLE ELEVATIONS VERTICAL SIGNALS

(Mast arms are not used with vertical signals)

Pole Type	ROUND POLES D_B in.	ROUND POLES D_T in.	ROUND POLES ④thk in.	ROUND POLES H ft.	POLYGONAL POLES D_B in.	POLYGONAL POLES D_T in.	POLYGONAL POLES ④thk in.	POLYGONAL POLES H ft.
A	12.5	8.9	.239	26	13.0	9.0	.239	26
B	13.5	9.3	.239	30	14.0	9.0	.239	30
C	15.5	11.3	.239	30	16.0	11.0	.239	30
D	15.5	10.7	.239	34	16.0	11.0	.239	34

D_B = Pole Base O.D. D_T = Pole Top O.D. H = Pole Height

④ Thickness shown are minimum, thicker materials may be used.

SHIPPING PARTS LIST

Poles (Without Traffic Signal Arm)

Pole Type	Strain poles with Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap, 2 clamp-on simplex and 1 pipe plug.			Strain poles without Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap and 1 pipe plug.		
	Description	Designation	Quantity	Description	Designation	Quantity
A				26′ Strain Pole	SP 26 A-100	
B	30′ Strain Pole	SPL 30 B-100		30′ Strain Pole	SP 30 B-100	
D	34′ Strain Pole	SPL 34 D-100		34′ Strain Pole	SP 34 D-100	

Poles (With Traffic Signal Arm)

Pole Type	Strain poles with Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap, clamp-on simplex and 3 pipe plugs.			Strain poles without Luminaire: Ship each pole with the following hardware attached: handhole at base, pole cap and 3 pipe plugs.		
	Description	Designation	Quantity	Description	Designation	Quantity
C	30′ SPw/TS Arm	SPL 30 C-100		30′ SPw/TS Arm	SP 30 C-100	

Traffic Signal Arms (For Type C poles)

Nominal Arm Length	Type I Arm (1 Signal): Ship each Type I Arm with the following hardware attached: 2 CGB Connectors, 1 clamp with bolts and washers		Type II Arm (2 Signals): Ship each Type II Arm with the following hardware attached: ① 1 Bracket Assembly, 3 CGB Connectors and 1 clamp with bolts and washers		Type III Arm (3 Signals): Ship each Type III Arm with the following hardware attached: ① 2 Bracket Assemblies, 4 CGB Connectors and 1 clamp with bolts and washers	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-100					
24	24I-100		24 II -100			
28	28I-100		28 II -100			
32			32 II -100		32 III -100	
36			36 II -100		36 III -100	

Anchor Bolt Assemblies (1 per pole)

Templates may be removed for shipment.

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 ¾"	3′-10"	
2"	4′-3"	

Each Anchor Bolt Assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Luminaire Arms

Nominal Arm Length	Quantity
8′ Arm	

① See Sheet "DMA-100"

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES STRAIN POLE ASSEMBLIES

(100 MPH WIND ZONE)

SP-100(1)-12

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DN: MS	CK: JSY	DW: BR	CK: JSY
REVISIONS 6-96 1-12	CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
(HCDA 07-12-22			57

121A

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L L C
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

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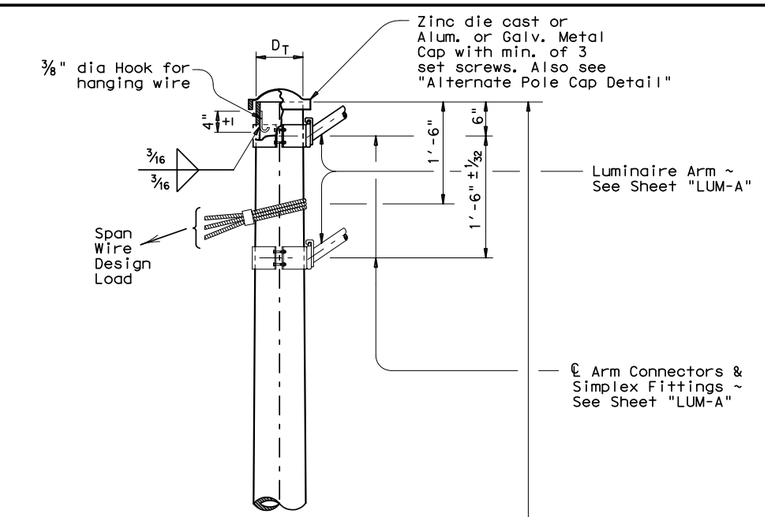
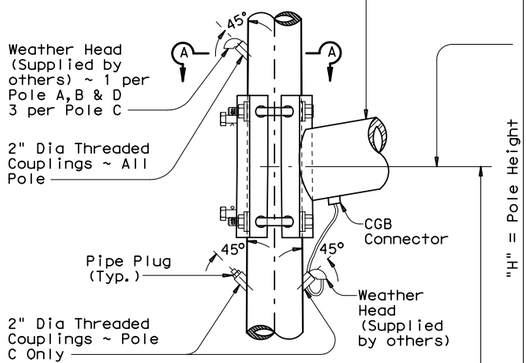
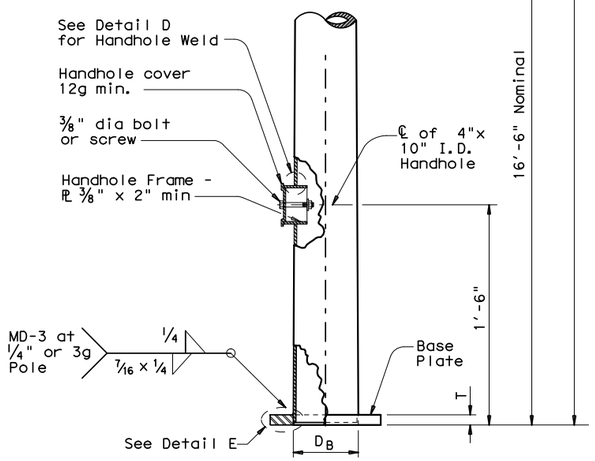


DETAIL A

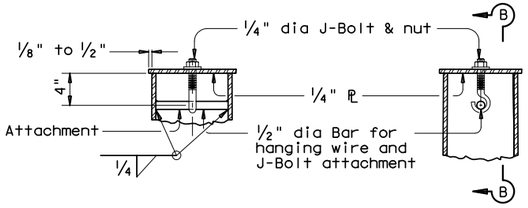


DETAIL B



DETAIL C

POLE ELEVATION



SECTION B-B

ALTERNATE POLE CAP DETAIL

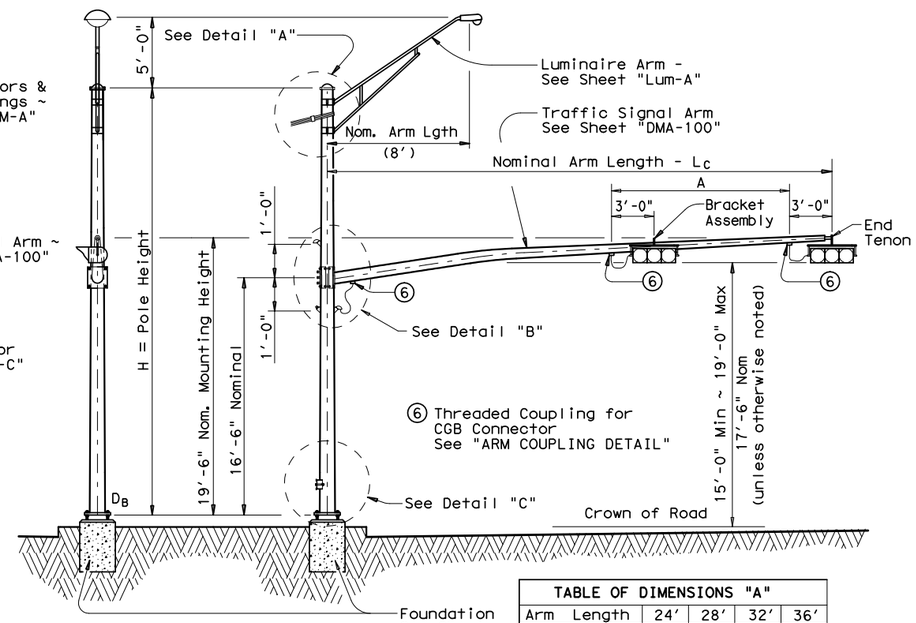
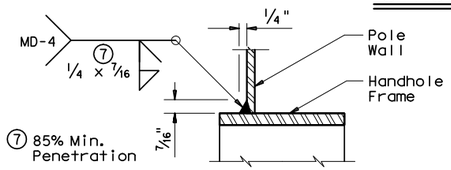
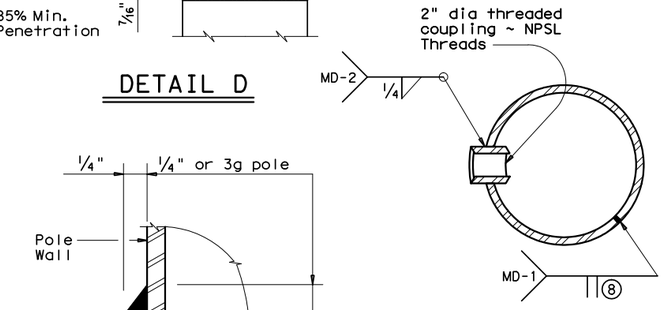


TABLE OF DIMENSIONS "A"				
Arm Length	24′	28′	32′	36′
Arm Type II	10′	11′	12′	13′
Arm Type III			10′	11′

STRUCTURE ASSEMBLY

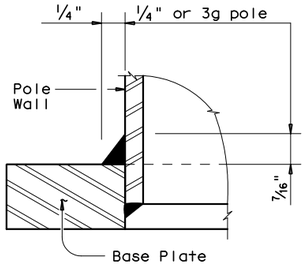


DETAIL D



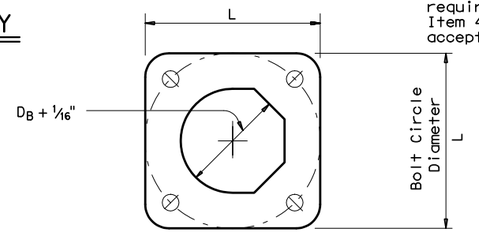
SECTION A-A

(Pole Coupling and Seam Weld Details)

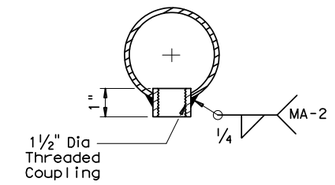


DETAIL E

8 60% Min. penetration, except 100% penetration within 6" of circumferential base welds.



BASE PLATE PLAN



ARM COUPLING DETAIL

MATERIALS	
Round Shafts or Polygonal Shafts 9	ASTM A595 Gr.A, A588, A1008 HSLAS Gr.50 Class 2, A1011 HSLAS Gr.50 Class 2, A572 Gr.50 or A1011 SS Gr.50 10
Plates 9	ASTM A36, A588, or A572 Gr.50
Connection Bolts	ASTM A325 except where noted
Pin Bolts	ASTM A325
Pipe 9	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50, A1011 HSLAS-F Gr.50
Steel Cable	ASTM A475, 7 Wire Utilities Grade
Misc. Hardware	Galvanized steel or stainless steel or as noted

9 ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F, or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.

10 ASTM A1011 SS Gr.50 shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.

GENERAL NOTES

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 100 mph plus a 1.3 gust factor. The maximum permissible span wire design loads tabulated are calculated at a stress load of 1.4 times the basic allowable stress. A simultaneous wind on the pole, mast arm, and luminaire is also included.

See standard sheet "DMA-100" for details of clamp-on traffic signal arms, sheet "MA-C" for traffic signal arm connection details, sheet "LUM-A" for luminaire arm and connection details, and sheet "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing", after fabrication.

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

Foundation Type	Anchor Bolt Diameter	Bolt Hole Diameter	Bolt Circle Diameter	Base PL Dim. L x T
36-A	1 3/4"	2"	19"	19" x 1 3/4"
36-B	2"	2 1/4"	21"	21" x 2"

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES STRAIN POLE ASSEMBLIES

(100 MPH WIND ZONE)

SP-100(2)-12

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DN: MS	CK: JSY	DW: BR	CK: JSY
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
HCDA 07-12-22			58

REVISIONS
6-96
1-12

121B

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

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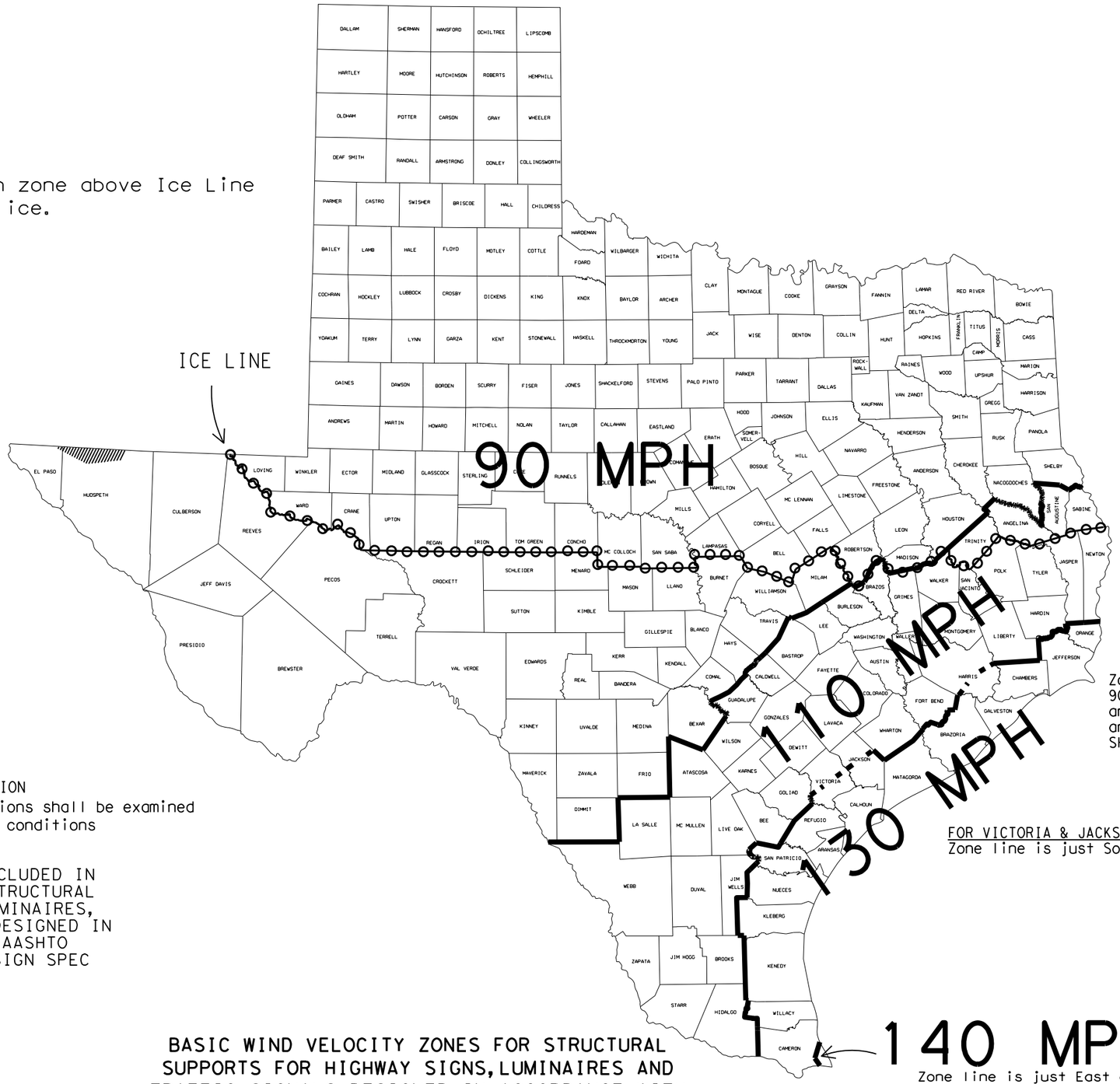
NOTE: Structures in zone above Ice Line to be designed for ice.



FOR HARRIS CO. ONLY
Zone line is just North of US 90, around on the North, West and South sides of IH 610 and down the West side of SH 288.

FOR VICTORIA & JACKSON COUNTIES ONLY
Zone line is just South of US 59.

SPECIAL WIND REGION
Special wind regions shall be examined for unusual wind conditions

THIS SHEET IS TO BE INCLUDED IN ALL P.S.&E.'s HAVING STRUCTURAL SUPPORTS FOR SIGNS, LUMINAIRES, AND/OR TRAFFIC SIGNALS DESIGNED IN ACCORDANCE WITH THE AASHTO 2001 THRU 2013 LTS DESIGN SPEC

Zone line is just East of both CO 1847 & FM 511

BASIC WIND VELOCITY ZONES FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS DESIGNED IN ACCORDANCE WITH THE AASHTO 2001 THRU 2013 LTS DESIGN SPEC

Values are nominal design 3-sec gust wind speeds in mph at 33 ft above ground for Exposure C category. (50-year mean recurrence interval)

NOTE: AASHTO 2001 THRU 2013 LTS DESIGN SPEC =AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition thru 6th Edition

Texas Department of Transportation — Traffic Operations Division Standard

WIND VELOCITY AND ICE ZONES (AASHTO 2001-2013 LTS DESIGN SPEC)

WV & IZ(LTS2013)-14

FILE:	its2013.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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30B

C-22-009-03-GR (GRP) S22-422-109)
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NOTE: Structures north of ice line to be designed for ice.

ZONE 2
(90 MPH WIND)

ZONE 3
(80 MPH WIND)

ZONE 4
(70 MPH WIND)

ICE LINE

ZONE 4
(70 MPH WIND)

ICE LINE

ZONE 3
(80 MPH WIND)

ZONE 1
(100 MPH WIND)

LEGEND

ZONE 1 - = (100 MPH WIND)
ZONE 2 - = (90 MPH WIND)
ZONE 3 - = (80 MPH WIND)
ZONE 4 - = (70 MPH WIND)
= (ICE LINE)
= (DISTRICT LINES)

WIND VELOCITY & ICE ZONES FOR APPLICABLE OVERHEAD SIGN SUPPORTS, HIGH MAST POLES, AND TRAFFIC SIGNAL POLES

Based on 50 Year Mean Recurrence Interval of Fastest Mile Wind Velocity at 33 feet height.

APPLICABLE STANDARDS SHEETS

OVERHEAD SIGN BRIDGE STANDARDS:

OSB-SE
OSB-Z#
OSB-Z#1
HOSB-Z#
HOSB-Z1L
HOSB-Z#1
OSBT
OSBC
OSBC-SC-Z#
OSBS-SC
OSB-FD
OSB-FD-SC

CANTILEVER OVERHEAD SIGN SUPPORT STANDARDS:

COSS-SE
COSS-Z#-10
HCOSS-Z#-10
COSS-Z21-10
COSS-Z#&Z#1-10
COSSD
COSSF
COSS-FD

Note: # = Wind Zone number 1, 2, 3 or 4

HIGH MAST ILLUMINATION POLE STANDARDS:

HMIP-98
HMIF-98

WALKWAYS AND BRACKETS STANDARDS:

SWW
SB(SWL-1)

TRAFFIC SIGNAL POLE STANDARDS:

SP-80
SP-100
SMA-80
SMA-100
DMA-80
DMA-100
MA-C
MAC(ILSN)
MAD-D
TS-FD
LUM-A
CFA
LMA
TS-C
MA-DPD

FOR HARRIS CO. ONLY
Zone line is just North of US 90, around on the North, West and South sides of IH 610 and down the West side of SH 288.

FOR JACKSON CO. ONLY
Zone line is just North of SH 616.

THIS SHEET TO BE INCLUDED IN ALL P.S.&E. PACKAGES CONTAINING ONE OR MORE OF THE APPLICABLE STANDARD SHEETS LISTED HEREON

Texas Department of Transportation

Traffic Operations Division Standard

WIND VELOCITY AND ICE ZONES

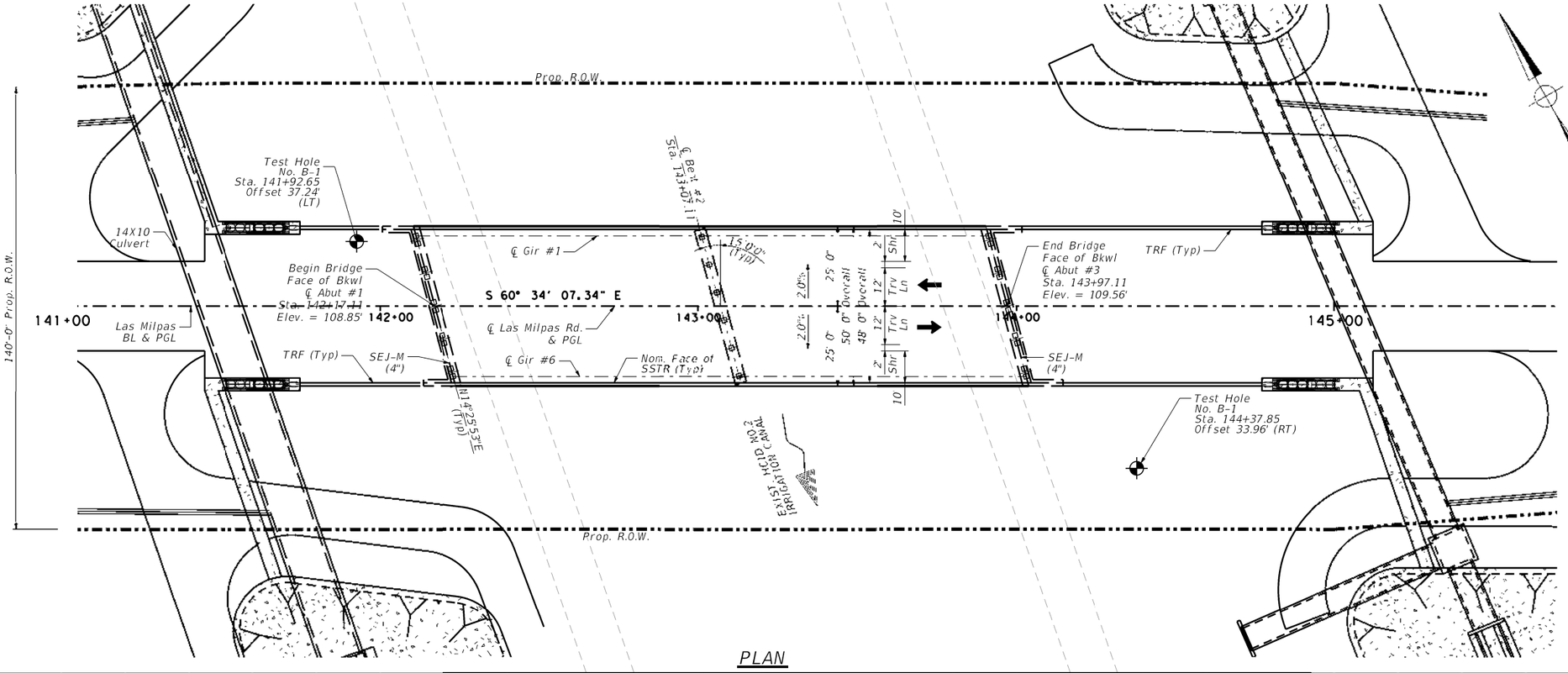
WV & IZ-14

FILE: windice.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 1996	CONT	SECT	JOB	HIGHWAY
REVISIONS				
8-14-Added list of applicable standards, restricting use to structures designed for Fastest Mile wind speeds.	DI			SHEET NO. 60

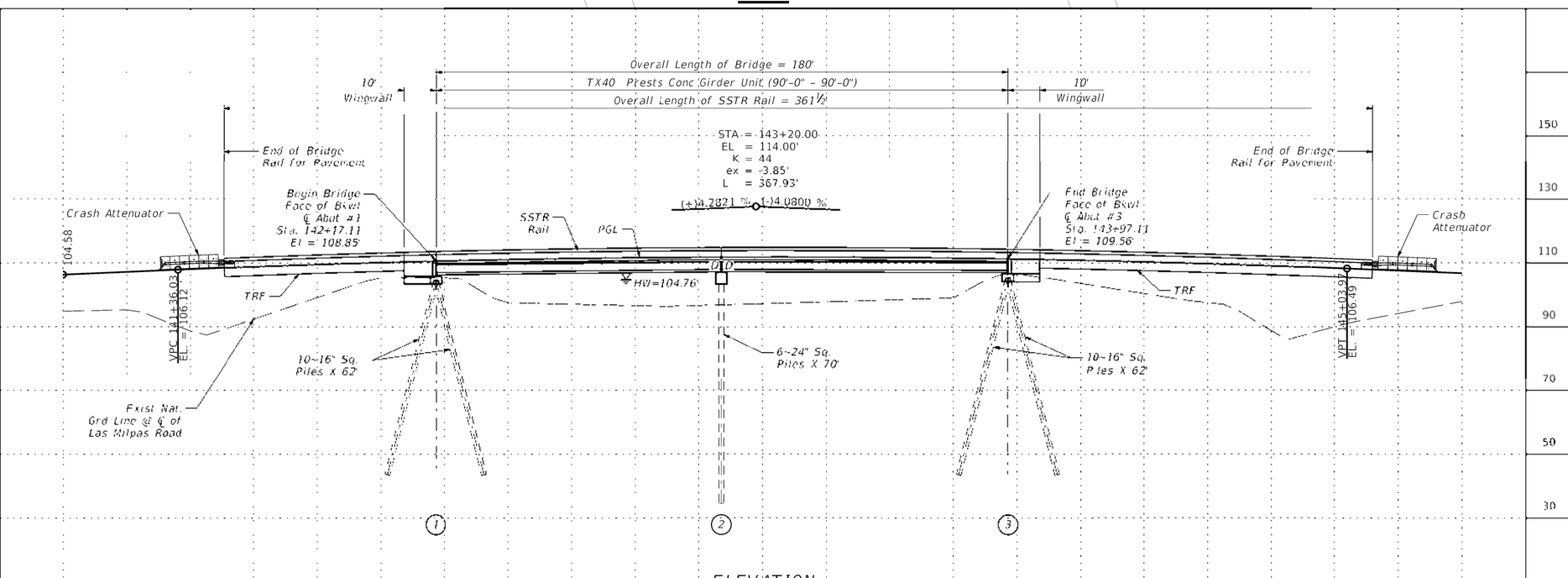
DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HCDA 07-12-22

30



PLAN



ELEVATION

GENERAL NOTES:

1. DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION (2017) AND INTERIM REVISIONS.
2. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO ORDERING MATERIALS.
4. FOR BORINGS, SEE TEST HOLE DATA SHEET. TEST HOLES PROVIDED BY MEG ENGINEERING.
5. SEE CEMENT STABILIZED ABUTMENT BACKFULL DETIALS.

BENCH MARK DATA:

SEE HORIZONTAL & VERTICAL CONTROL SHEETS.

DESIGN DATA:

FUNC. CLASS: MAJOR COLLECTOR
DESIGN SPEED: 30 MPH
DESIGN LOAD: HL93

LEGEND:

- TEST HOLE
- PROPOSED TRAFFIC ARROW
- EXISTING TRAFFIC ARROW

0 20 40
SCALE: 1"=40'

HL93 LOADING

STATE OF TEXAS
CLIVER F. SALGADO
92749
PROFESSIONAL ENGINEER
LICENSED
P.E.
05/02/2020

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

B2Z ENGINEERING
TBPE FIRM NO. F-11187

BRIDGE LAYOUT
LAS MILPAS ROAD
@ IRRIGATION CANAL

SHEET 1 OF 1						
DN: OFS	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK DN:	06	TEXAS				MILPAS
DW: AP	STATE DIST.	CONTROL	SECTION NO.	JOB NO.		SHEET NO.
CK DW: AP	PHR	HIDALGO				61

SHEETS

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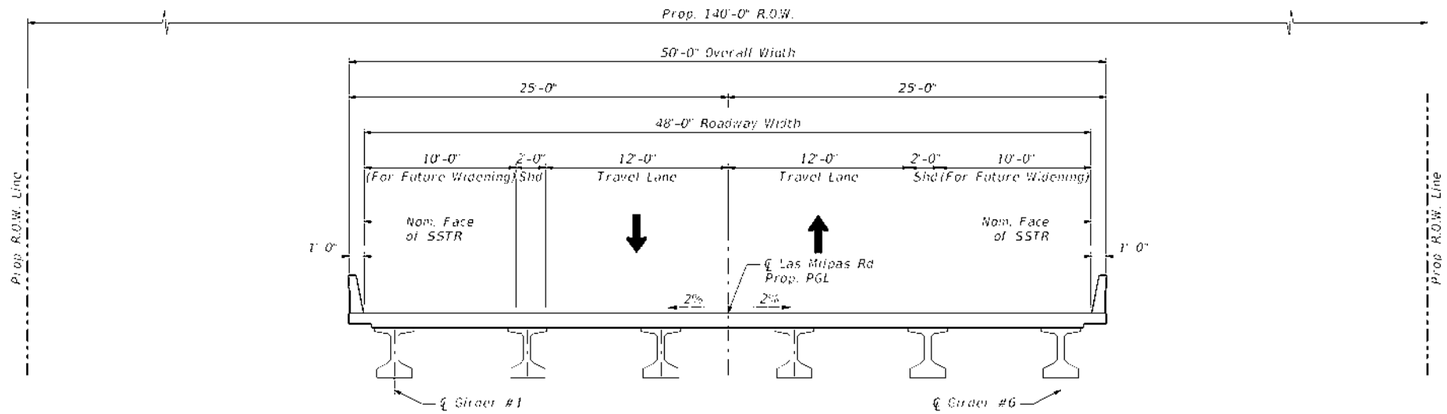
GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications



PROPOSED TYPICAL SECTION

(From Sta. 142+17.11 to Sta. 143+97.11)

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2
COMMISSIONER EDUARDO "EDDIE" CANTU

B2Z ENGINEERING
TBPE FIRM NO. F-11187

BRIDGE TYPICAL SECTION
LAS MILPAS ROAD
@ IRRIGATION CANAL

SHEET 1 OF 1

DN:	OFS	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK DN:		06	TEXAS				MILPAS
DW:	AP	STATE DIST.	(HCDA07-12)22	CONTROL	SECTION	JOB NO.	SHEET NO.
CK DW:	AP	PHR	HIDALGO				62

SHEETS

CLIVER F. SALGADO
03749
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
P.E.
05/02/2020

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ITEM NUMBER	400	409	409	420	420	422	425	450	454
DESCRIPTION CODE	6005	6001	6004	6013	6025	6001	6037	6023	6018
BRIDGE ELEMENT	CEM STABIL BKFL	PRESTR CONC PILE (16 IN)	PRESTR CONC PILE (24 IN)	CL "C" CONC (ABUT)	CL "C" CONC (BENT)	REINF CONC SLAB	PRESTR CONC GIRDER (TX40)	RAIL (TY SSTR)	SEALED EXPANSION JOINT (4 IN) (SEJ-M)
	CY	LF	LF	CY	CY	SF	LF	LF	LF
2 ~ ABUTMENTS	245	1,240		57.7					
1 ~ INTERIOR BENT			420		22.9				
1 ~180.00' PRESTR CONC I-GIRDER UNIT						9,000	1,074.00	723.0	106
TOTAL	245	1,240	420	57.7	22.9	9,000	1,074.00	723.0	106

BEARING SEAT ELEVATIONS

		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6
BENT 1	(FWD)	103.763	103.999	104.233	104.290	104.169	104.048
		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6
BENT 2	(BK)	105.127	105.315	105.502	105.512	105.344	105.176
	(FWD)	105.137	105.325	105.511	105.519	105.351	105.181
		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6
BENT 3	(BK)	104.702	104.842	104.981	104.942	104.727	104.510

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
P.E.
05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

B2Z ENGINEERING
TBPE FIRM NO. F-11187

ESTIMATED QUANTITIES AND BEARING SEAT ELEVATIONS

LAS MILPAS RD.

SHEET 1 OF 1

DN: OFS	FED.RD. DIV.NO.	STATE	PROJECT NO.				HIGHWAY NO.
CK DN:		TEXAS					MILPAS
DW: DP	STATE DIST.	COUNTY	CONTROL	SECTION NO.	JOB NO.		SHEET NO.
CK DW:		HDA	07-1	4022			63

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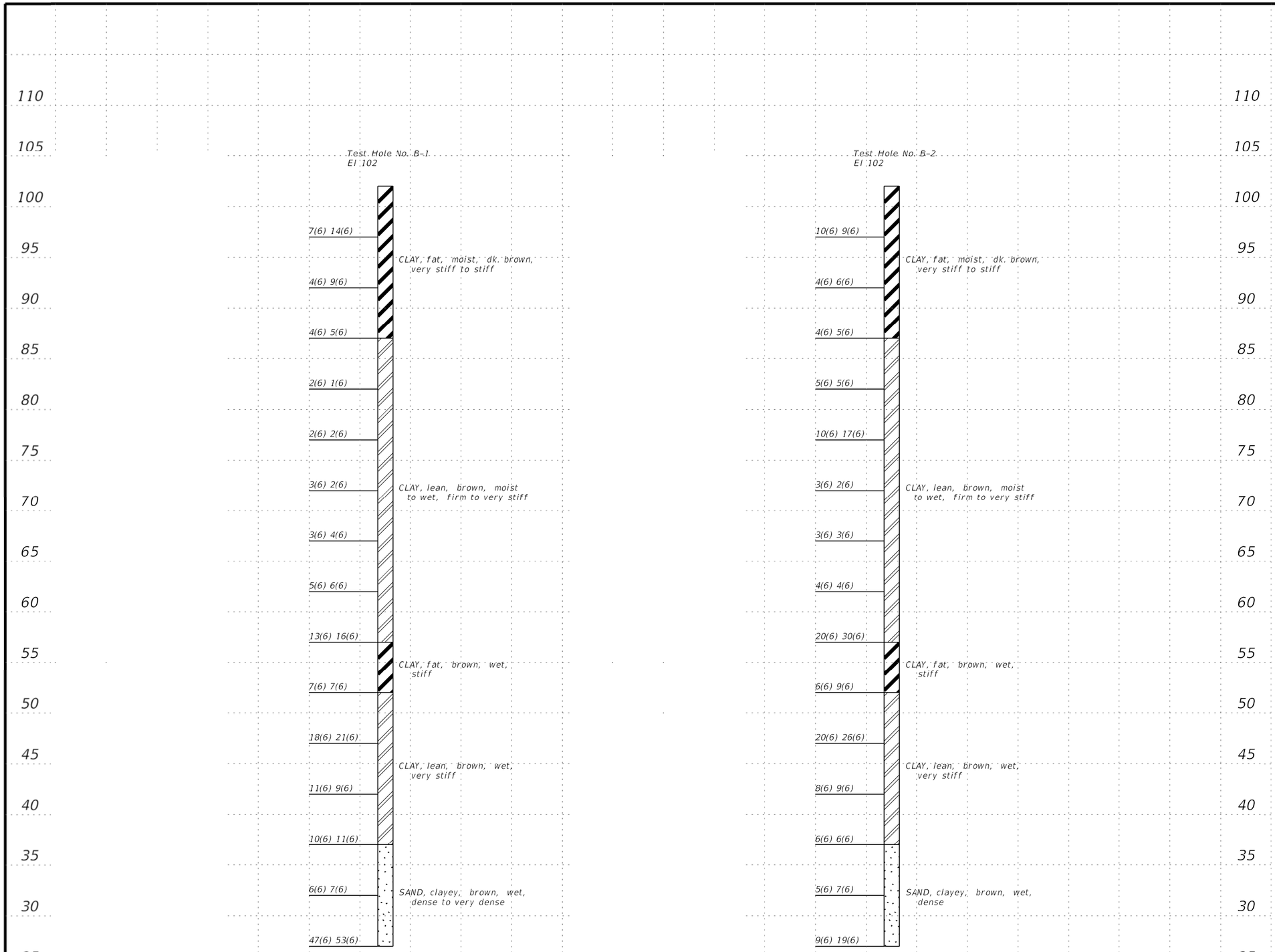

OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
P.E.
05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

B2Z ENGINEERING
TBPE FIRM NO. F-11187

TEST HOLE DATA SHEET

LAS MILPAS ROAD @ IRRIGATION CANAL

SHEET 1 OF 1

DN:	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK DN:		TEXAS				Laskd
DW:	STATE DIST.	(HCDA07-1)2022	CONTROL	SECTION NO.	JOB NO.	SHEET NO.
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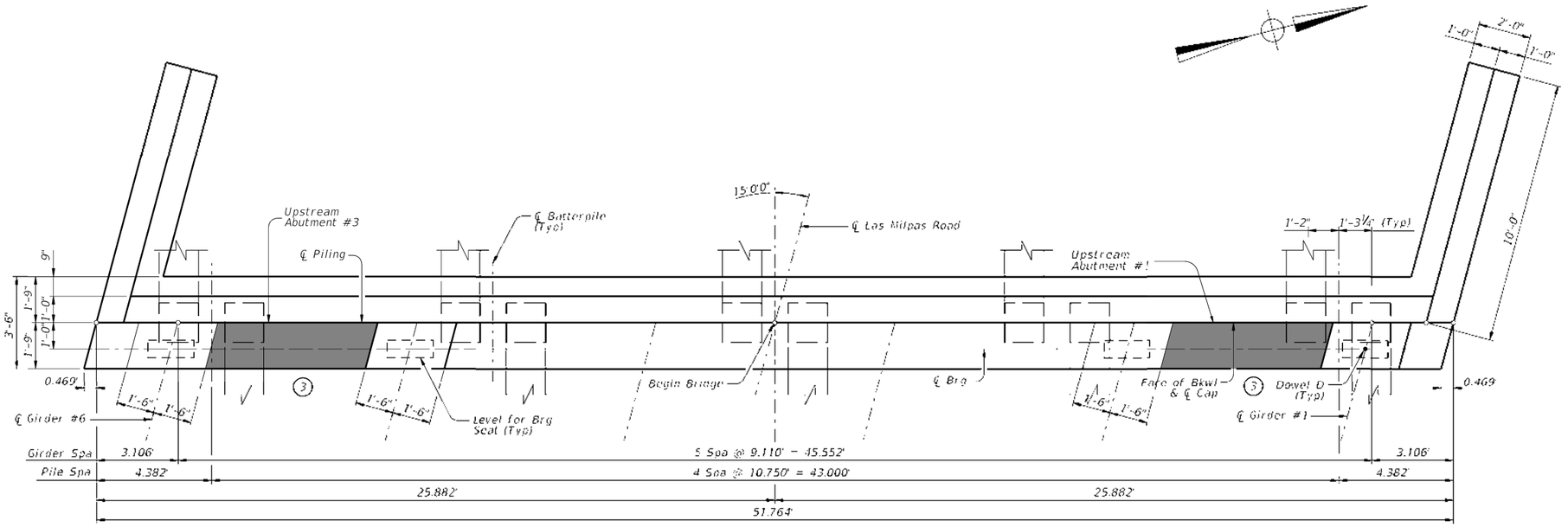
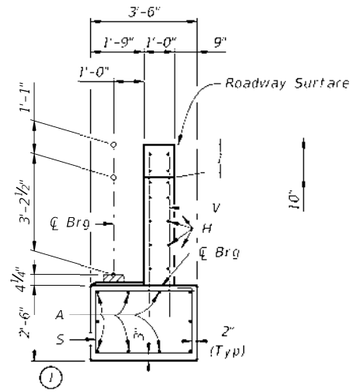


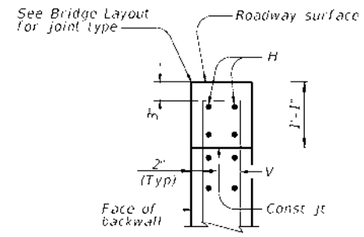
PLAN

(Showing Abutment #1: Abutment #3 Symmetrical by Opposite Hand)

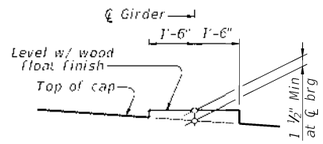


SECTION A-A

SCALE: $\frac{1}{4}$" = 1'-0"

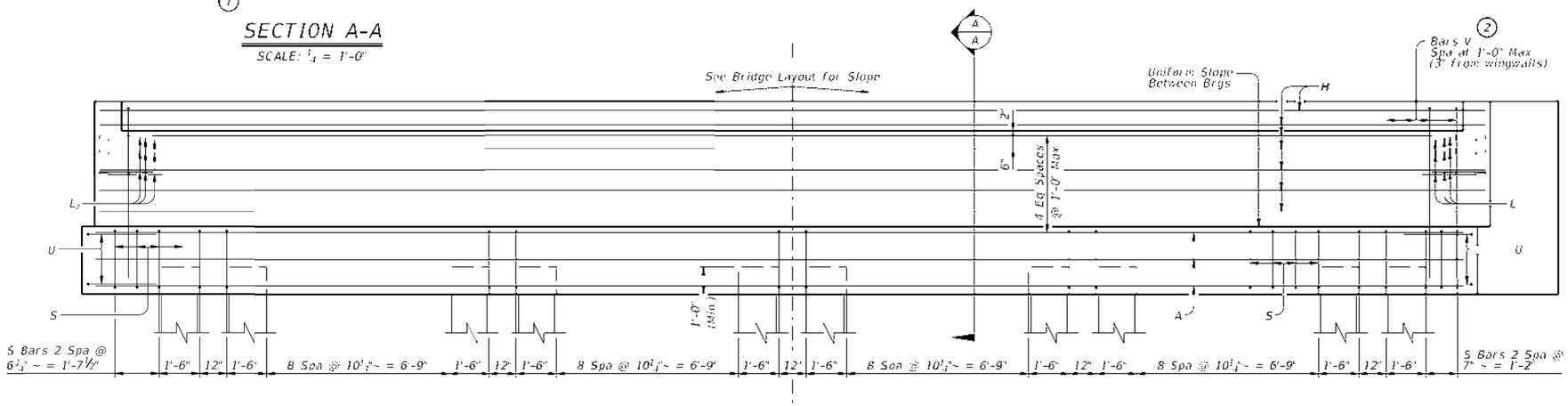


BACKWALL DETAIL



BEARING SEAT DETAIL

(Bearing surface must be clean and free of all loose material before placing bearing pad.)



ELEVATION

1. With pile foundations, move Bars A shown to clear piles.
2. Field bend as needed to clear piles.
3. Place shear key on the upstream side of structure between outside girder and next adjacent girder.

GENERAL NOTES:

- Designed according to AASHTO LRFD Bridge Design Specifications.
- See Bridge Layout for header slope and foundation type, size and length.
- See Common Foundation Details (FD) standard sheet for all foundation details and notes.
- See SSTR rail details for rail anchorage in wing walls.
- See sealed expansion joint standard sheet, SEJ A, for details.
- Chamfer all exposed edges ¾" unless noted otherwise.
- Calculate foundation loads: 65 tons/shaft.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

MATERIAL NOTES:

- Provide Class C concrete (f'c = 3,600 psi).
- Provide Grade 60 reinforcing steel.

STATE OF TEXAS
CLIVER F. SALGADO
03749
LICENSED PROFESSIONAL ENGINEER

P.E.
05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2
COMMISSIONER EDUARDO "EDDIE" CANTU

B2Z ENGINEERING
TBPE FIRM NO. F-11187

ABUTMENT NO. 1 & 3
LAS MILPAS ROAD
@ IRRIGATION CANAL

SHEET 1 OF 2

DN:	OFS	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK DN:		06	TEXAS				MILPAS
DW:	AP	STATE DIST.	COUNTY	SECTION NO.		JOB NO.	SHEET NO.
CK DW:	AP	PHR	HIDALGO				65

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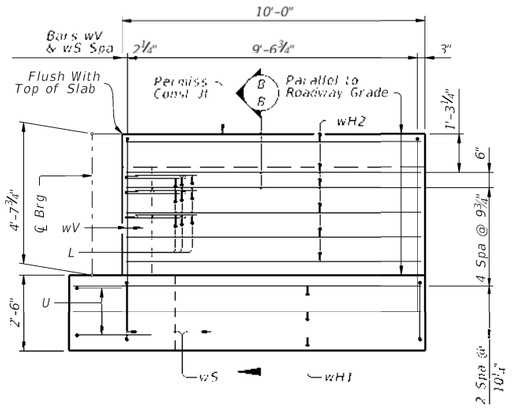
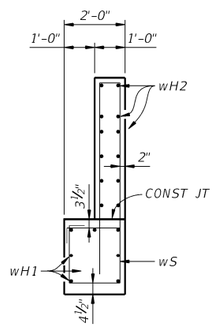
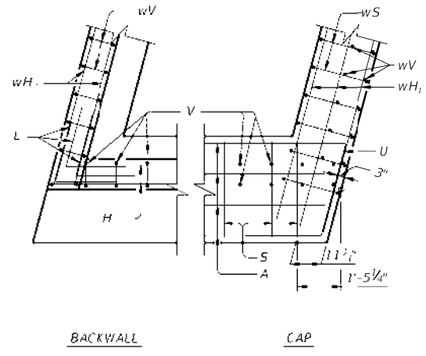


WINGWALL ELEVATION



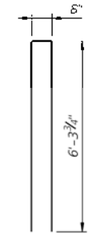
SECTION B-B



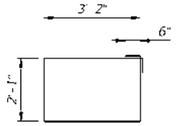
CORNER DETAILS

TABLE OF ESTIMATED QUANTITIES				
BAR	NO.	SIZE	LENGTH	WEIGHT
A	10	#11	49'-9"	2,644
H	14	#6	51'-5"	1,081
L1	9	#6	4'-0"	54
L2	9	#6	4'-0"	54
S	44	#5	11' 6"	528
U	4	#6	8'-7"	49
V	50	#5	13'-4"	697
wH1	14	#6	11'-5"	240
wH2	20	#6	9'-8"	290
wS	20	#4	7' 10"	105
wV	20	#5	13'-4"	277
REINFORCING STEEL			LB	6,019
CL "C" CONC (ABUT)			CY	28.8

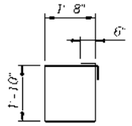
1. FOR CONTRACTOR'S INFORMATION ONLY.



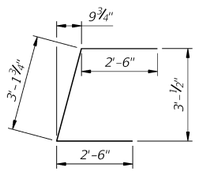
Bars V & wV



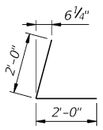
Bars S



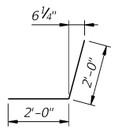
Bars wS



Bars U



Bars L2



Bars L1

05/02/2020

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2
COMMISSIONER EDUARDO "EDDIE" CANTU

B2Z ENGINEERING
TBPE FIRM NO. F-11187

ABUTMENT NO. 1 & 3
LAS MILPAS ROAD
@ IRRIGATION CANAL

SHEET 2 OF 2

DN:	OFS	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK DN:		06	TEXAS				MILPAS
DW:	AP	STATE DIST.	COUNTY	SECTION NO.		JOB NO.	SHEET NO.
CK DW:	AP	PHR	HIDALGO				66

SF 11743

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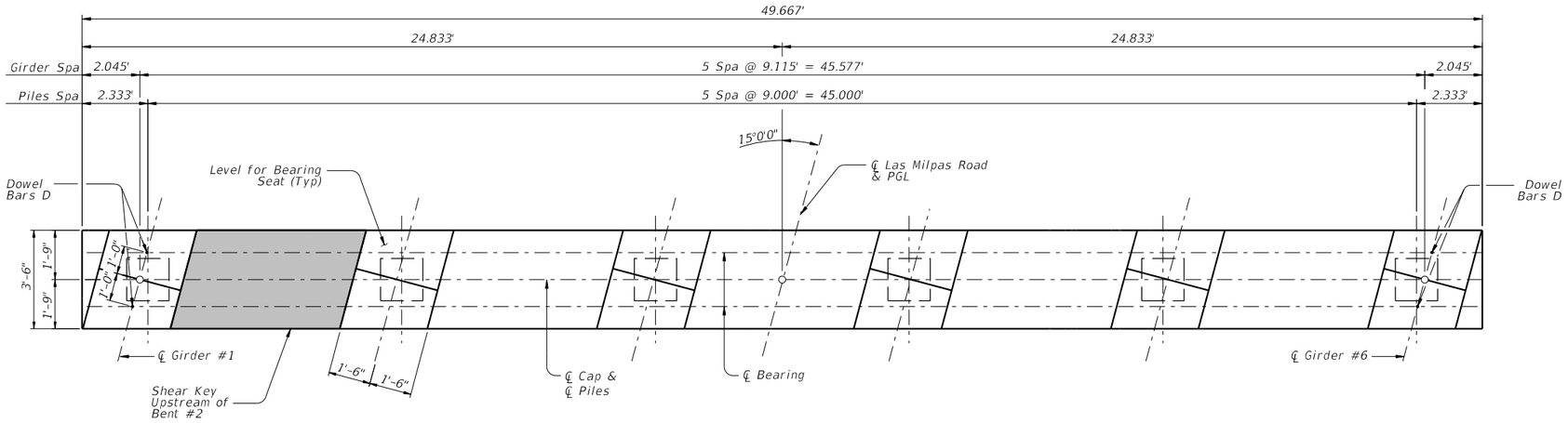
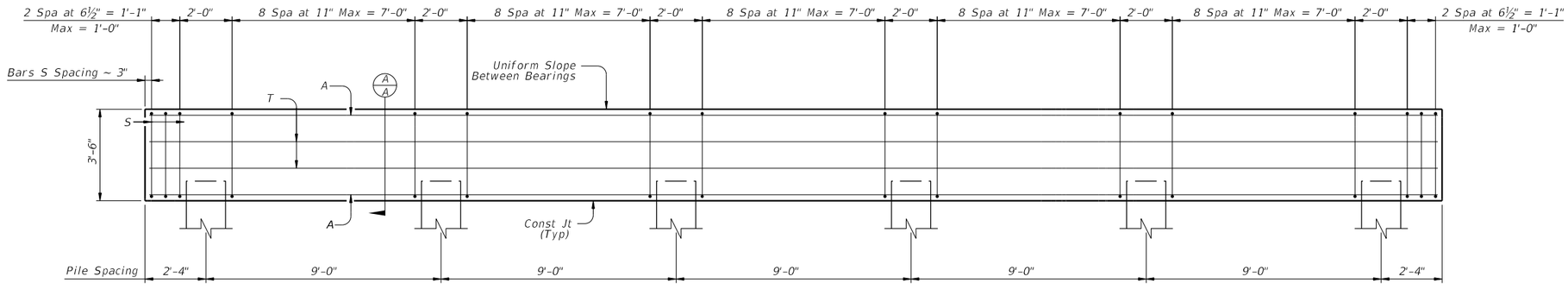
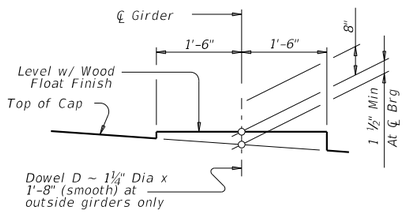


PLAN

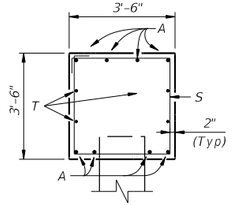


ELEVATION



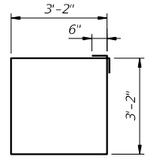
BEARING SEAT DETAIL

(Bearing Surface Must Be Clean and Free of All Loose Material Before Placing Bearing Pad.)



SECTION A-A

Scale: 1"=5'



Bars S

TABLE OF CAP QUANTITIES

BAR	NO.	SIZE	LENGTH	WEIGHT
A	8	#9	49' -4"	1,342
D	4	#9	1' -8"	23
S	51	#5	13' -8"	727
T	4	#5	38' -6"	161
REINFORCING STEEL			LB	2253.0
CL "C" CONC (CAP) (HPC)			CY	22.9

1. FOR CONTRACTOR'S INFORMATION ONLY.

GENERAL NOTES:

Designed According to AASHTO LRFD Bridge Design Specifications, 7th Edition (2016).

Cover Dimensions are Clear Dimensions, Unless Noted Otherwise.
Reinforcing Bar Dimensions Shown are Out-To-Out of Bar.

See Foundation Detail Standard Sheet FD for All Foundation Details and Notes not Shown.
Calculated Foundation Loads = 114 Tons/Pile

MATERIAL NOTES:

Provide Class C Concrete (f'c 3,600 psi)
Provide Grade 60 Reinforcing Steel
Galvanized Dowel Bars D

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
P.E.
05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2

B2Z ENGINEERING
TBPE FIRM NO. F-11187

BENT NO. 2
LAS MILPAS ROAD
@ IRRIGATION CANAL

SHEET 1 OF 1

DN: OFS	FED.RD. DIV.NO.	STATE	PROJECT NO.				HIGHWAY NO.
CK DN:	06	TEXAS					MILPAS
DW: AP	STATE DIST.	COUNTY	(HCDA07-1)2022	SECTION NO.	JOB NO.		SHEET NO.
CK DW: AP	PHR	HIDALGO					67

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BAR TABLE	
BAR	SIZE
A	#4
D	#4
G	#4
H	#4
J	#4
M	#4
OA	#5
P	#4
T	#4

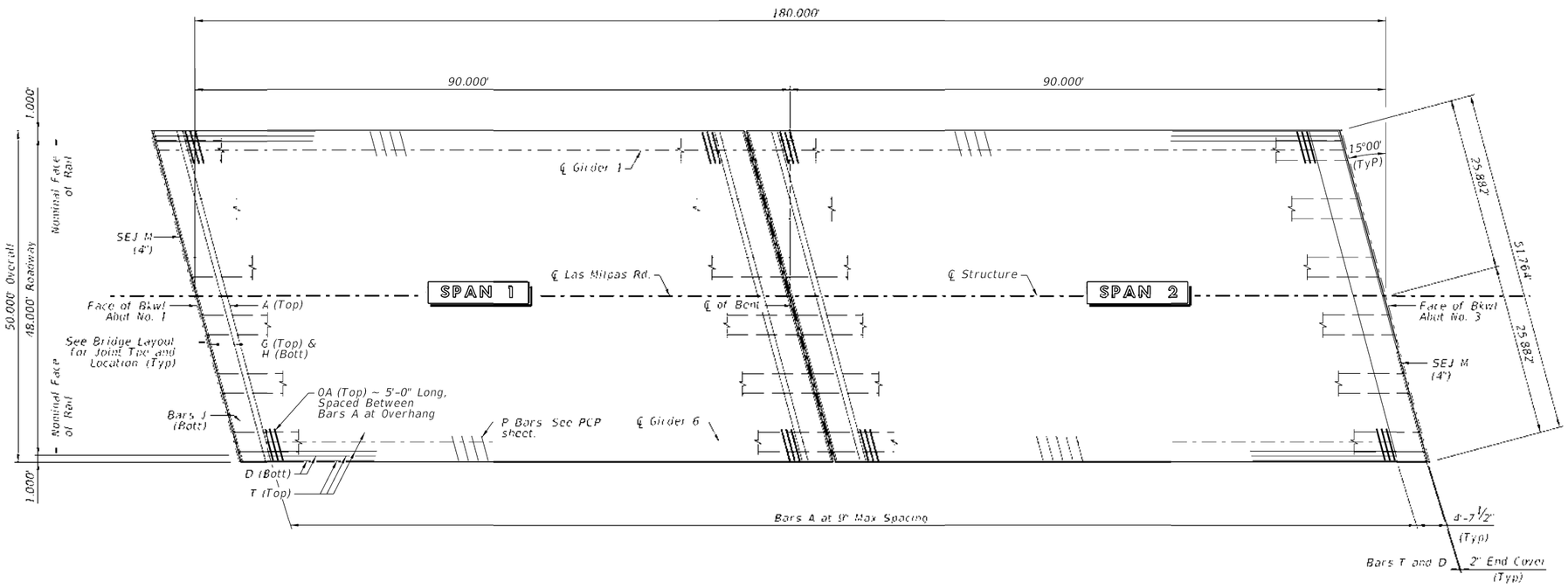
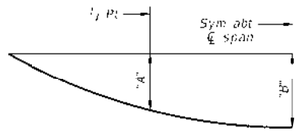


TABLE OF DEAD LOAD DEFLECTIONS

TYPE Tx40 GIRDERS

SPAN NO	GIRDER NO.	"A" (FEET)	"B" (FEET)
1	1	0.093	0.131
	2	0.111	0.156
	3	0.111	0.156
	4	0.111	0.156
	5	0.111	0.156
	6	0.093	0.131
2	1	0.093	0.131
	2	0.111	0.156
	3	0.111	0.156
	4	0.111	0.156
	5	0.111	0.156
	6	0.093	0.131



DEAD LOAD DEFLECTION DIAGRAM

Calculated deflections shown are due to the concrete slab on interior girders only (Ec = 5000 ksi). Adjust values as required for exterior girders and if optional slab forming is used. These values may require field verification.

STATE OF TEXAS
CLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER

P.E.
05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2

B2Z ENGINEERING
TBPE FIRM NO. F-11987

PRESTRESSED CONCRETE I-GIRDER SPAN

LAS MILPAS ROAD

AT IRRIGATION CANAL

SHEET 1 OF 2

DN:	OFS	FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK DN:		06	TEXAS				MILPAS
DW:	AP	STATE DIST.	CONTROL	SECTION	JOB		SHEET NO.
CK DW:	AP	PHR	HIDALGO				68

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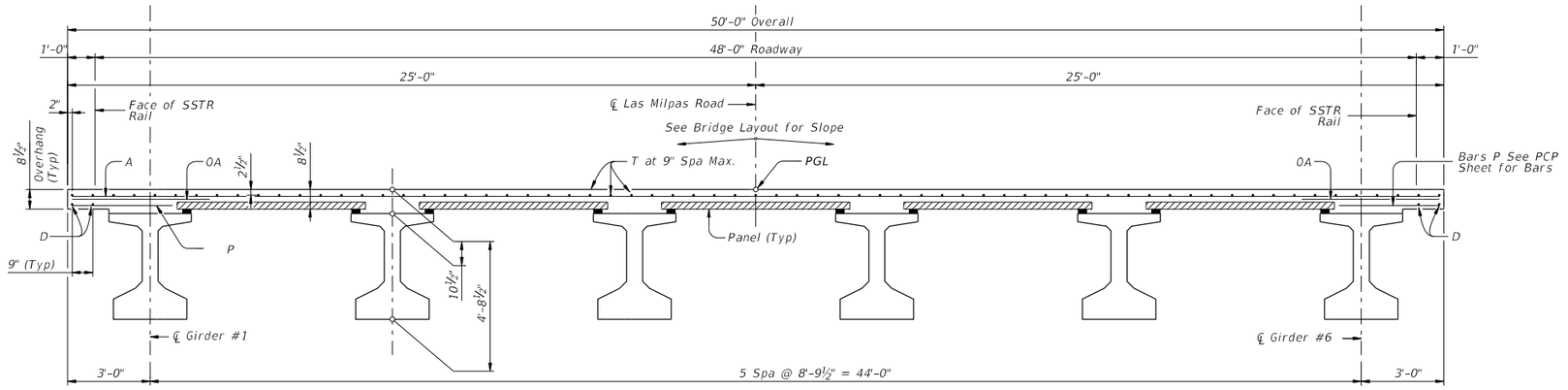
TABLE OF ESTIMATED QUANTITIES			
SPAN	REINF CONC SLAB (CL S)	PRESTR CONC GIRDER (TX 40)	REINFORCING STEEL
NO.	(SF)	(LF)	(LB)
1	4,500	537.00	10,350
2	4,500	537.00	10,350
TOTAL	9,000	1,074	20,700

(1) For contractor's information only.



TYPICAL TRANSVERSE SECTION

TABLE OF SECTION DEPTHS				
SPAN NO.	GIRDER NO.	"X" AT ℄ BRG	"Y" AT ℄ BRG	"Z" AT ℄ BRG
1	1	10 1/2 "	4'- 2 1/2 "	11"
	2	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	3	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	4	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	5	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	6	10 1/2 "	4'- 2 1/2 "	11"
2	1	10 1/2 "	4'- 2 1/2 "	11"
	2	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	3	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	4	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	5	10 1/2 "	4'- 2 1/2 "	11 1/4 "
	6	10 1/2 "	4'- 2 1/2 "	11"

STATE OF TEXAS
OLIVER F. SALGADO
103749
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P.E.
05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2

B2Z ENGINEERING
TBPE FIRM NO. F-11187

PRESTRESSED CONCRETE I-GIRDER SPAN

LAS MILPAS ROAD

AT IRRIGATION CANAL

SHEET 2 OF 2

DN: OFS	FED.RD. DIV.NO.	STATE	PROJECT NO.				HIGHWAY NO.
CK DN:	06	TEXAS					MILPAS
DW: AP	STATE DIST.	COUNTY	CONTROL	SECTION	JOB		SHEET NO.
CK DW: AP	PHR	HIDALGO					69

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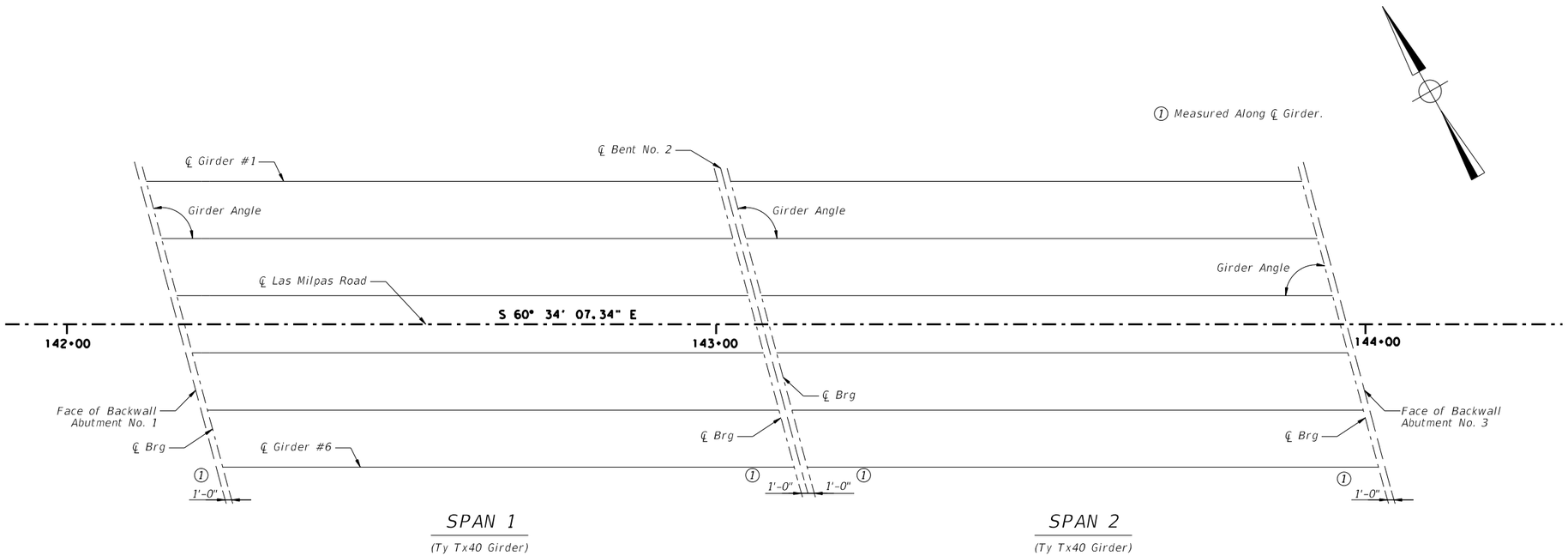

SPAN 1
(Ty Tx40 Girder)

SPAN 2
(Ty Tx40 Girder)

BENT REPORT

BENT NO. 1 (S 14 25 52.66 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 22.776 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 1	BEAM 1	0.000	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	TOTAL	45.552			

BENT NO. 2 (S 14 25 52.66 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 22.776 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 1	BEAM 1	0.000	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	TOTAL	45.552			

BENT NO. 2 (S 14 25 52.66 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 22.776 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 2	BEAM 1	0.000	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	TOTAL	45.552			

BENT NO. 3 (S 14 25 52.66 W)
DISTANCE BETWEEN STATION LINE AND BEAM 1, 22.776 L

		BEAM SPAC. (C.L. BENT)	BEAM ANGLE D	M	S
SPAN 2	BEAM 1	0.000	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	BEAM	9.110	75	00	00
	TOTAL	45.552			

BEAM REPORT

GIRDER REPORT, SPAN 1

	C-C BEN	HORIZONTAL DISTANCE C-C BRG.	TRUE BOT.	GIRDER SLOPE
IRDER1	90.000	87.965	89.5000	0.0155
IRDER2	90.000	87.965	89.5000	0.015
IRDER3	90.000	87.965	89.5000	0.0144
IRDER4	90.000	87.965	89.5000	0.0139
IRDER5	90.000	87.965	89.5000	0.0134
IRDER6	90.000	87.965	89.5000	0.0128

GIRDER REPORT, SPAN 2

	C-C BEN	HORIZONTAL DISTANCE C-C BRG.	TRUE BOT.	GIRDER SLOPE
IRDER1	90.000	87.965	89.4900	-0.0049
IRDER2	90.000	87.965	89.4900	-0.0055
IRDER3	90.000	87.965	89.4900	-0.006
IRDER4	90.000	87.965	89.4900	-0.0066
IRDER5	90.000	87.965	89.4900	-0.0071
IRDER6	90.000	87.965	89.4900	-0.0076

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER

P.E.

05/02/2020

HL93 LOADING

NO.	REVISIONS	BY	DATE

HIDALGO COUNTY PRECINCT 2

B2Z ENGINEERING
TBPE FIRM NO. F-11187

GIRDER LAYOUT
LAS MILPAS ROAD

AT IRRIGATION CANAL

SHEET 1 OF 1

DN: OFS	FED. RD. DIV. NO.	STATE	PROJECT NO.				HIGHWAY NO.
CK DN:	06	TEXAS					MILPAS
DW: AP	STATE DIST.	COUNTY	CONTROL	SECTION	JOB		SHEET NO.
CK DW: AP	PHR	HIDALGO					70

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STRUCTURE	DESIGNED GIRDERS									DEPRESSED STRAND PATTERN		CONCRETE		OPTIONAL DESIGN				
	SPAN NO.	GIRDER NO.	GIRDER TYPE	PRESTRESSING STRANDS: "A" OR "B" STRAND PATTERN	TOTAL NO	SIZE (in)	STRGTH (ksi)	"C" ℄ (in)	"D" END (in)	NO	TO END (in)	RELEASE STRGTH (1) f'ci (ksi)	28 DAY COMP STRGTH f'c (ksi)	DESIGN LOAD COMP STRESS f'cp @ SERVICE IV (ksi)	DESIGN LOAD TENSILE STRESS fpe @ SERVICE III (ksi)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I) (kip ft)	LIVE LOAD DISTRIBUTION FACTOR (2)	
																	MOMENT	SHEAR
Las Milpas Rd	1	1	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.266	-3.734	4738	0.672	0.918
	1	2	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	-3.941	4918	0.672	0.918
	1	3	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	-3.941	4918	0.672	0.870
	1	4	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	-3.941	4918	0.672	0.870
	1	5	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	-3.941	4918	0.672	0.918
	1	6	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.266	-3.734	4738	0.672	0.918
	2	1	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.266	-3.734	4738	0.672	0.918
	2	2	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	-3.941	4918	0.672	0.918
	2	3	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	3.941	4918	0.672	0.870
	2	4	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	-3.941	4918	0.672	0.870
	2	5	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.468	3.941	4918	0.672	0.918
	2	6	Tx40		32	0.6	270	14.23	8.60	6	36.5	5.100	5.700	3.266	3.734	4738	0.672	0.918

NON-STANDARD STRAND PATTERNS

PATTERN	STRAND ARRANGEMENT AT ℄ OF GIRDER

(1) Based on the following allowable stresses (ksi):

Compression = 0.65 f'ci

Tension = $0.24\sqrt{f'ci}$

Optional designs must likewise conform.

(2) Portion of full HL93.

DESIGN NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Optional designs for girders 120 feet or longer must have a calculated residual camber equal to or greater than that of the designed girder.

Prestress losses for the designed girders have been calculated for a relative humidity of ___ percent. Optional designs must likewise conform.

FABRICATION NOTES:

Provide Class H concrete.

Provide Grade 60 reinforcing steel bars.

Use low relaxation strands, each pretensioned to 75 percent of fpu.

Strand debonding must comply with Item 424.4.2.2.2.4. Full-length debonded strands are only permitted in positions marked Δ. Double wrap full-length debonded strands in outer most position of each row.

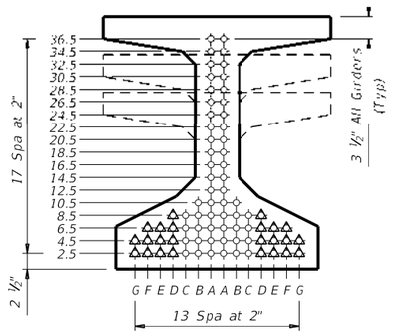
When shown on this sheet, the Fabricator has the option of furnishing either the designed girder or an approved optional design. All optional design submittals must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.

Seal cracks in girder ends exceeding 0.005" in width as directed by the Engineer. The fabricator is permitted to decrease the spacing of Bars R and S by providing additional bars to help limit crack width provided the decreased spacing results in no less than 1" clear between bars. The fabricator must take an aproved corrective action if cracks greater than 0.005" form on a repetitive basis.

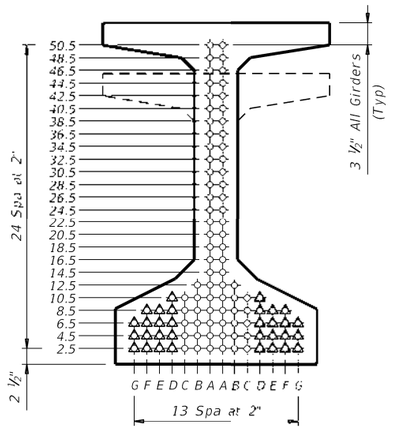
DEPRESSED STRAND DESIGNS:

Locate strands for the designed girder as low as possible on the 2" grid system unless a non-standard strand pattern is indicated. Fill row "2.5", then row "4.5", then row "6.5", etc., beginning each row in the "A" position and working outward until the required number of strands is reached. All strands in the "A" position must be depressed, maintaining the 2" spacing so that, at the girder ends, the upper two strands are in the position shown in the table.

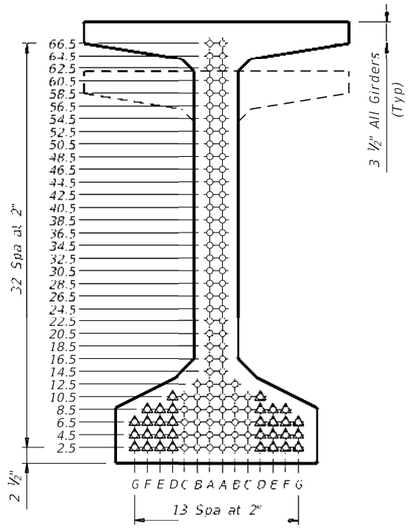
To complete this sheet, input the girder designs in the table and the relative humidity under Design Notes. In all cases, remove this block. This sheet must be signed, sealed, and dated by a registered Professional Engineer.



TYPE Tx28, Tx34 & Tx40



TYPE Tx46 & Tx54



TYPE Tx62 & Tx70

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

PRESTRESSED CONCRETE I-GIRDER DESIGNS (NON-STANDARD SPANS)

IGND

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER

P.E.

05/02/2020

FILE: Las Milpas_IGND.dgn	DN: TxDOT	CK: TxDOT	DW: EFC	CK: TAR
©TxDOT August 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS 10-19: Modified for depressed strands only.				MILPAS
DATE:				SHEET NO.
FILE:	PHR	HIDALGO		71

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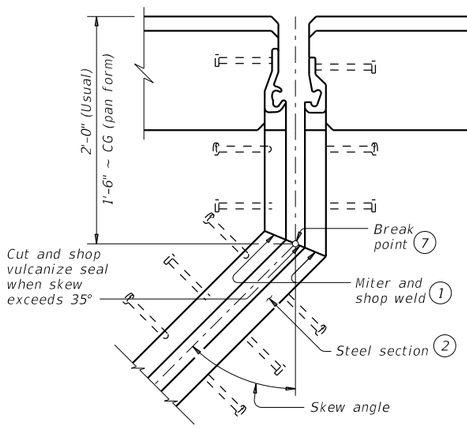
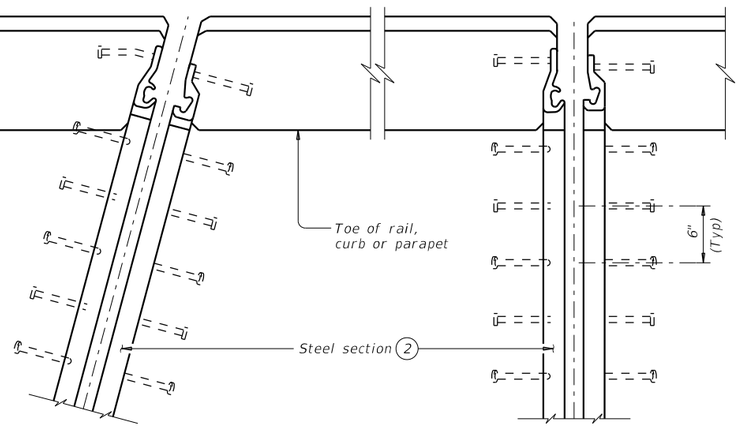


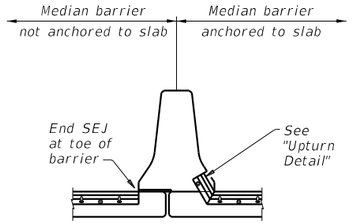
SHOWING SKEWS WITH SLAB BREAKBACKS



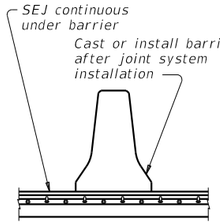
SHOWING SKEWS WITHOUT SLAB BREAKBACKS

SHOWING WITHOUT SKEWS AND SLAB BREAKBACKS

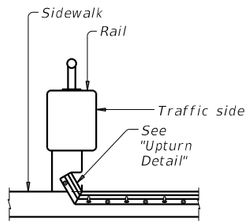
PLANS OF END CONDITIONS



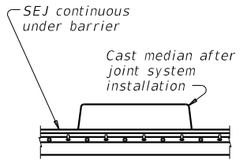
WITH OPEN DECK JOINT BELOW MEDIAN BARRIER



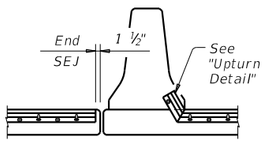
AT MEDIAN BARRIER



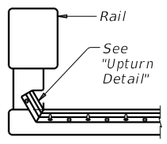
AT SIDEWALK BEHIND BRIDGE RAIL



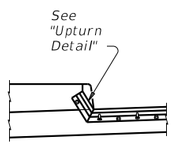
AT RAISED MEDIAN



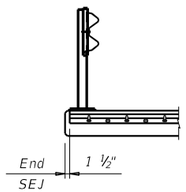
WITH OPEN DECK JOINT ADJACENT TO MEDIAN BARRIER



AT CONCRETE BRIDGE RAIL

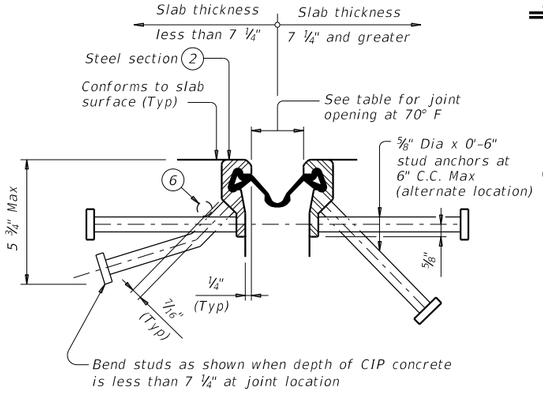


AT SIDEWALK

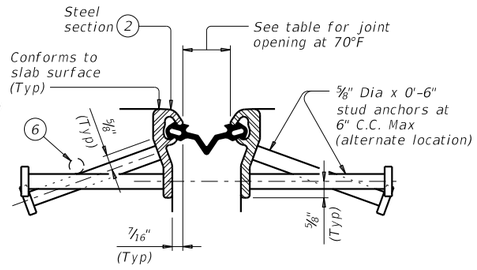


AT STEEL POST BRIDGE RAIL

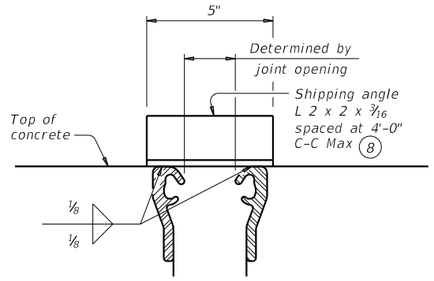
TYPICAL SECTIONS (5)



SECTION THRU WATSON BOWMAN ACME (SE-400 OR SE-500) JOINTS



SECTION THRU D.S. BROWN (A2R-400 OR A2R-XTRA) JOINTS



SHOWING D.S. BROWN (Ty SSCM2)
(All joints are similar.) (Studs are not shown for clarity.)

SHIPPING ANGLE

An alternate method of securing joint sections may be used if approved by the Bridge Division. Erection bolts are not allowed.

TABLE OF SEALED EXPANSION JOINT INFORMATION

MANUFACTURER	STEEL SECTION (2)	STRIP SEAL			
		4" JOINT		5" JOINT	
		Seal Type	Joint Opening (3)	Seal Type	Joint Opening (3)
D.S. Brown	Type SSCM2	A2R-400	1 ¾"	A2R-XTRA	2"
Watson Bowman Acme	Type R	SE-400	1 ¾"	SE-500	2"

REDUCED LONGITUDINAL MOVEMENT RANGE

SKEW (deg)	JOINT SIZE	
	4"	5"
0	4.0"	5.0"
15	4.0"	5.0"
30	3.5"	4.3"
45	2.8"	3.5"

DESIGN NOTES:

Joints installed on a skew have reduced ability to accommodate longitudinal movement. Use table values to determine the correct joint size for skewed installations.

For other skews over 25 degrees, calculate reduced movement range by multiplying joint size by cosine (skew).

(1) Remove all burrs which will be in contact with seal prior to making splice.

(2) Shape of steel section shown is typical. Variations in sections must be approved by the Engineer.

(3) These openings are also the recommended minimum installation openings.

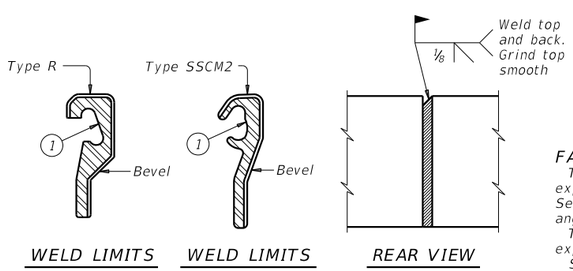
(4) Reduce for sidewalk or parapet heights less than 6".

(5) Other conditions affecting the joint profile should be noted elsewhere.

(6) Move transverse bars that are in conflict with SEJ studs, in either the bridge slab or approach slab, to rest at the junction of the studs.

(7) See Span details for location of break point.

(8) Align shipping angle perpendicular to joint.



WELD LIMITS WELD LIMITS REAR VIEW

FIELD SPLICE DETAIL

FABRICATION NOTES:

Temporarily shop assemble corresponding sections of sealed expansion joints (SEJ), check for fit, and match mark for shipment. Secure corresponding sections together for shipment with shipping angle. Do not use erection bolts.

The seal must be continuous and included in the price bid for sealed expansion joint.

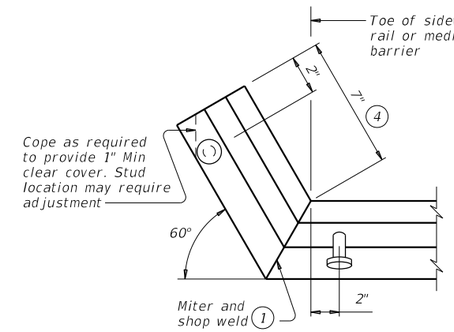
Ship steel sections in convenient lengths of 10'-0" Min and 24'-0" Max unless necessary for staged construction or widenings. One shop splice is permitted in each shipping length provided no piece is less than 2'-0" long and sufficient studs are added to limit the stud to shop splice distance to 2" Min and 4" Max.

Weld studs in accordance with AWS D1.1.

Butt weld all shop and field splices and grind smooth areas in contact with seal. Make all necessary field splice joint preparations in the shop.

Paint the entire steel section with System II or IV primer in accordance with Item 446, "Feild Cleaning and Painting Steel", unless required to galvanize when shown in the plans. Provide galvanizing in accordance with Item 445, "Galvanizing". Provide paints in accordance with Item 446.2. Prepare steel and apply paint in accordance with Item 446.4.7.3 and 446.4.7.4.

Shop drawings for the fabrication of sealed expansion joints will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.



UPTURN DETAIL

CONSTRUCTION NOTES:

Secure the sealed expansion joint in position and place to the proper grade and alignment by welding braces to adjacent reinforcing steel, to prestressed beam stirrups, or to anchors cast in concrete diaphragms. Include cost of temporary bracing in the price bid for sealed expansion joint.

Remove shipping angle immediately after each joint half is secured in place. Grind smooth, and touch up with organic zinc-rich paint.

Clean and prepare seal cavity for seal installation as per the Manufacturer's installation procedures.

GENERAL NOTES:

Provide sealed expansion joints in the size and at locations shown on the plans.

Minimum slab and overhang thickness required for the use of SEJ-M is 6 ½".

Texas Department of Transportation

Bridge Division Standard

SEALED EXPANSION JOINT TYPE M WITHOUT OVERLAY

SEJ-M

FILE: sejmste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: JTR	CK: JMH
©TxDOT April 2019 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.
				72

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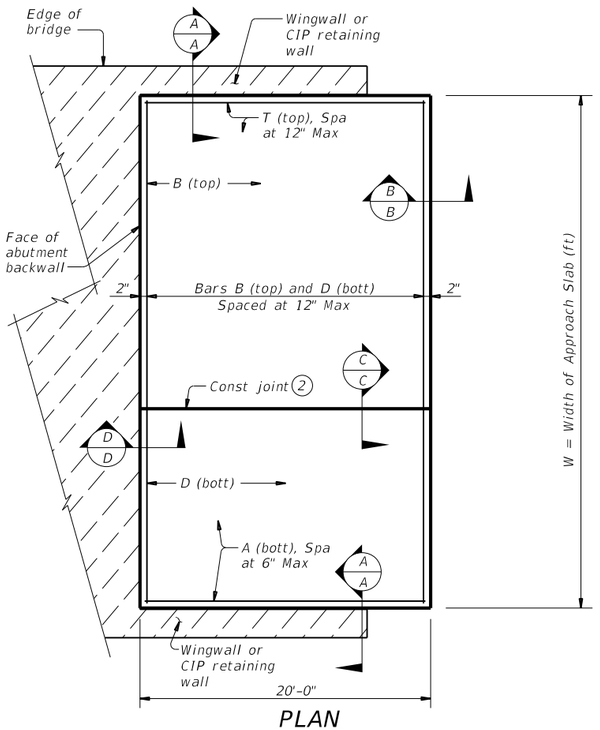
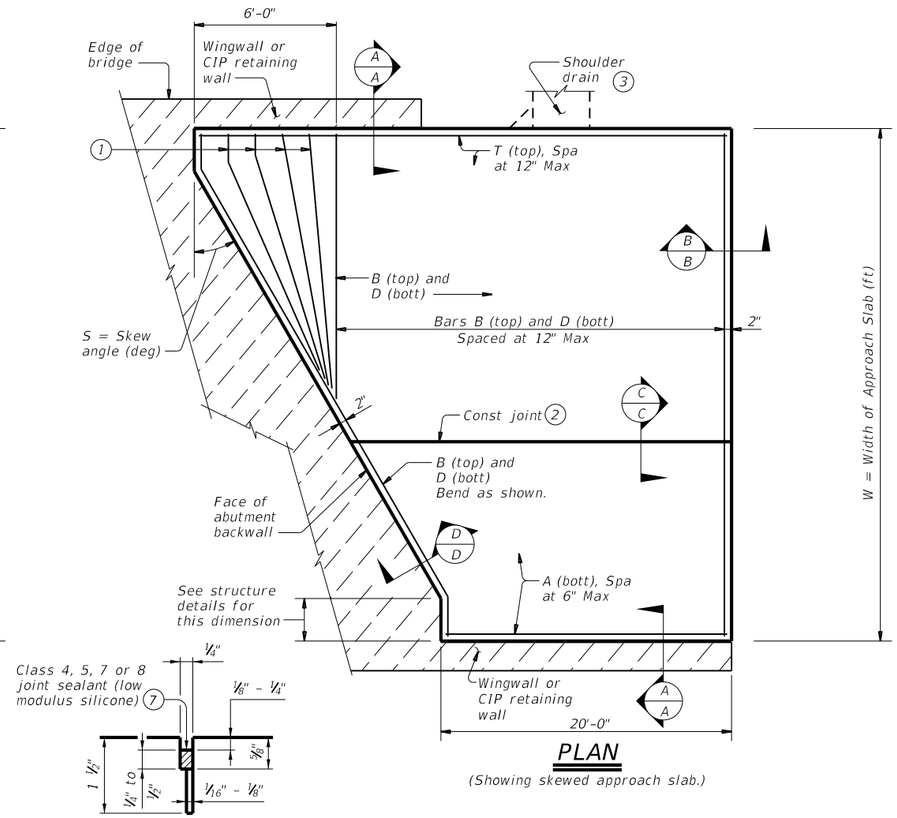


PLAN

(Showing non-skewed approach slab.)



PLAN

(Showing skewed approach slab.)

BAR TABLE

BAR	SIZE
A	#8
B	#5
D	#5
T	#5

APPROXIMATE QUANTITIES (4)

Reinf steel weight = 8.5 Lbs/SF of Approach Slab

Volume of Appr Slab Conc (CY) = $0.802W + 0.02W^2 \tan S$

W = Width of Approach Slab (ft)

S = Skew Angle (deg)

(1) Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.

(2) Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.

(3) See details elsewhere in plans for shoulder drain location and details.

(4) For Contractor's information only. Quantities shown are for one approach slab.

(5) Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.

(6) See details elsewhere in plans for required cross-slope.

(7) Place in accordance with Item 438.

(8) Provide backer rod that is 25% larger than joint opening and compatible with the sealant.

(9) If bridge rail is present at the wingwall or CIP retaining wall, place ½" rebonded recycled tire rubber between concrete railing and top of approach slab as shown when concrete railing projects over the approach slab.

GENERAL NOTES:

Construct approach slab in accordance with Item 422.

Provide Class "S" concrete with a minimum compressive strength of 4,000 psi.

Provide Grade 60 reinforcing steel.

Provide longitudinal joints as shown on the Longitudinal Saw Cut Joint Detail at lane lines and shoulders when width between longitudinal construction joints or edges of approach slab exceeds 16 feet. Saw cut joints within 24 hours of concrete placement to a depth of 1 ½" and seal in accordance with Item 438. Alternately, provide a controlled joint consisting of 1 ½" vinyl or plastic joint former (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)

Provide rebonded recycled tire rubber joint filler that meets the requirements of DMS-6310, "Joint Sealants and Fillers."

Construct the subgrade or subbase away from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans.

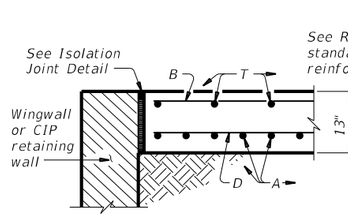
Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans.

Cure for 4 days using water or membrane curing per Item 422.

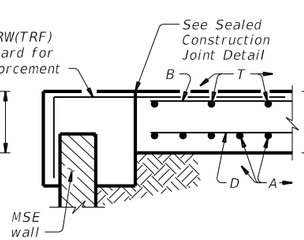
Provide a 1" (asphaltic concrete pavement or asphalt stabilized base) stress relieving pad between the approach slab and cement stabilized backfill or cement treated base. Other stress relieving pads may be used if approved by the Engineer.

All details shown herein are subsidiary to bridge approach slab.

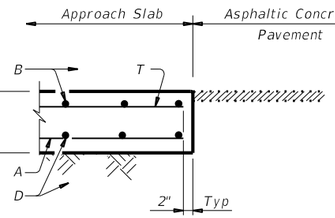
Cover dimensions are clear dimensions, unless noted otherwise.

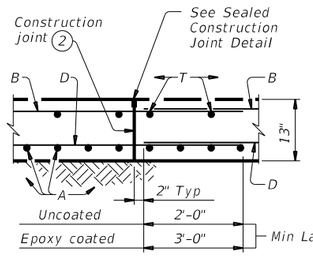


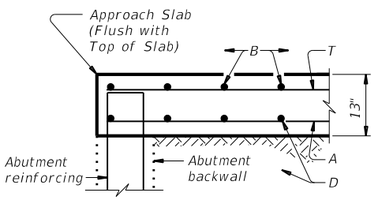
SHOWING WINGWALL OR CIP RETAINING WALL



SHOWING MSE WALL





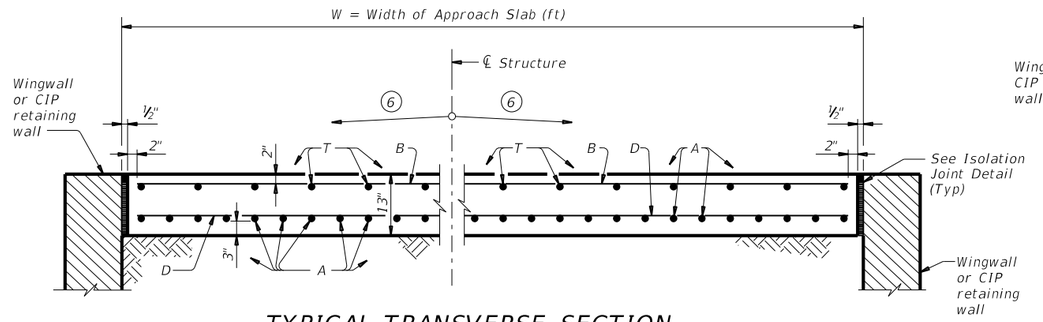


SECTION A-A

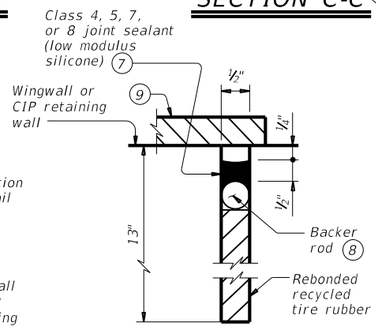
SECTION B-B

SECTION C-C (5)

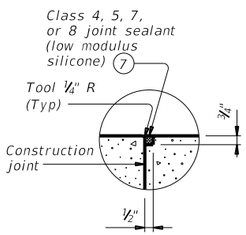
SECTION D-D



TYPICAL TRANSVERSE SECTION



ISOLATION JOINT DETAIL



SEALED CONSTRUCTION JOINT DETAIL

Texas Department of Transportation

Bridge Division Standard

BRIDGE APPROACH SLAB

ASPHALTIC CONCRETE PAVEMENT

BAS-A

FILE: basaste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
	DIST	COUNTY		SHEET NO.
				73

DATE:
FILE:

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

25 of 34

(HCDA 07-12-22

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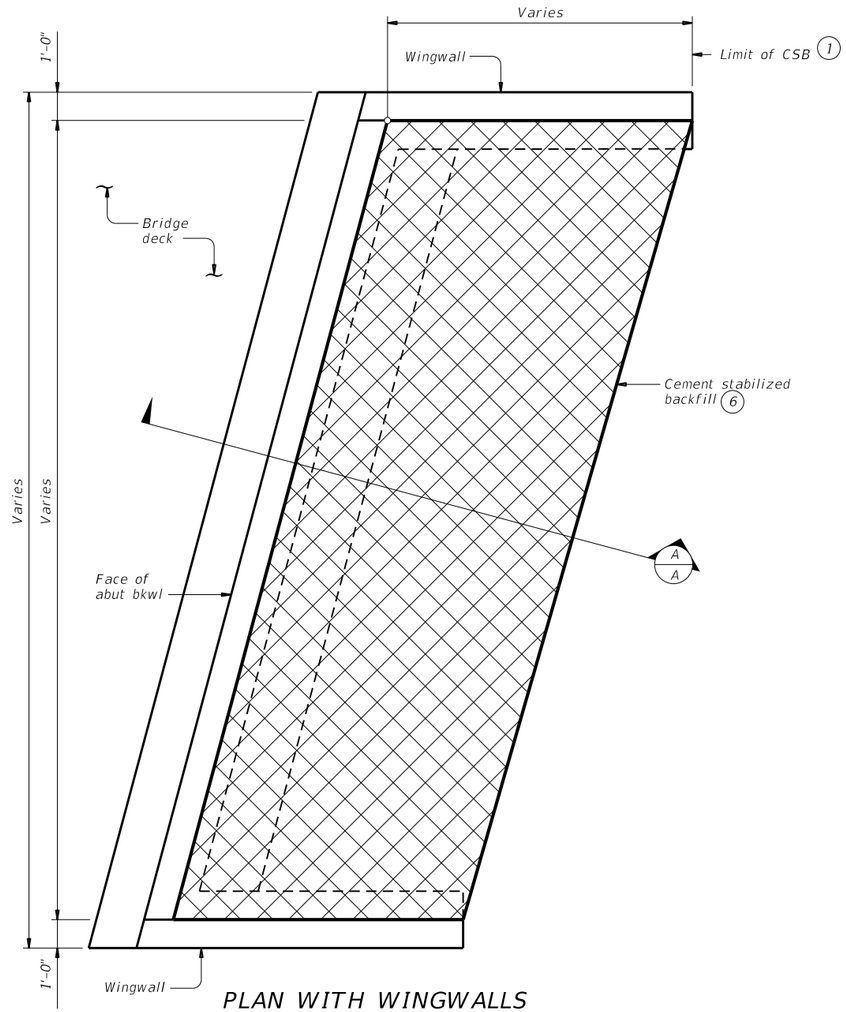
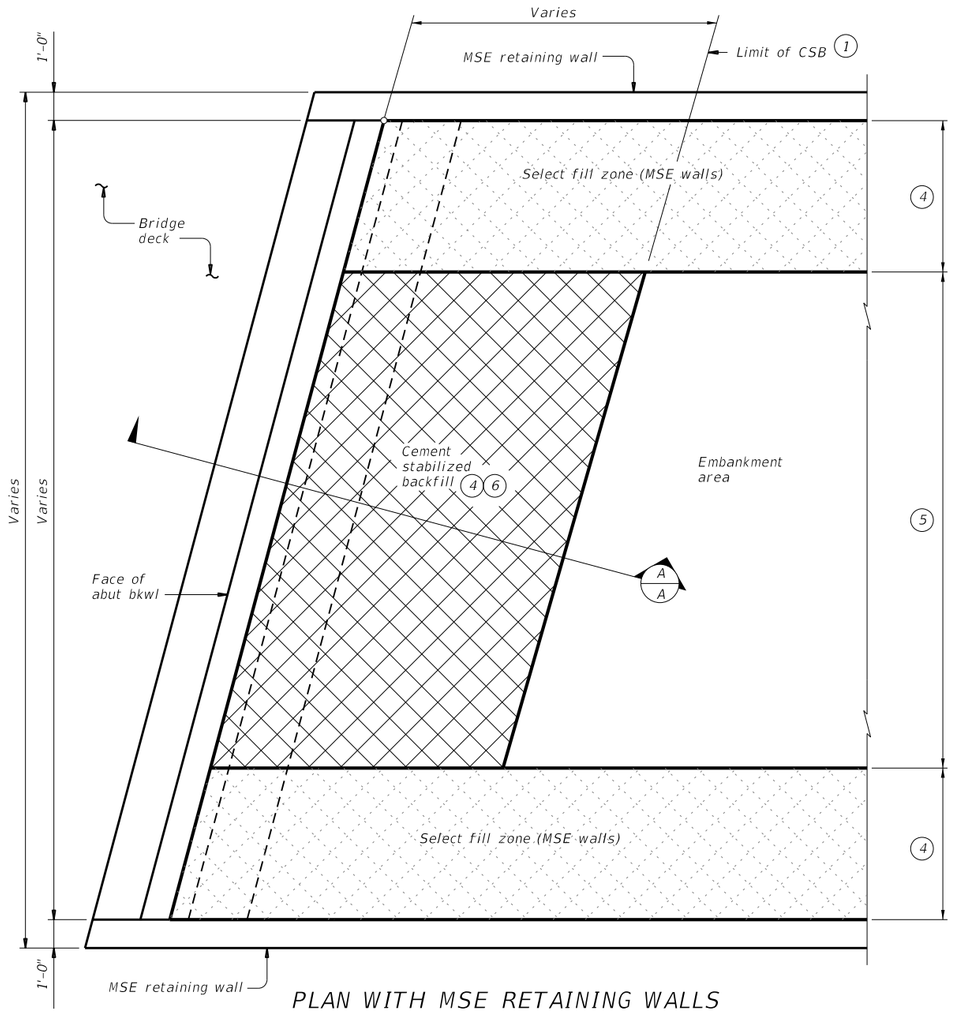
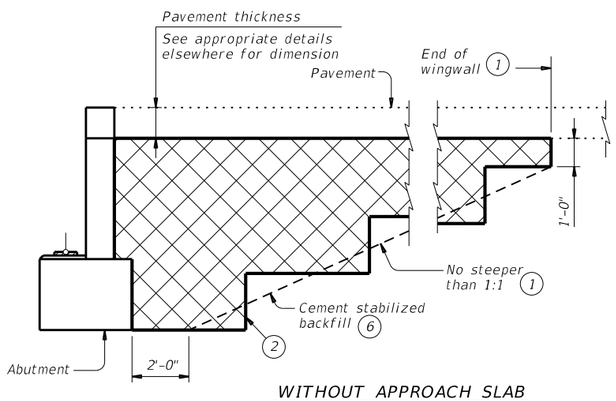


PLAN WITH WINGWALLS

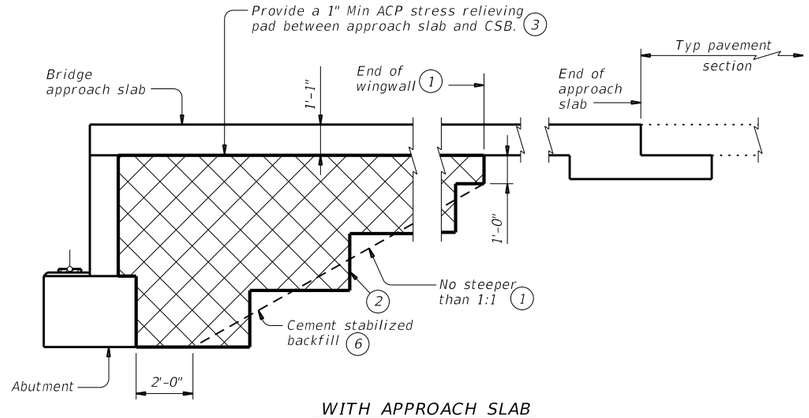
Cast-in-place retaining walls similar.



PLAN WITH MSE RETAINING WALLS



WITHOUT APPROACH SLAB



WITH APPROACH SLAB

SECTION A-A

(1) Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.

(2) Bench backfill as shown with 12" (approximate) bench depths.

(3) Other material can be used as a stress relieving pad if approved by Engineer.

(4) Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.

(5) When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.

(6) If shown in the plans flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
a). If flowable backfill is to be placed over MSE backfill then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
b). Place flowable fill in lifts not exceeding 2 feet in height, place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).

GENERAL NOTES:

Provide Cement Stabilized Backfill (CSB) meeting the requirements of Item 400, "Excavation and Backfill for Structures", to the limits shown at bridge abutments.

If required elsewhere in the plans, provide Flowable Backfill meeting the requiremnets of Item 401, "Flowable Backfill", the limits shown at bridge abutments.

Details are drawn showing left forward skew. See Bridge Layout for actual skew direction.

These details do not apply when Concrete Block retaining walls are used in lieu of wingwalls.

Texas Department of Transportation

Bridge Division Standard

CEMENT STABILIZED ABUTMENT BACKFILL

BRIDGE ABUTMENT

CSAB

FILE: csabste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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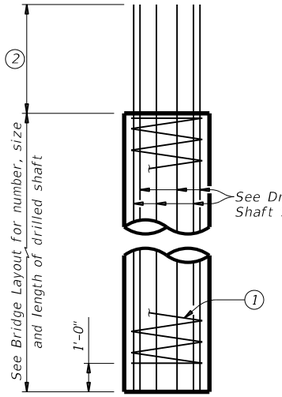
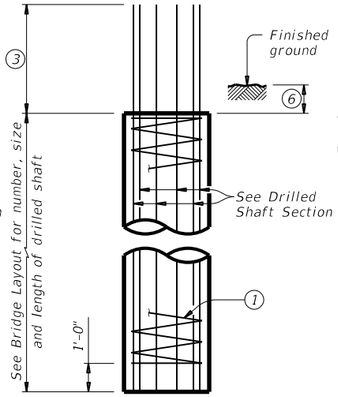
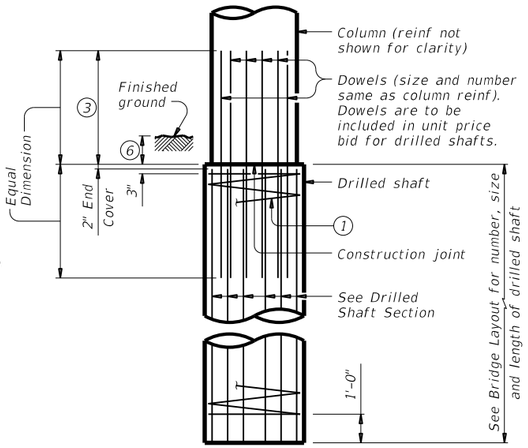


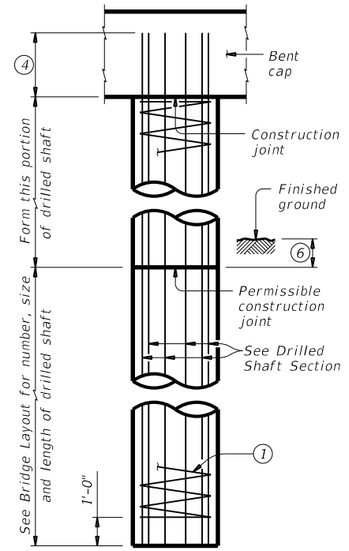
ABUTMENTS, WINGWALLS AND MULTI-DRILLED SHAFT FOOTINGS



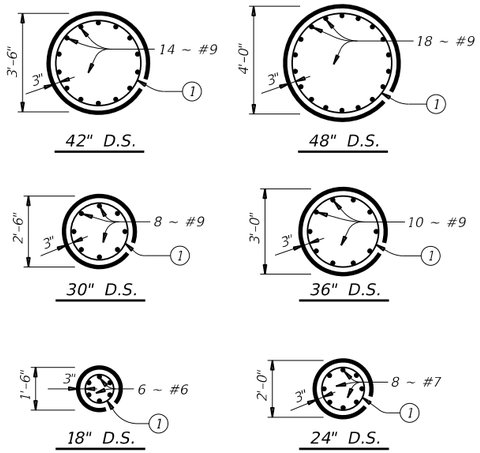
INTERIOR BENTS DRILLED SHAFT DIA EQUAL TO COLUMN DIA



INTERIOR BENTS DRILLED SHAFT DIA GREATER THAN COLUMN DIA



OPTIONAL INTERIOR BENT DRILLED SHAFT DETAIL (5)

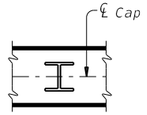


DRILLED SHAFT SECTIONS

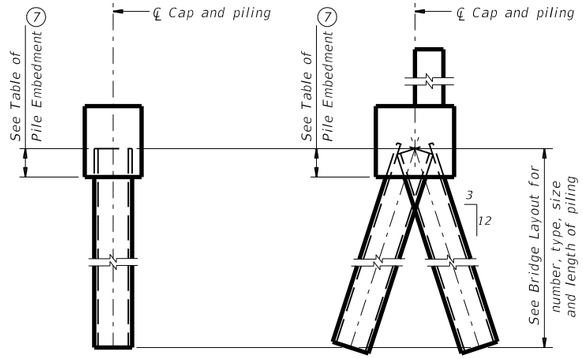
DRILLED SHAFT DETAILS

TABLE OF PILE EMBEDMENT	
Pile Type	Embedment Depth (Ft)
16" Sq Concrete 18" Sq Concrete HP14 Steel HP16 Steel	1'-0"
20" Sq Concrete 24" Sq Concrete HP18 Steel	1'-6"

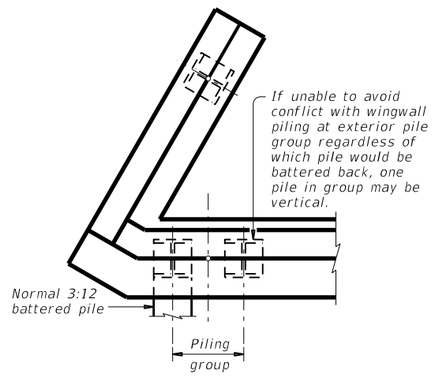
See Prestressed Concrete Piling (CP) standard for additional details on concrete pile embedment.



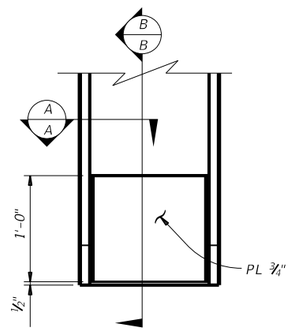
ORIENTATION OF STEEL H-PILING



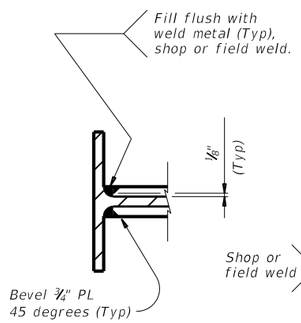
PILING DETAILS
(Concrete or steel H)



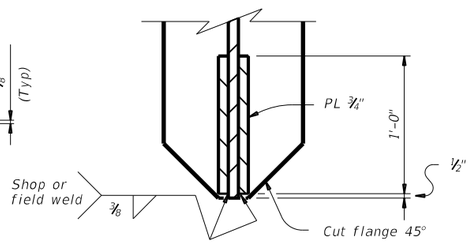
DETAIL "A"
(Showing plan view of a 30° skewed abutment)



ELEVATION



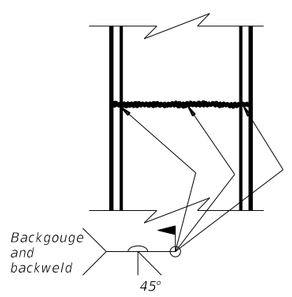
SECTION A-A



SECTION B-B

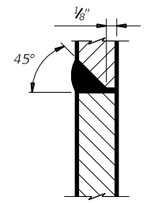
STEEL H-PILE TIP REINFORCEMENT

See Item 407 "Steel Piling" to determine when tip reinforcement is required and for options to the details shown.



STEEL H-PILE SPLICE DETAIL

Use when required.



SECTION THRU FLANGE OR WEB

(1) #3 spiral at 6" pitch (one and a half flat turns top and bottom).

(2) Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-0"
#9 Bars = 2'-3"

(3) Min lap with column reinf:
#7 Bars = 2'-11"
#9 Bars = 3'-9"

(4) Min extension into supported element:
#6 Bars = 1'-11"
#7 Bars = 2'-3"
#9 Bars = 2'-9"

(5) Drilled shafts may extend to the bottom of bent caps for "H" heights of 6 ft and less (as shown on the Bridge Layout), if approved. This option can only be used when the drilled shaft diameter equals the column diameter. Obtain approval of the forming method above the ground line prior to construction. No adjustments in payment will be made if this option is used.

(6) 1'-0" Min, unless shown otherwise on plans.

(7) Or as shown on plans.

Texas Department of Transportation

Bridge Division Standard

COMMON FOUNDATION DETAILS

FD

FILE: fdstde01-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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			DIST	SHEET NO.
				75

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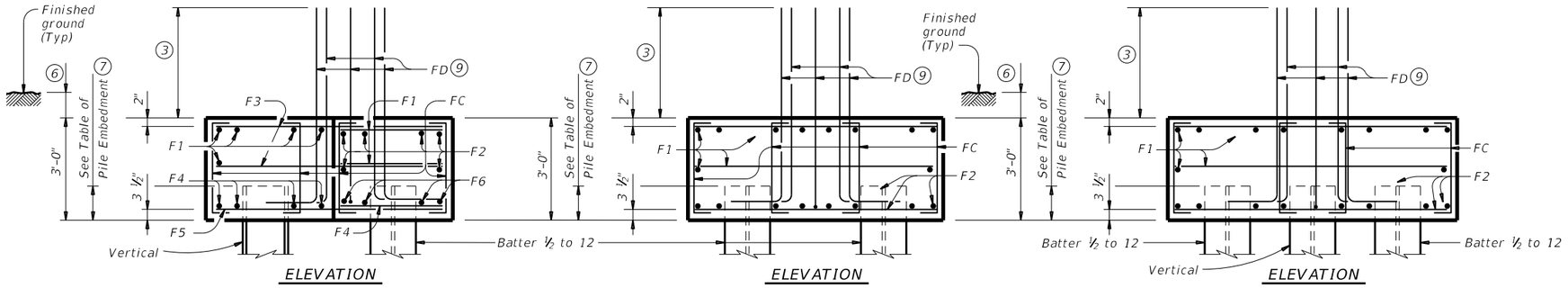

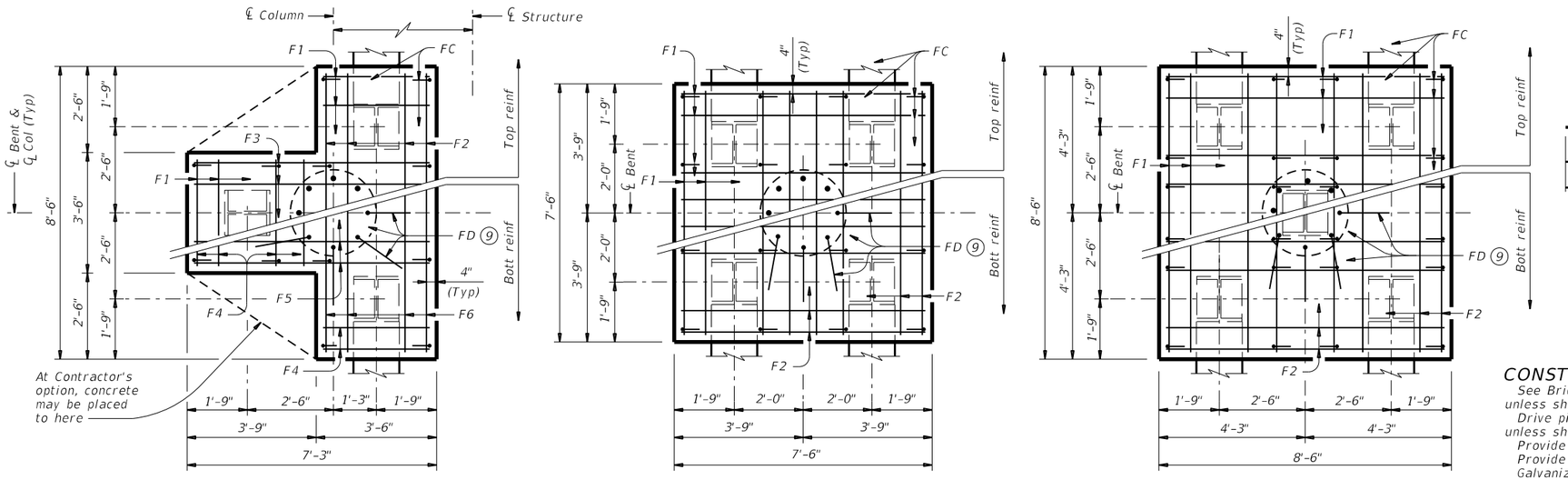

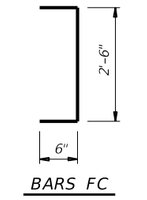

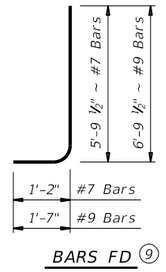

TABLE OF FOOTING QUANTITIES FOR 30" COLUMNS

ONE 3 PILE FOOTING

Bar	No.	Size	Length	Weight
F1	11	#4	3'- 2"	23
F2	6	#4	8'- 2"	33
F3	6	#4	6'- 11"	28
F4	8	#9	3'- 2"	86
F5	4	#9	6'- 11"	94
F6	4	#9	8'- 2"	111
FC	12	#4	3'- 6"	28
FD (10)	8	#9	8'- 8"	231
Reinforcing Steel			Lb	606
Class "C" Concrete			CY	4.8

ONE 4 PILE FOOTING

Bar	No.	Size	Length	Weight
F1	20	#4	7'- 2"	96
F2	16	#8	7'- 2"	306
FC	16	#4	3'- 6"	37
FD (11)	8	#9	8'- 8"	231
Reinforcing Steel			Lb	670
Class "C" Concrete			CY	6.3

ONE 5 PILE FOOTING

Bar	No.	Size	Length	Weight
F1	20	#4	8'- 2"	109
F2	16	#9	8'- 2"	444
FC	24	#4	3'- 6"	56
FD (11)	8	#9	8'- 6"	231
Reinforcing Steel			Lb	840
Class "C" Concrete			CY	8.0

THREE PILE FOOTING (8)

For 36" Dia and smaller columns.

FOUR PILE FOOTING (8)

For 42" Dia and smaller columns.

FIVE PILE FOOTING (8)

For 42" Dia and smaller columns.

(3) Min lap with column reinf:
#7 Bars = 2'-11"
#9 Bars = 3'-9"

(6) 1'-0" Min, unless shown otherwise on plans.

(7) Or as shown on plans.

(8) See Bridge Layout for type, size and length of piling.

(9) Number and size of FD bars must match column reinforcing. Tie FD bars to the top of the bottom reinforcing mat.

(10) For 24" columns, use #7 FD bars (7'-1") in place of #9 bars and deduct 116 lbs.
For 36" columns, add 2 FD bars (55 lbs).

(11) For 24" columns, use #7 FD bars (7'-1") in place of #9 bars and deduct 116 lbs.
For 36" columns, add 2 FD bars (55 lbs).
For 42" columns, add 6 FD bars (172 lbs)
(42" columns disallowed on 3 Pile Footings)

CONSTRUCTION NOTES:

See Bridge Layout for foundation type required. Use these foundation details unless shown otherwise.

Drive piling under abutment wingwalls to a minimum resistance of 10 Tons/Pile unless shown otherwise.

Provide Class C Concrete (f'c = 3,600 psi), unless shown otherwise.

Provide Grade 60 reinforcing steel.

Galvanize reinforcing if shown elsewhere in the plans.

Provide bar laps for drilled shaft reinforcing, where required, as follows:

Uncoated or galvanized (#6) ~ 2'-6"
Uncoated or galvanized (#7) ~ 2'-11"
Uncoated or galvanized (#9) ~ 3'-9"

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

DESIGNER NOTES:

Do not use the drilled shaft details shown on this standard for retaining wall, noise wall, barrier, or sign foundations without structural evaluation.

Do not use the footings shown on this standard in direct contact with salt water or exposed to salt water spray.

Maximum allowable pile loads for the footings shown are :

72 Tons/Pile with 24" Dia Columns
80 Tons/Pile with 30" Dia Columns
100 Tons/Pile with 36" Dia Columns
120 Tons/Pile with 42" Dia Columns

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

COMMON FOUNDATION DETAILS

FD

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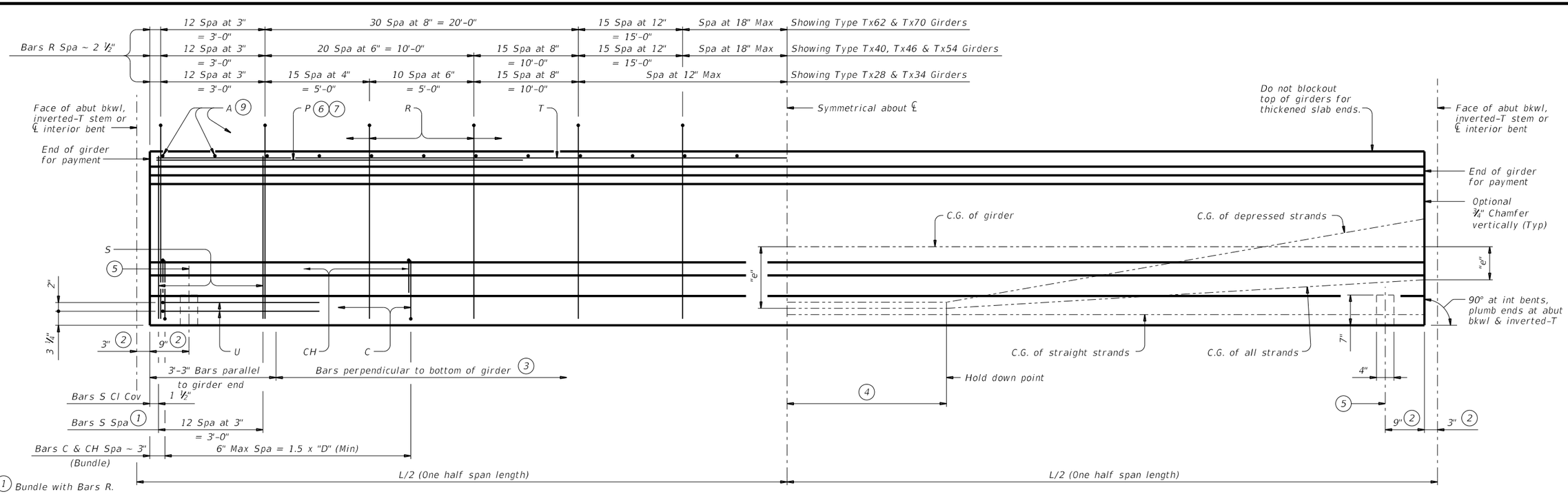


GIRDER ELEVATION

(1) Bundle with Bars R.

(2) Measured along ℄ Girder at interior bents; perpendicular to abutment bkwl or inverted-T stem.

(3) The average of the top and bottom spacing of Bars R cannot exceed the required spacing.

(4) L/20, but not less than 5'-0" (-0,+2').

(5) ℄ 4" x 1 ½" Vertical Slotted Hole at doweled girder end [labeled (D) on Bridge Layout]. Required for outside girder only or as shown on substructure details. Anchorage holes may be tapered (4 ¾" x 1 ⅝") at base. If holes are formed with sheet metal, forms may be left in place.

(6) Bars P (#6 x 15'-0") required in Tx62 and Tx70 girders. At the fabricator's option bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars T.

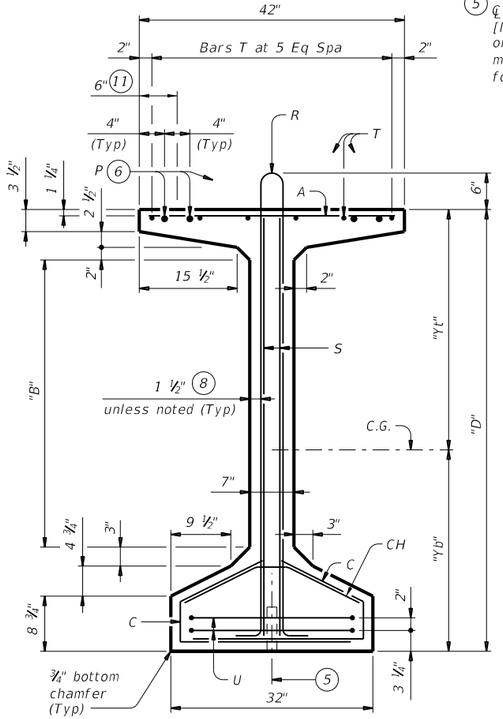
(7) Bars P (#6 x 15'-0") are only required in Tx28, Tx34, Tx40, Tx46, and Tx54 girders when "e" at girder ends exceeds 0.25 x "D". At the fabricator's option bars larger than #6 may be used. When L is less than 50 ft, Bars P are to be the same length as Bars T.

(8) 1 ⅜" Clear Cover to Bars S.

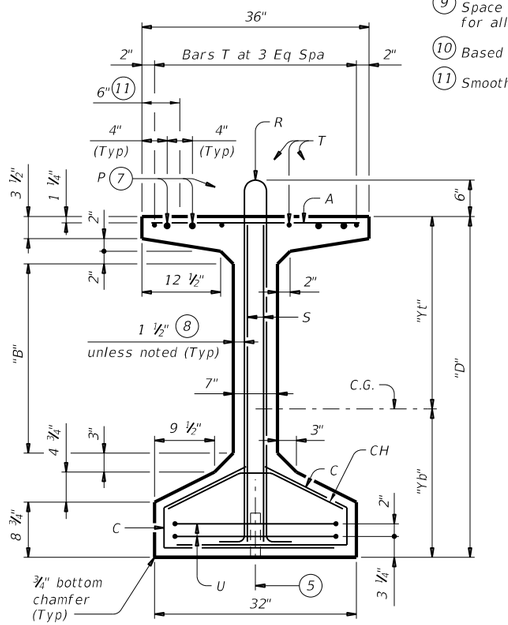
(9) Space Bars A at 6" Max for girders requiring overhang bracket hangers. Space at 12" Max for all other girders. Tie to Bars R as necessary. See standard IGMS for "Deck Forming Notes".

(10) Based on 155 pcf total weight of concrete and reinforcing steel.

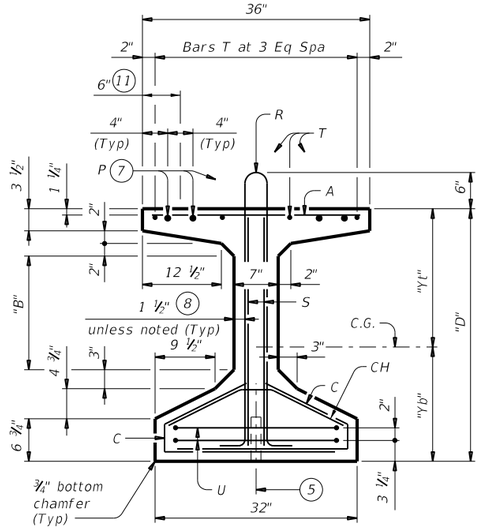
(11) Smooth trowel finish on the slab overhang side of exterior girder.



TYPE Tx62 & Tx70



TYPE Tx46 & Tx54



TYPE Tx28, Tx34 & Tx40

GIRDER DIMENSIONS AND SECTION PROPERTIES

Girder Type	"D" (in.)	"B" (in.)	"Yt" (in.)	"Yb" (in.)	Area (in.²)	"Ix" (in.⁴)	"Iy" (in.⁴)	Weight (10) (plf)
Tx28	28	6	15.02	12.98	585	52,772	40,559	630
Tx34	34	12	18.49	15.51	627	88,355	40,731	675
Tx40	40	18	21.90	18.10	669	134,990	40,902	720
Tx46	46	22	25.90	20.10	761	198,089	46,478	819
Tx54	54	30	30.49	23.51	817	299,740	46,707	880
Tx62	62	37 ½"	33.72	28.28	910	463,072	57,351	980
Tx70	70	45 ½"	38.09	31.91	966	628,747	57,579	1,040

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Provide Class H concrete.
Provide Grade 60 reinforcing steel.
An equal area of deformed Welded Wire Reinforcement (WWR) (ASTM A1064) may be substituted for Bars A, C, R or T unless otherwise noted.
It is permissible for bars or strands to come in contact with materials used in forming anchor holes.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE I-GIRDER DETAILS

IGD

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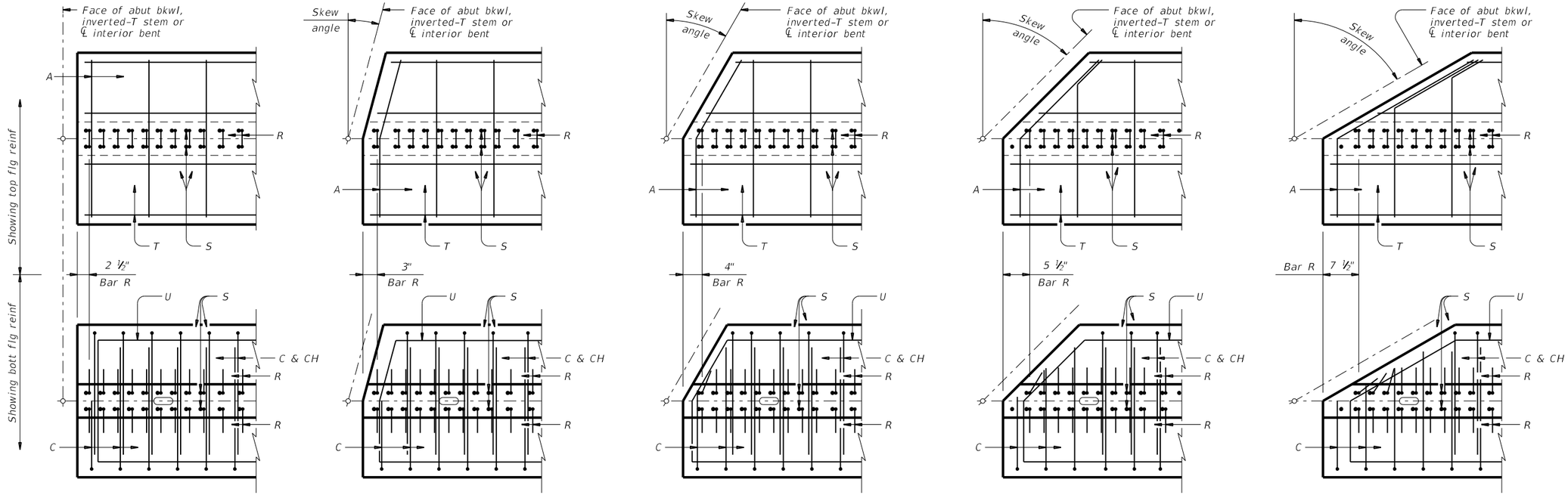
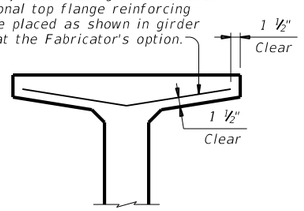
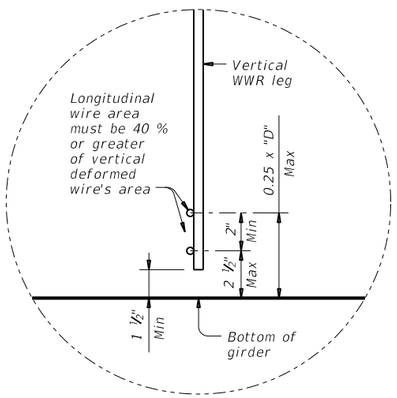


PLAN OF GIRDER ENDS (12)

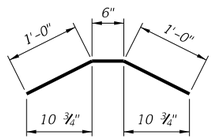
To control top flange cracking that may occur during form removal, additional top flange reinforcing may be placed as shown in girder ends at the Fabricator's option.



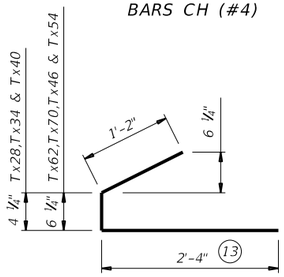
OPTIONAL TOP FLANGE REINFORCING DETAIL



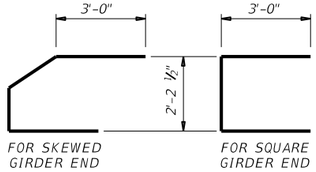
OPTIONAL WELDED WIRE REINFORCEMENT (WWR) DETAIL



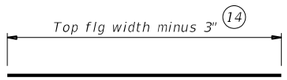
BARS CH (#4)



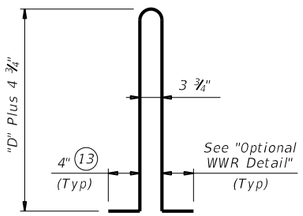
BARS C (#4)



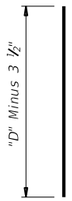
BARS U (#5)



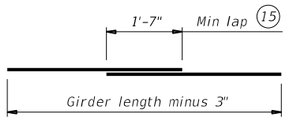
BARS A (#3)



BARS R (#4) (16)



BARS S (#6)



BARS T (#4)

(12) Reinforcing patterns shown are provided as guides to determine reinforcement placement in skewed ends. Place Bars S as close to girder end as cover requirements permit, which may prevent them to be bundled with Bars R.

(13) Bars may be cut or bent at skewed end as required.

(14) Increase as necessary for bars at skewed end.

(15) No portion of bar less than 10 ft.

(16) For Welded Wire Reinforcement (WWR) option, area of Bars R may be reduced in proportion to the increase in reinforcement yield strength over 60 ksi. Yield strength of WWR is limited to 75 ksi.

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Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE I-GIRDER DETAILS

IGD

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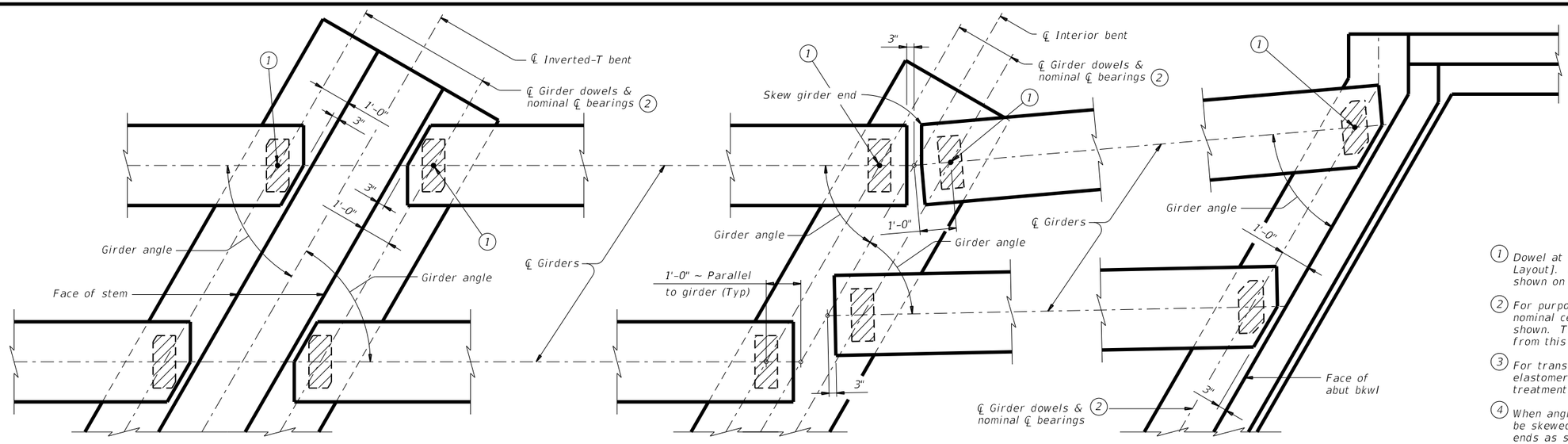


AT INVERTED-T BENT W/SKEW

AT CONVENTIONAL INTERIOR BENT W/SKEW

AT ABUTMENT W/SKEW (3)

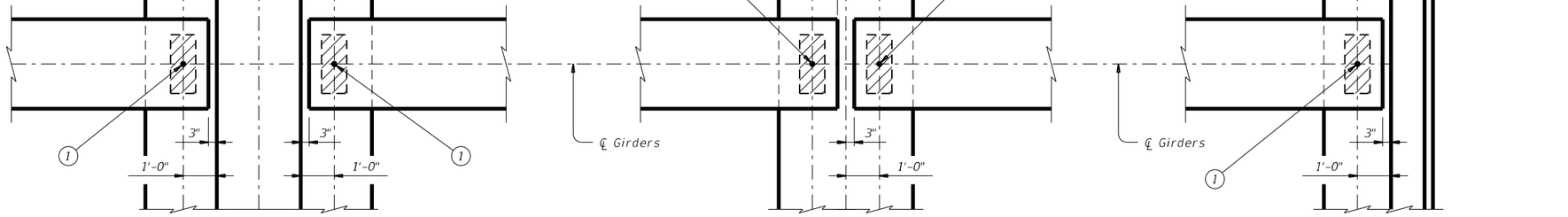
(1) Dowel at doweled girder end [labeled (D) on Bridge Layout]. Required for outside girder only or as shown on substructure details.

(2) For purposes of computing bearing seat elevations, nominal centerline of bearing must be defined as shown. The actual center of bearing pad may vary from this line.

(3) For transition bents with backwall, girder and elastomeric bearings must receive the same treatment as shown for abutments.

(4) When angle exceeds 0°, one or both girders ends must be skewed to maintain the clearance between girder ends as shown in view.

(5) See Table of Bearing Pad Dimensions for bearing size. Girder end skew angles in Table not applicable for this situation. Table reflects girder conflicts of this type on radial bents only.



AT INVERTED-T BENT

AT CONVENTIONAL INTERIOR BENT

AT ABUTMENT (3)

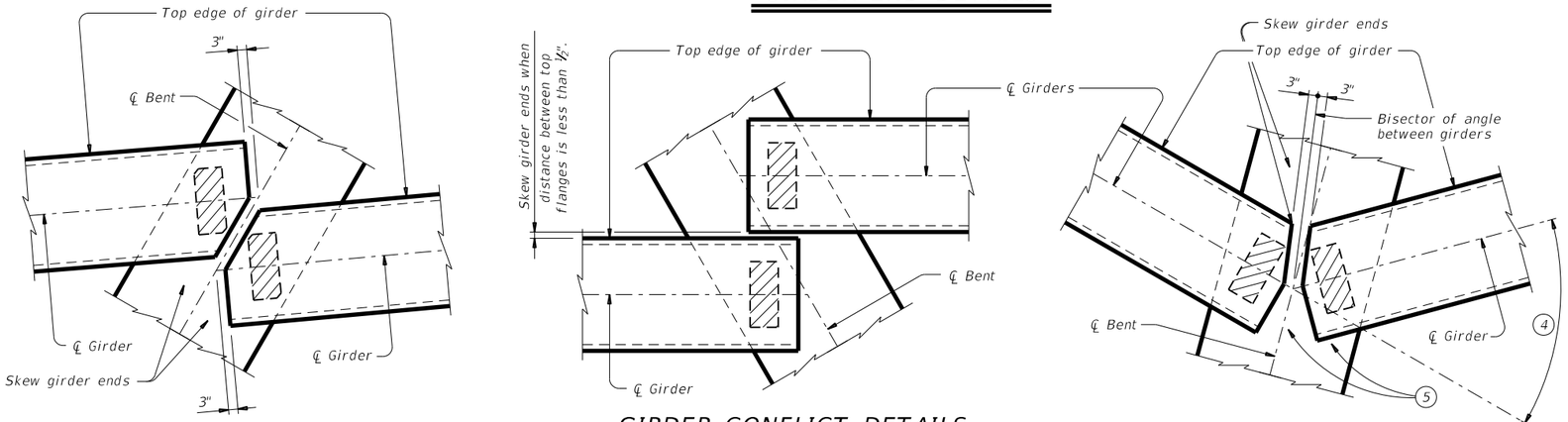
GIRDER END DETAILS

GENERAL NOTES:

These details accommodate skew angles up to 60°. Shop drawings for approval are required.

A bearing layout which identifies location and orientation of all bearings must be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. A copy of the bearing layout is to be provided to the Engineer.

Cost of furnishing and installing elastomeric bearings, including beveled and embedded steel plates, must be included in unit price bid for "Prestressed Concrete Girders".



GIRDER CONFLICT DETAILS

HL93 LOADING SHEET 1 OF 3

Texas Department of Transportation

Bridge Division Standard

ELASTOMERIC BEARING AND GIRDER END DETAILS

PRESTR CONCRETE I-GIRDERS

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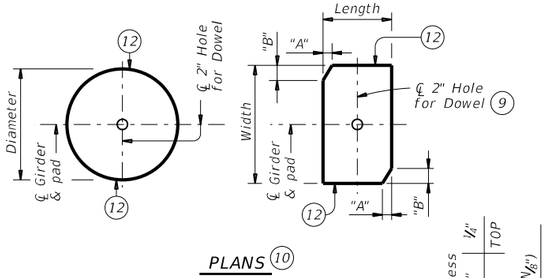
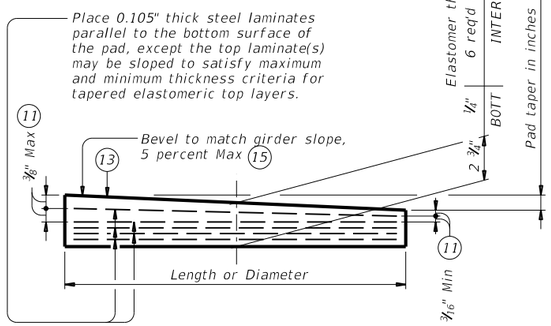


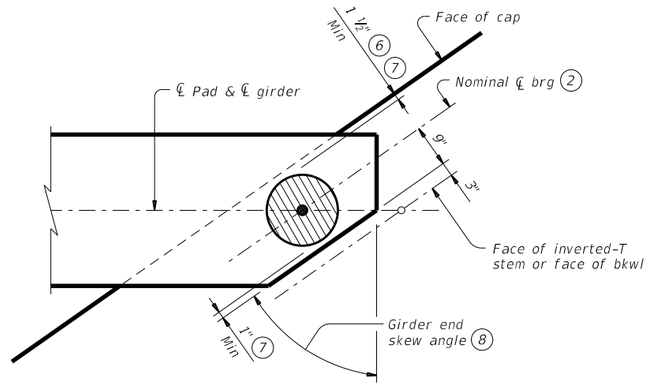
PLANS (10)



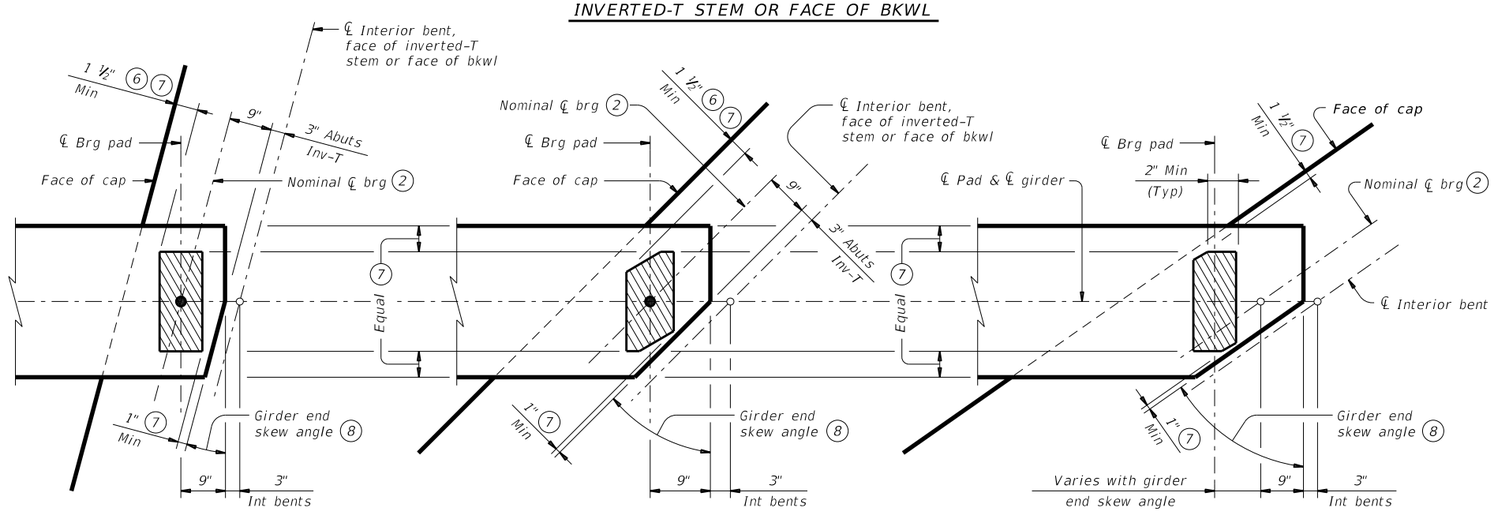
ELEVATION

LAMINATED ELASTOMERIC BEARING PAD

(50 DUROMETER)



ROUND BEARINGS FOR SKEWED GIRDER ENDS AT FACE OF INVERTED-T STEM OR FACE OF BKWL



SKEWED GIRDER ENDS AT INT BENTS, FACE OF INVERTED-T STEM OR FACE OF BKWL

SKEWED GIRDER ENDS AT CONVENTIONAL INTERIOR BENTS (16)

(NO GIRDER DOWELS)

BEARING PAD PLACEMENT DIAGRAMS

TABLE OF MINIMUM SUBSTRUCTURE DIMENSIONS (14)

Girder Type	Abutments	Int Bents	Inv-T Bents
	Face of Bkwl to Face of Cap	Overall Cap Width	Corbel Width
Tx28 thru Tx54	1'-9"	3'-6"	1'-10 ½"
Tx62 & Tx70	2'-0"	4'-0"	2'-1 ½"

TABLE OF BEARING PAD DIMENSIONS

Bent Type	Girder Type	Bearing Type (13)	Girder End Skew Angle Range	Pad Size Lgth x Wdth	Pad Clip Dimensions "A"	Pad Clip Dimensions "B"
ABUTMENTS, INVERTED-T AND TRANSITION BENTS WITH BACKWALLS	Tx28,Tx34, Tx40,Tx46 & Tx54	G-1-"N"	0° thru 21°	8" x 21"	---	---
		G-2-"N"	21°+ thru 30°	8" x 21"	1 ½"	2 ½"
		G-3-"N"	30°+ thru 45°	9" x 21"	4 ½"	4 ½"
		G-4-"N"	45°+ thru 60°	15" Dia	---	---
	Tx62 & Tx70	G-5-"N"	0° thru 21°	9" x 21"	---	---
		G-6-"N"	21°+ thru 30°	9" x 21"	1 ½"	2 ½"
		G-7-"N"	30°+ thru 45°	10" x 21"	4 ½"	4 ½"
		G-8-"N"	45°+ thru 60°	10" x 21"	7 ¼"	4 ¼"
CONVENTIONAL INTERIOR BENTS	Tx28,Tx34, Tx40,Tx46 & Tx54	---	---	---	---	---
		---	---	---	---	---
		G-1-"N"	0° thru 60°	8" x 21"	---	---
	Tx62 & Tx70	G-5-"N"	0° thru 60°	9" x 21"	---	---
CONVENTIONAL INTERIOR BENTS WITH SKEWED GIRDER ENDS (GIRDER CONFLICTS) (16)	Tx28,Tx34, Tx40,Tx46 & Tx54	G-1-"N"	0° thru 18°	8" x 21"	---	---
		G-2-"N"	18°+ thru 30°	8" x 21"	1 ½"	2 ½"
		G-9-"N"	30°+ thru 45°	8" x 21"	3"	3"
		G-10-"N"	45°+ thru 60°	9" x 21"	6"	3 ½"
	Tx62 & Tx70	G-5-"N"	0° thru 18°	9" x 21"	---	---
		G-5-"N"	18°+ thru 30°	9" x 21"	---	---
		G-11-"N"	30°+ thru 45°	9" x 21"	1 ½"	1 ½"
		G-12-"N"	45°+ thru 60°	9" x 21"	3"	1 ¾"

(2) For purposes of computing bearing seat elevations, nominal centerline of bearing must be defined as shown. The actual center of bearing pad may vary from this line.

(6) 3" for inverted-T.

(7) Place centerline pad as near nominal centerline bearing as possible between limits shown.

(8) Girder end skew angle is equal to 90° minus the girder angle except at some conflicting girders.

(9) Provide 2" dia hole only at locations required. See Substructure details for location.

(10) See Table of Bearing Pad Dimensions for dimensions.

(11) Maximum and minimum layer thicknesses shown are for elastomer only, on tapered layers.

(12) Locate Permanent Mark here.

(13) Indicate BEARING TYPE on all pads. For tapered pads, locate BEARING TYPE on the high side. The Fabricator must include the value of "N" (amount of taper in ⅛" increments) in this mark.
Examples: N=0, (for 0" taper)
N=1, (for ⅛" taper)
N=2, (for ¼" taper)
(etc.)
Fabricated pad top surface slope must not vary from plan girder slope by more than $\left(\frac{0.0625"}{\text{Length or Dia}}\right)$ IN/IN.

(14) Substructure dimensions must satisfy the minimums provided to accommodate the elastomeric bearings shown on this standard.

(15) See sheet 3 of 3 for beveled plate use when slopes exceed 5 percent.

(16) If girder end is skewed for a girder conflict at an interior bent and a beveled sole plate is required, use bearing type for abutments at this location. Location of bearing centerline is to be set as for abutments in this case.

HL93 LOADING SHEET 2 OF 3

Texas Department of Transportation | Bridge Division Standard

ELASTOMERIC BEARING AND GIRDER END DETAILS

PRESTR CONCRETE I-GIRDERS

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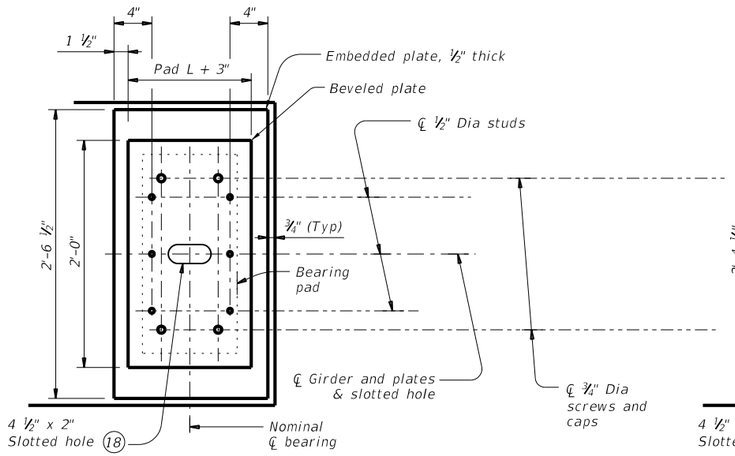
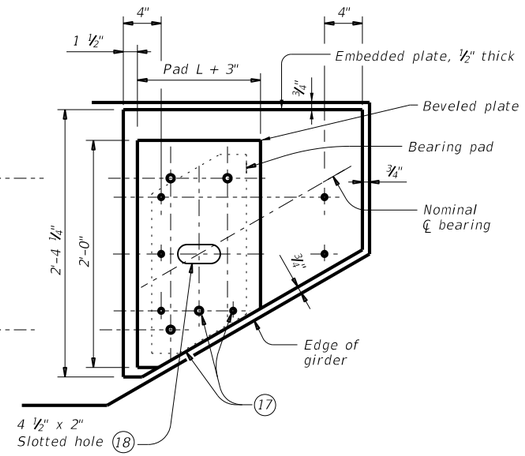
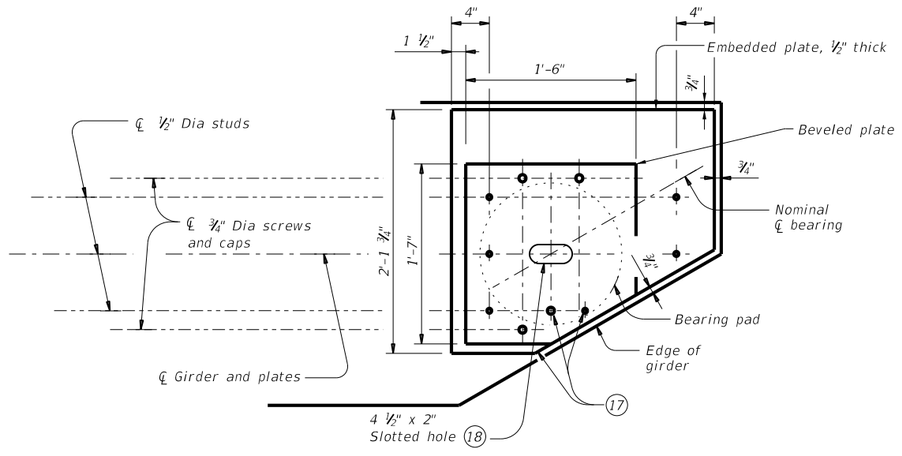


NORMAL GIRDER END
RECTANGULAR BEARING PAD

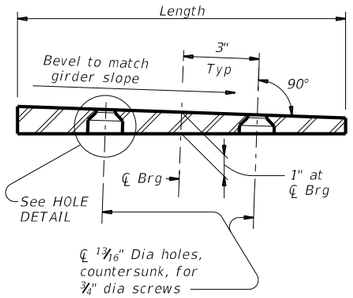


SKEWED GIRDER END
CLIPPED RECTANGULAR BEARING PAD

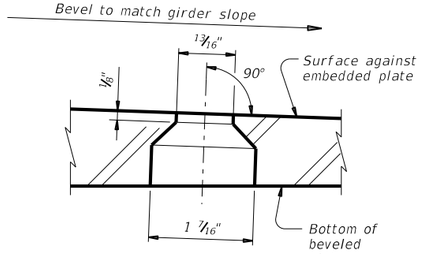


SKEWED GIRDER END
15" DIA BEARING PAD

PLAN VIEW OF SOLE PLATE DETAILS

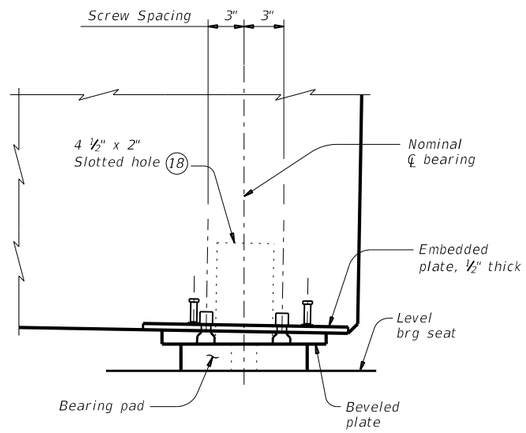


SECTION

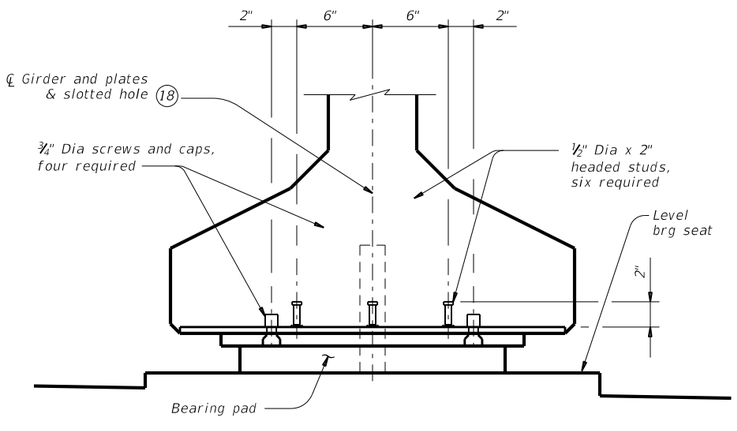


HOLE DETAIL

BEVELED PLATE DETAILS



SIDE ELEVATION



END ELEVATION
Showing normal girder end.

GIRDER DETAILS

(17) Cut beveled and embedded plates to match girder end skew. Adjust location of screw and stud as shown when necessary.

(18) Slotted hole is required at doweled girder end locations.

SOLE PLATE NOTES:

Provide constant thickness elastomeric bearings with beveled and embedded steel sole plates in accordance with these details when the girder slope exceeds 5 percent or if otherwise required in the plans. Provide for all girders in the span.

On the shop drawings, dimension sole plates to the nearest 1⁄16" based on required thickness at centerline of bearing and slope of girder. Thickness tolerance variation from the approved shop drawings is 1⁄16"+/-, except variation from a plane parallel to the theoretical top surface can not exceed 1⁄16" total. Bearing surface tolerances listed in Item 424 apply to embedded and beveled plates.

Steel plate must conform to ASTM A36, A572 Gr 50, or A709 Gr 36 or Gr 50. Hot dip galvanize both the embedded plate and beveled sole plate after fabrication. Seal weld caps to embedded plate before galvanizing.

When determining if relocation of screw holes and studs are necessary for skewed girder ends, minimum clearance from screw or stud centerline to plate edge is 1.25".

Tap threads in the embedded plate only. Drill and tap prior to galvanizing.

¾" Dia screws must be electroplated, socket flat head countersunk cap screws conforming to ASTM F835. Electroplating must conform to ASTM B633, SC 2, Type I. Provide screws long enough to maintain a ¾" minimum embedment into the embedded plate and galvanized cap. Provide galvanized steel caps (16 ga Min) with a nominal 1" inside diameter and deep enough to accommodate the screws, but not less than ½" deep or deeper than 1".

Install beveled sole plates prior to shipping girders. Installed screw heads must not protrude below the bottom of the beveled plate.

HL93 LOADING SHEET 3 OF 3

Texas Department of Transportation | Bridge Division Standard

ELASTOMERIC BEARING AND GIRDER END DETAILS
PRESTR CONCRETE I-GIRDERS

IGEB

FILE: igebsts1-17.dgn	DN: AEE	CK: JMH	DW: JTR	CK: TxDOT
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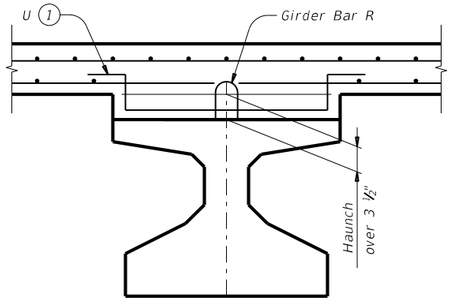
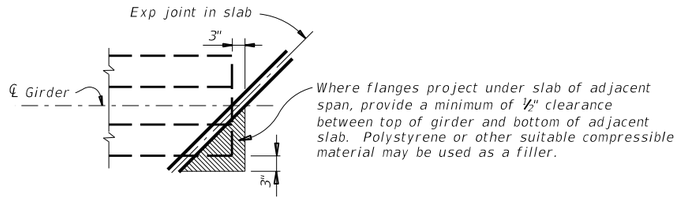
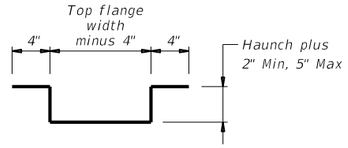


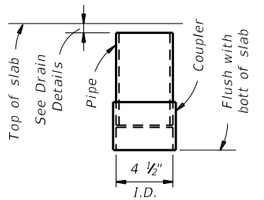
HAUNCH REINFORCING DETAIL



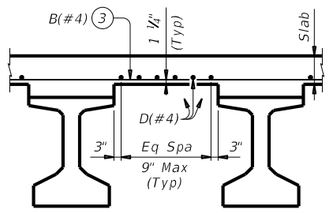
TREATMENT AT GIRDER END FOR SKEWED SPANS



BARS U (#4)

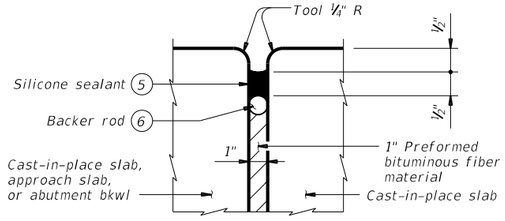


C-I-P DRAIN DETAIL (2)

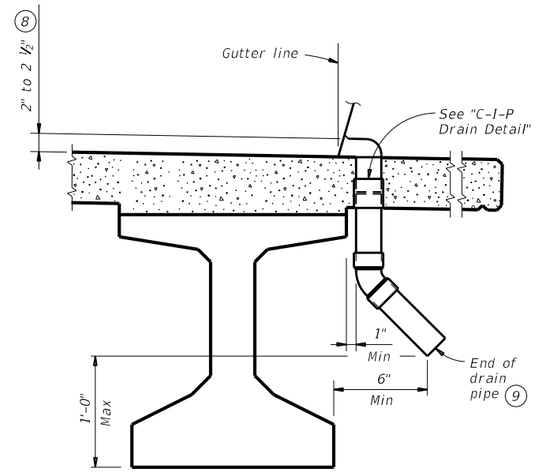


TYPICAL PART TRANSVERSE SLAB SECTION WITHOUT PCP (4)

Top reinforcing steel not shown for clarity.



TYPE A JOINT DETAIL (7)



DRAIN DETAIL (10)

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

All items (reinforcing steel, drains, joint formers, etc.) shown on this sheet are subsidiary to other bid items.

Cover dimensions are clear dimensions, unless noted otherwise.

Reinforcing bar dimensions shown are out-to-out of bar.

DECK FORMWORK NOTES:

Overhang bracket hangers are limited to a safe working load of 3,600 lbs, applied to and along the axis of a coil rod at 45 degrees from vertical, regardless of higher loads permitted by hanger manufacturers. Do not place a hanger less than 12" from girder end. Space hangers accordingly.

(1) Space Bars U with girder Bars R in all areas where measured haunch exceeds 3 ½".

(2) Roughen outside of PVC with coarse rasp or equal to ensure bond with cast-in-place concrete.

(3) Bars B(#4) spaced at 9" Max with 2" end cover. Overhang option, Contractor's may end alternating bars B(#4) at centerline outside girder.

(4) Provide Grade 60 reinforcing steel. Provide bar laps, where required, as follows:
Uncoated ~ #4 = 1'-7"
Epoxy coated ~ #4 = 2'-5"

(5) Class 7 silicone sealant that conforms to DMS-6310. Install when ambient temperature is between 55°F and 85°F and rising. Engineer to determine allowable hours for sealant application.

(6) 1 ¼" backer rod must be compatible with joint sealant. Use of multiple pieces to create a backer rod cross section is not permitted. Top of backer rod must be convex as shown.

(7) The maximum distance between Type A expansion joints is 100'. See Bridge Layout for location of joints. Type A joints are subsidiary to Item 422, "Concrete Superstructures".

(8) Drain entrance formed in rail or sidewalk.

(9) Water may not be discharged onto girders.

(10) All drain pipe and fittings to be 4" diameter (Sch 40) PVC. See Item 481 "Pipe for Drains" for pipe, connections and solvent welding. Bend reinforcing steel to clear PVC 1". Drain length and location is as directed by the Engineer. Drains are not permitted over roadways or railways, or within 10'-0" of bent caps. Degrease outside of exposed PVC, apply acrylic water base primer, then coat with same surface finishing material as used for outside girder face. Variations of the above designs, as required for the type of rail used and its location on the structure, may be installed with the approval and direction of the Engineer.

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

MISCELLANEOUS SLAB DETAILS
PRESTR CONCRETE I-GIRDERS

IGMS

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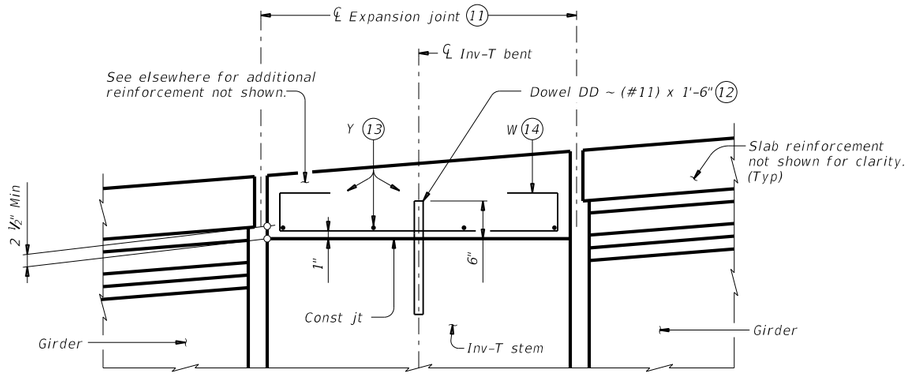
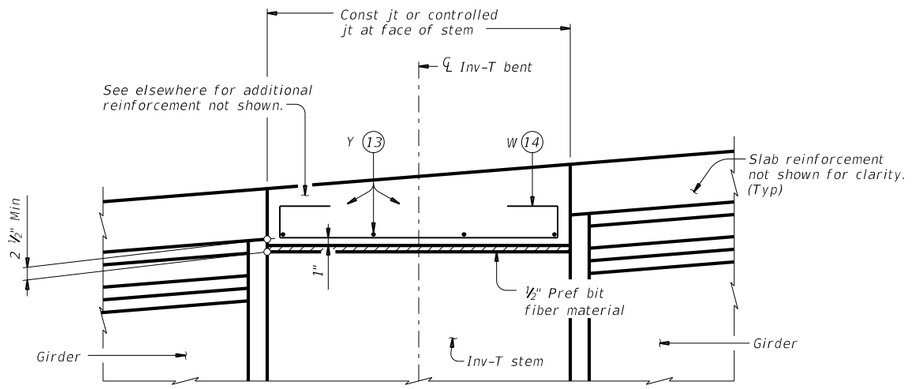
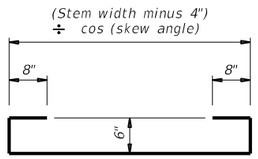


SHOWING EXPANSION JOINTS

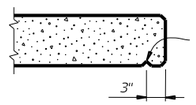


SHOWING CONST JTS OR CONTROLLED JTS

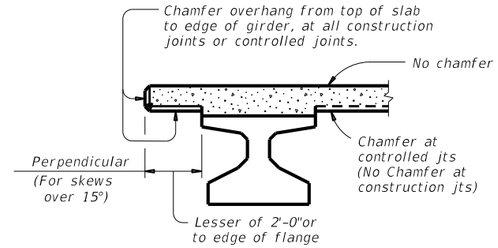
REINFORCEMENT OVER INV-T BENTS



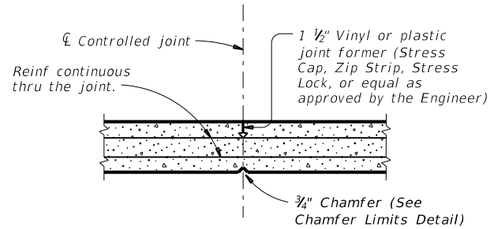
BARS W (#4)



DRIP BEAD DETAIL



CHAMFER LIMITS DETAIL (15)



CONTROLLED JOINT DETAIL

(Saw-cutting is not allowed)

(11) See Layout for joint type.

(12) Dowels DD (#11) spaced at 5 Ft Max. See Inv-T bents for quantity and location.

(13) Space Bars Y (#4) at 12" Max. Use 2" end cover. Number of Bars Y must satisfy spacing limit. Place parallel to bent.

(14) Space Bars W at 12" Max (3" from end of cap). Tilt if necessary to maintain cover requirements. Place parallel to longitudinal slab reinforcement.

(15) See Span details for type of joint and joint locations.

Texas Department of Transportation

Bridge Division Standard

MISCELLANEOUS SLAB DETAILS

PRESTR CONCRETE I-GIRDERS

IGMS

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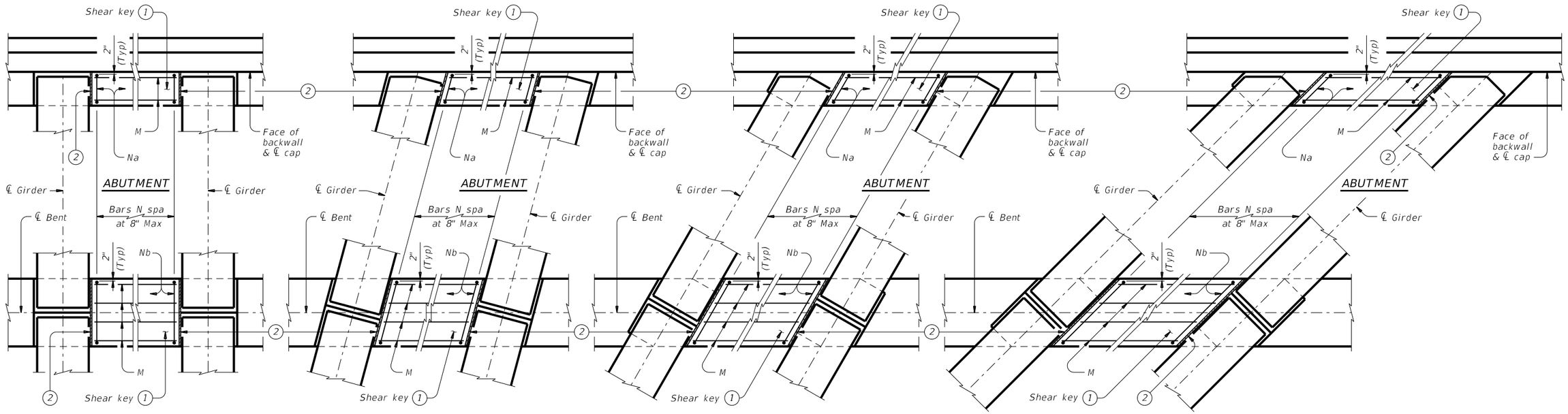


INTERIOR BENT

PARTIAL PLANS WITH NO SKEW

Showing shear keys on 3'-6" wide caps. 4'-0" caps similar.

INTERIOR BENT

PARTIAL PLANS WITH 15° SKEW

Showing shear keys on 3'-6" wide caps. 4'-0" caps similar.

INTERIOR BENT

PARTIAL PLANS WITH 30° SKEW

Showing shear keys on 3'-6" wide caps. 4'-0" caps similar.

INTERIOR BENT

PARTIAL PLANS WITH 45° SKEW

Showing shear keys on 3'-6" wide caps. 4'-0" caps similar.

(1) Place shear keys on the upstream side of structure between outside girder and next adjacent girder, unless shown otherwise on plans.

(2) UHMW polyethylene wear pad. (Typ)

(3) Leave a ¼" gap plus or minus between girder and face of wear pad. Cast wear pad with shear key, smooth side facing girder. Care must be taken to keep concrete from flowing under girder. Slope top of shear keys in accordance with Item 420.4.9, "Treatment and Finishing of Horizontal Surfaces."

(4) Measure at higher bearing seat elevation forward or back. Dimension based on typical bearing pad and bearing seat. Increase as necessary to maintain 5" overlap.

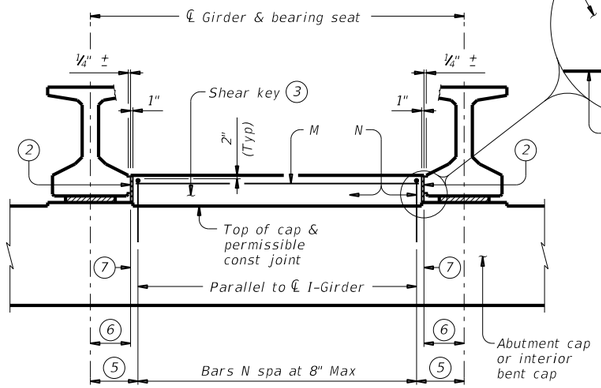
(5) With No Skew = 1'-8 ¼", measured along ℄ cap.
With Skew = 1'-8 ¼" ∓ Cos Skew, measured along ℄ cap.

(6) With No Skew = 1'-4 ¼", measured along ℄ cap.
With Skew = 1'-4 ¼" ∓ Cos Skew, measured along ℄ cap.

(7) Face of UHMW polyethylene wear pad. Smooth side of pad facing girder.

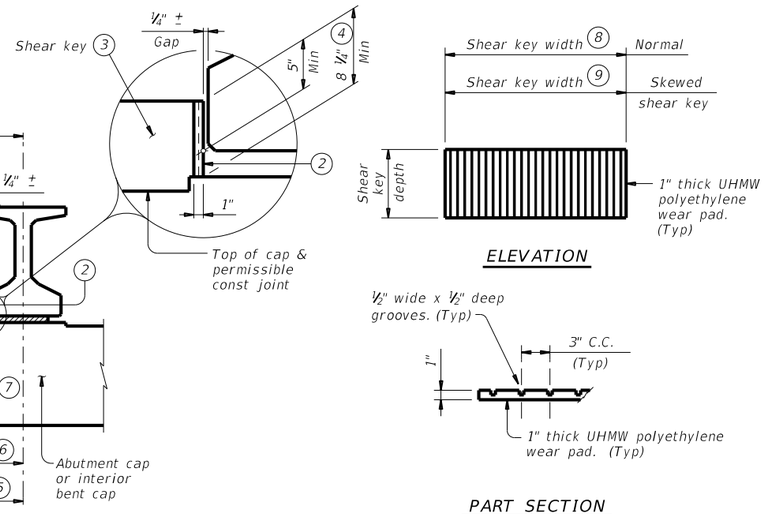
(8) Abutments = ½ Cap width.
Interior bents = Cap width.

(9) Abutments = ½ Cap width ∓ Cos Skew.
Interior bents = Cap width ∓ Cos Skew.

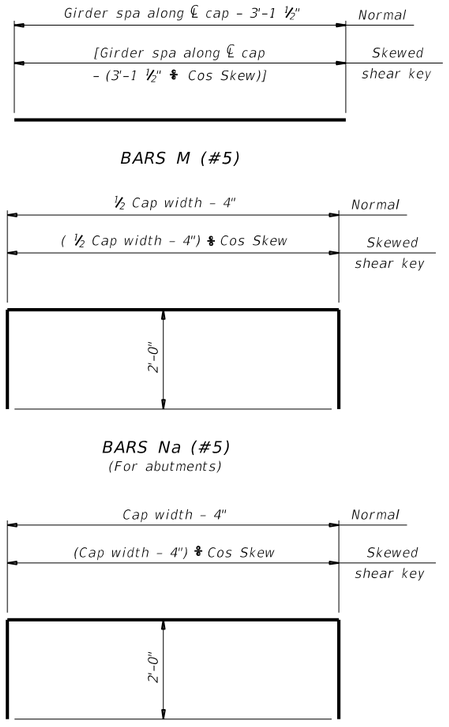


PARTIAL ELEVATION OF ABUTMENT OR INTERIOR BENT CAP (1)

Showing shear key with girder Type Tx46. Other I-Girder types similar.



ULTRA HIGH MOLECULAR WEIGHT (UHMW) POLYETHYLENE WEAR PAD DETAILS



CONSTRUCTION NOTES:

Provide Class "C" concrete (f'c = 3,600 psi). Provide Class "C" (HPC) if shown elsewhere on the plans.
Provide Grade 60 reinforcing steel.
Provide epoxy coated reinforcing steel for shear key if abutment or interior bent reinforcing steel is epoxy coated.
Provide Ultra High Molecular Weight (UHMW) polyethylene wear pads in accordance with ASTM D6712.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Details showing skew are drawn showing right forward skew. See Bridge Layout for actual skew direction.
These details are limited to bridges skewed 45 degrees and less.
This standard is only applicable for I-Girders.
Modify details for bearing conditions, and girder spacing not shown on this standard. Details do not account for sole plate or pedestal bearing seat.
Include shear key concrete in abutment or bent concrete for payment.
UHMW polyethylene wear pads are subsidiary to Class "C" concrete.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

Texas Department of Transportation

Bridge Division Standard

SHEAR KEY DETAILS
PRESTR CONCRETE I-GIRDERS

IGSK

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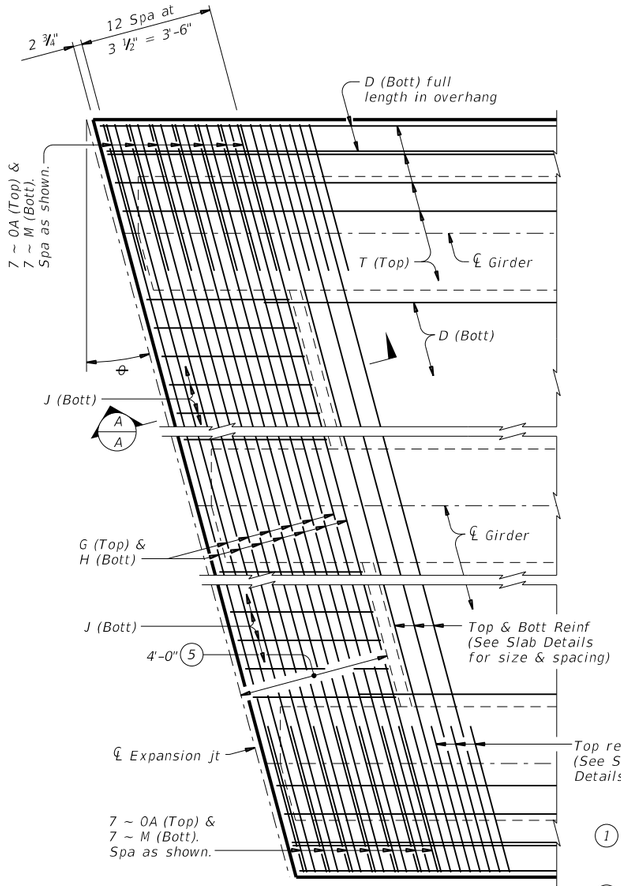
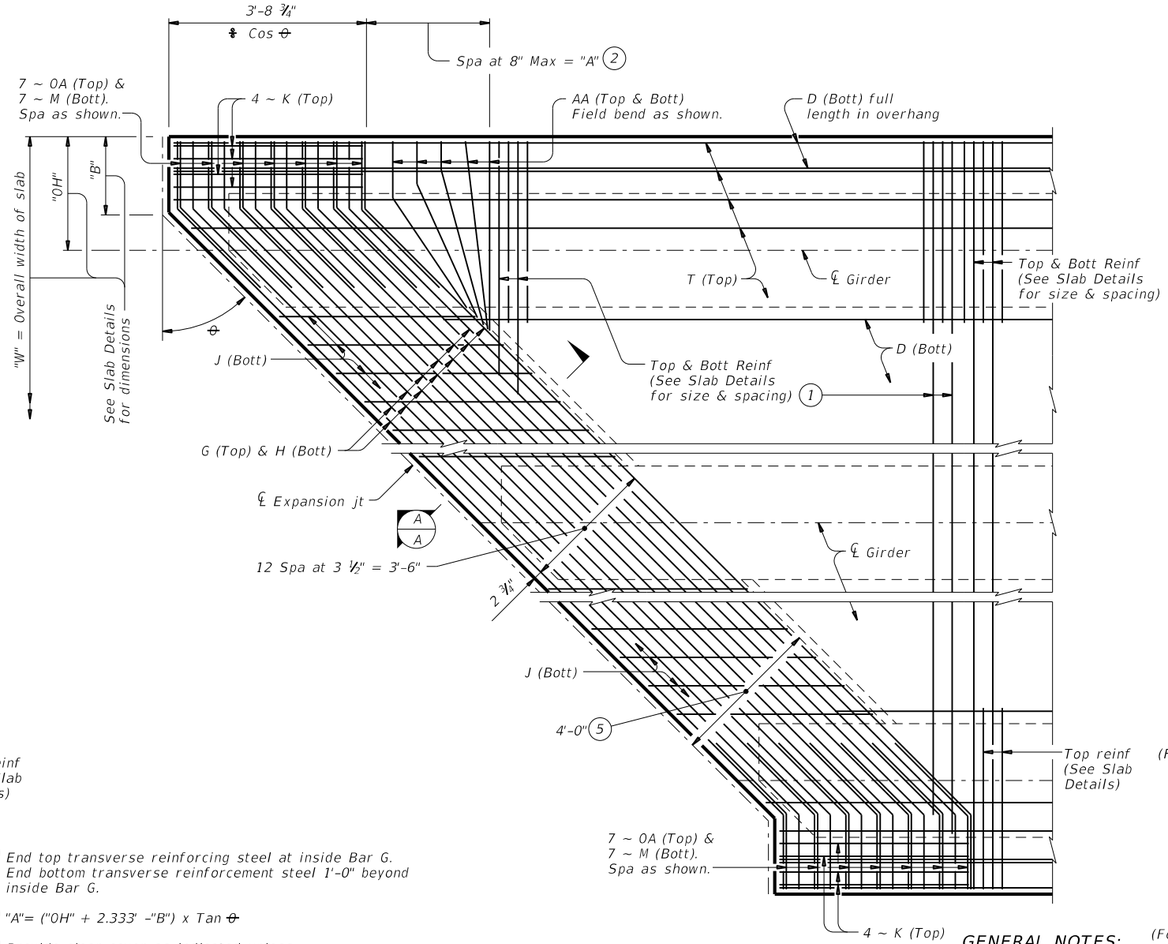


PARTIAL PLAN FOR SLABS WITHOUT BREAKBACK



PARTIAL PLAN FOR SLABS WITH BREAKBACK

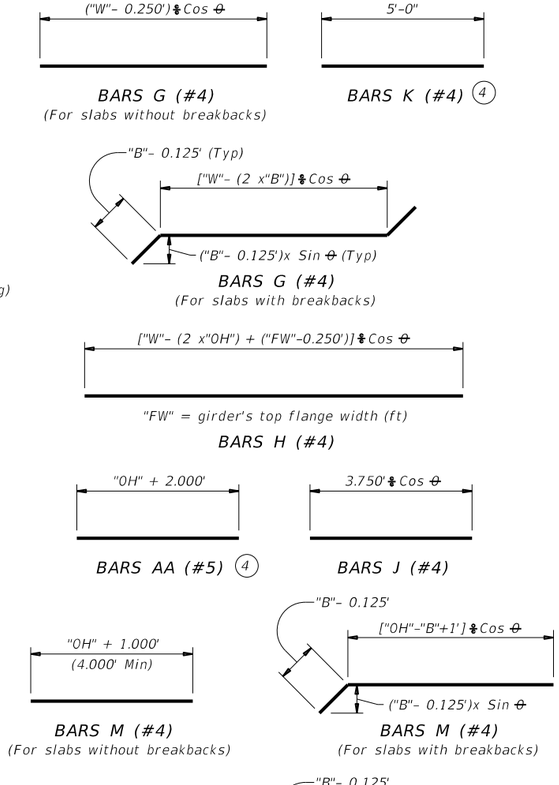
(1) End top transverse reinforcing steel at inside Bar G. End bottom transverse reinforcement steel 1'-0" beyond inside Bar G.

(2) "A"= ("0H" + 2.333' -"B") x Tan θ

(3) Provide clear cover as indicated unless otherwise shown on Span Details.

(4) Only required on slabs with breakbacks.

(5) Thickened slab end dimensioned perpendicular to face of bkwl, centerline interior bent or face of inverted-T stem.



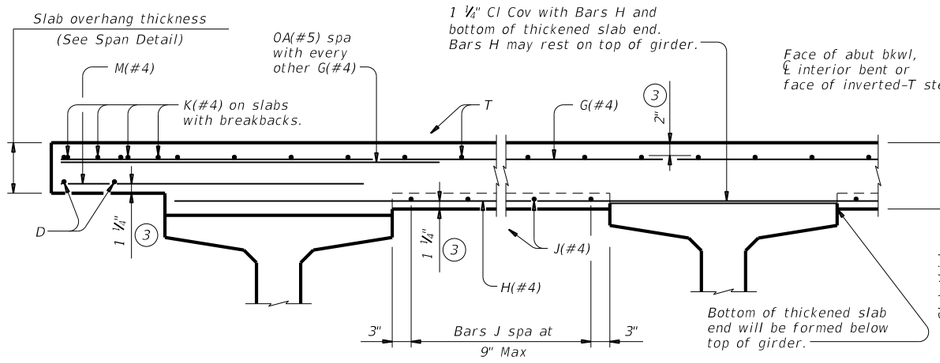
GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
These details are restricted to Prestressed Concrete I-Girder Spans.
These details are to be used in conjunction with the Span Details and PCP standard (if prestressed concrete panels are used).
When Option 2 from PCP standard is used, provide Bars AA, G, K and OA in the slab.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
If slab reinforcing steel is shown on the Slab Details to be epoxy coated, then Bars AA, G, K, H, J, M and OA must be epoxy coated.
Provide bar laps, where required, as follows:
Uncoated ~ #4 = 1'-7"
Epoxy Coated ~ #4 = 2'-5"

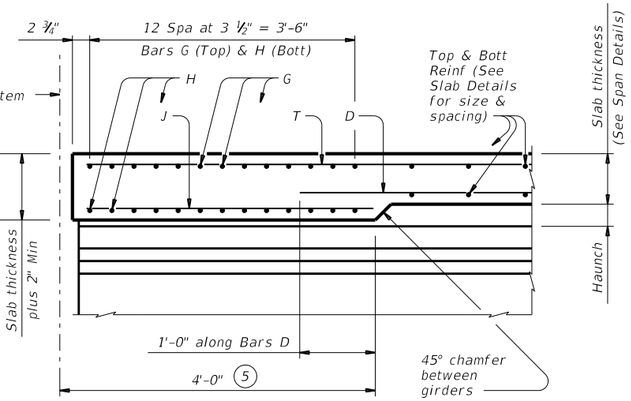
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.



2" AND MORE OF HAUNCH — LESS THAN 2" OF HAUNCH

TYPICAL TRANSVERSE SECTION

(Showing Prestressed Conc I-Girders at ℄ Brg)



SECTION A-A

(Showing with 2" and more of haunch)

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

THICKENED SLAB END DETAILS

PRESTRESSED CONCRETE I-GIRDER SPANS

IGTS

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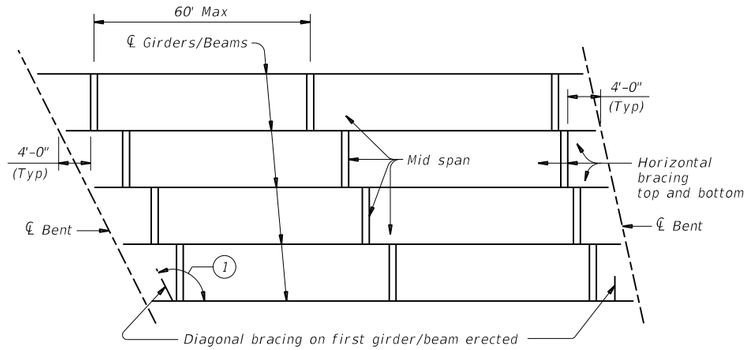
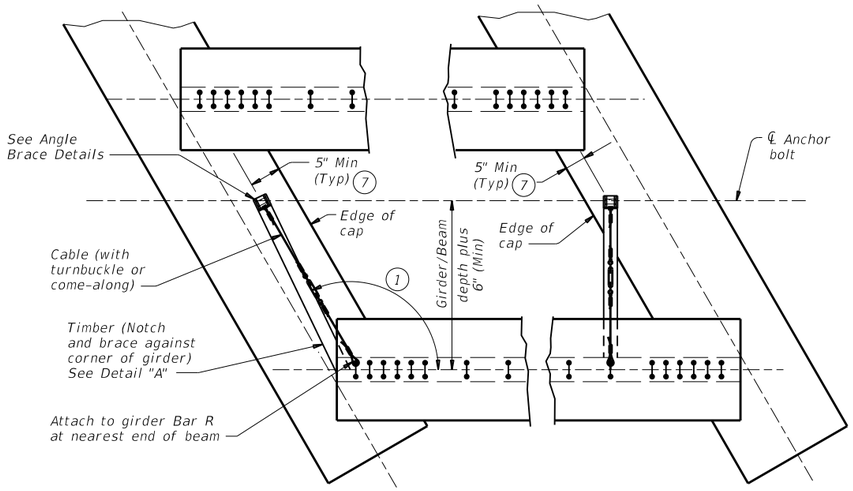
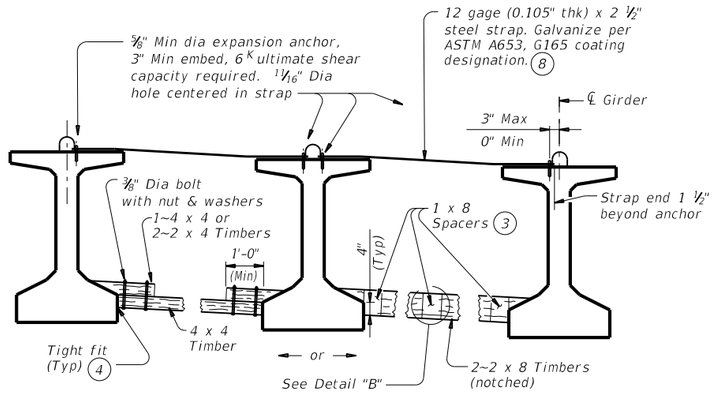


ERECTION BRACING

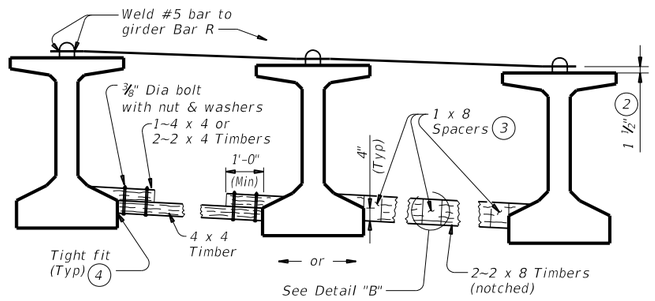


PLAN



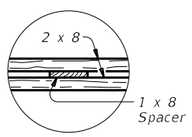
FOR ERECTION BRACING, OPTION 1

(This option is not allowed when slab is formed with PMDF or plywood.)



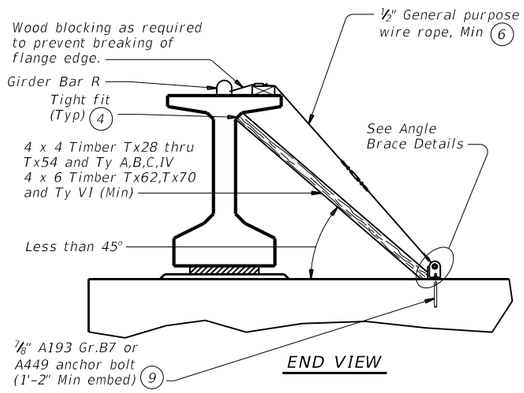
FOR ERECTION BRACING, OPTION 2

HORIZONTAL BRACING DETAILS 5



PLAN

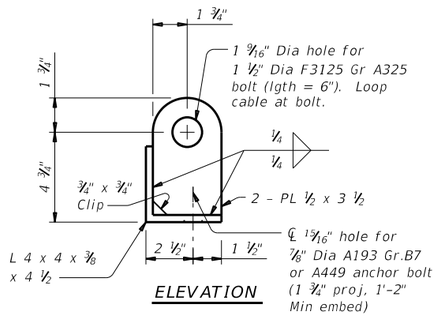
DETAIL "B"



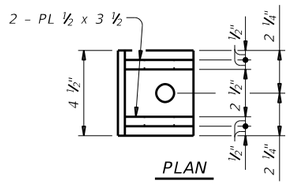
END VIEW

DIAGONAL BRACING DETAILS 5

(To be used on both ends of the first girder/beam erected in the span in each phase.)



ELEVATION



PLAN

ANGLE BRACE DETAILS

HAULING & ERECTION:

The Contractor's attention is directed to the possible lateral instability of prestressed concrete girders and beams over 130' long, especially during hauling and erection. The use of the following methods to improve stability is encouraged: Locate lifting devices at the maximum practical distance from girder ends; use external lateral stiffening devices during hauling and erection; lift with vertical lines using two machines; and take care in handling to minimize inertial and impact forces.

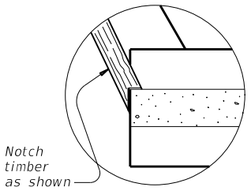
ERECTION BRACING:

Erection bracing details shown are considered the minimum for fulfilling the bracing requirements of Item 425.

Required erection bracing must be placed immediately after erection of each girder and remain in place until additional bracing as required for slab placement is in place. This standard is needed in all cases to meet requirements for Slab Placement Bracing.

PHASED CONSTRUCTION:

Place erection and slab placement bracing for all girders in a phase as shown in these details. For phases after first, also place erection and slab placement bracing between outer girder of completed phase and adjacent girder of current phase. When the phase construction joint is between girders, top bracing can be omitted.



DETAIL "A"

(1) If angle shown exceeds 120 degrees, move diagonal brace to other side of girder/beam and place square to girder/beam. This may prevent exterior girder from being erected first.

(2) Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to girder Bars R (See Sheet 2 of 2).

(3) Clear distance between spacers must not exceed 3'. Nail together with 16d nails.

(4) Use wedges as necessary to obtain tight fit. Nail wedges to timbers.

(5) Pressure treated landscape timbers can not be used.

(6) All hardware used with cable must be able to develop a minimum 25 kips breaking strength. Use thimbles at all loops in cable. Install cable clamps with saddles bearing against the live end and U-bolts bearing aginst the dead end.

(7) It is acceptable to tie anchor bolts to cap reinforcement.

(8) Prior to installing, field bend strap to lay flush on both girders' top flange and slope between flange tips.

(9) Anchor bolt may be drilled and epoxied in place. Provide 25k minimum pullout. Core drill hole.

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

MINIMUM ERECTION AND BRACING REQUIREMENTS

PRESTRESSED CONCRETE I-GIRDERS AND I-BEAMS

MEBR(C)

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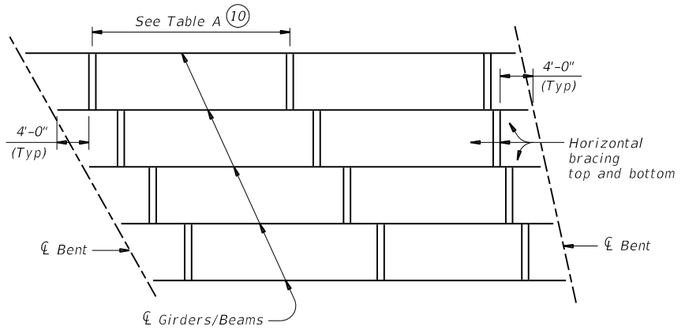


SLAB PLACEMENT BRACING

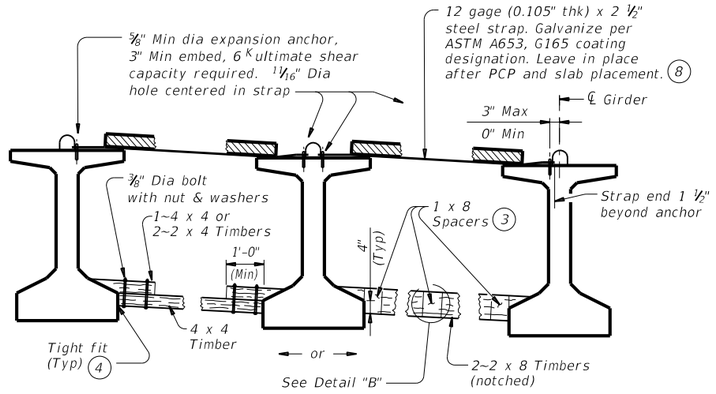
TABLE A

OPTION 1-RIGID BRACING (STEEL STRAP)

Girder or Beam Type	Maximum Bracing Spacing	
	Slab Overhang less than 4'-0" (11)	Slab Overhang 4'-0" and greater (11)
Tx28	¼ points	¼ points
Tx34	¼ points	¼ points
Tx40	¼ points	⅛ points
Tx46	¼ points	⅛ points
Tx54	¼ points	⅛ points
Tx62	¼ points	⅛ points
Tx70	¼ points	⅛ points
A	⅛ points	⅛ points
B	⅛ points	⅛ points
C	⅛ points	⅛ points
IV	¼ points	⅛ points
VI	¼ points	⅛ points

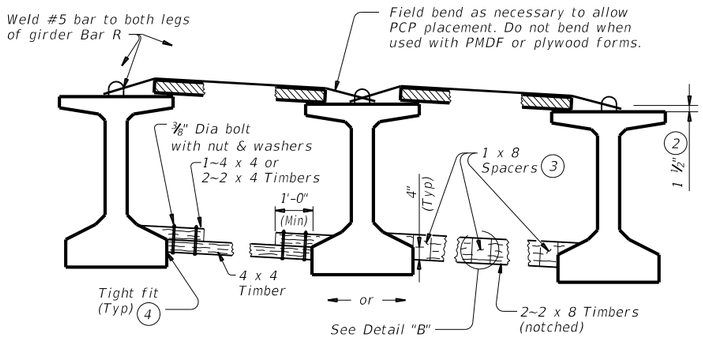
OPTION 2-FLEXIBLE BRACING (NO. 5 OVER PCP)

Girder or Beam Type	Maximum Bracing Spacing	
	Slab Overhang less than 4'-0" (11)	Slab Overhang 4'-0" and greater (11)
Tx28	¼ points	⅛ points
Tx34	¼ points	⅛ points
Tx40	¼ points	⅛ points
Tx46	¼ points	⅛ points
Tx54	¼ points	⅛ points
Tx62	¼ points	⅛ points
Tx70	¼ points	⅛ points
A	2.0 ft	1.5 ft
B	3.0 ft	2.0 ft
C	4.5 ft	2.0 ft
IV	¼ points	4.0 ft
VI	¼ points	4.0 ft



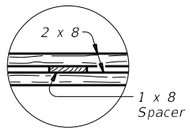
FOR SLAB PLACEMENT BRACING, OPTION 1 - RIGID

(Showing slab formed with PCP. This option is not allowed when slab is formed with PMDF or plywood.)



FOR SLAB PLACEMENT BRACING, OPTION 2 - FLEXIBLE

(Showing slab formed with PCP.)



PLAN

DETAIL "B"

HORIZONTAL BRACING DETAILS (5)

(2) Place and weld #5 bars as shown during erection. If forming deck with prestressed panels, bars can be temporarily removed, one at a time, during panel erection. Re-install bar prior to additional panel erection. Bars can rest on panels and be bent down and welded to girder Bars R.

(3) Clear distance between spacers must not exceed 3'. Nail together with 16d nails.

(4) Use wedges as necessary to obtain tight fit. Nail wedges to timbers.

(5) Pressure treated landscape timbers can not be used.

(8) Prior to installing, field bend strap to lay flush on both girders' top flange and slope between flange tips.

(10) Bracing spacing (¼ and ⅛ points) measured between first and last typical brace location.

(11) Measure slab overhang from centerline of girder or beam. When overhang varies in span, determine bracing spacing based on largest overhang.

SLAB PLACEMENT BRACING:

The details for slab placement bracing are considered minimum for fulfilling the requirements of Specification Items 422 and 425.

Required slab placement bracing must remain in place until slab concrete has attained a compressive strength of 3000 psi.

GENERAL NOTES:

Bracing details for spans longer than 150' are not provided. The Contractor must submit proposed bracing details for such conditions to the Engineer for approval prior to erection.

Systems equal to or better than those shown may be used provided details of such systems are submitted to and approved by the Engineer prior to erection.

Use of these systems or details does not relieve the Contractor of the responsibility for the adequacy of the bracing and the safety of the structure.

Removal of bracing for short periods of time to align girders and beams is permissible.

All turn-buckles, come-alongs, anchors and other connections must be capable of developing the full strength of the cable shown.

Furnish anchor bolts and nuts in accordance with Item 449, "Anchor Bolts".

Texas Department of Transportation — Bridge Division Standard

MINIMUM ERECTION AND BRACING REQUIREMENTS
PRESTRESSED CONCRETE I-GIRDERS AND I-BEAMS

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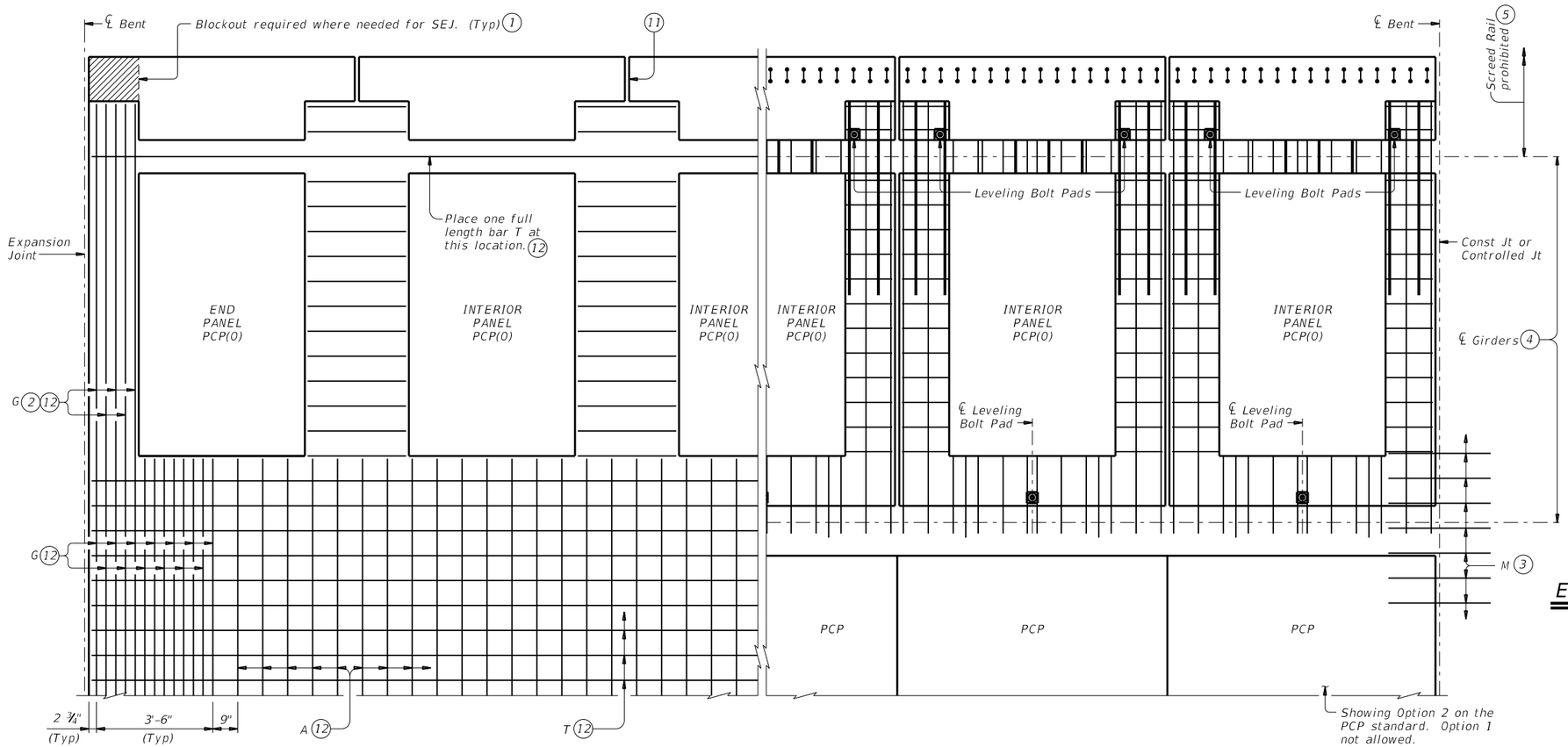


SHOWING FIELD PLACEMENT OF TOP REINFORCING STEEL

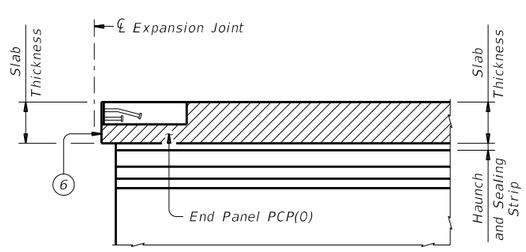
SHOWING PCP(O) EXPOSED REINFORCING STEEL

Field placed bars M shown for clarity.

PANEL LAYOUT

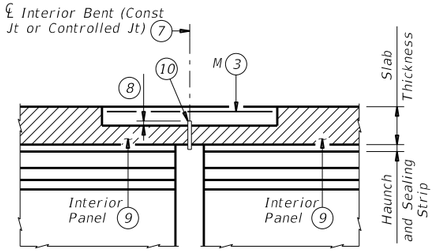
PCP(O) shown with gaps between panels for clarity.
The gap cannot be considered as a panel fabrication tolerance.

1. 1'-4" x 1'-6" x 4 ½" blockout to accommodate SEJ that require an upturn. Contractor to communicate with fabricator the location and type of SEJ to be utilized.
2. When blockout is required, extend bars G into blockout.
3. Place additional bars M 2'-11" in length on top of bars A and between every bar T. Center bars M at center of bent. Located at bents with construction joints or controlled joints only. Bars M may replace additional (#4) bars 5'-0" in length as shown on PCP standard in Option 2 ~ Elevations At Beam Ends. Option 1 not allowed.
4. It is recommended to profile every 4 ft by surveying each girder under PCP(O) for proper grading of panels.
5. Screed rail used to set grade for paving machine is not allowed past exterior girder as shown.
6. Place end panel PCP(O) within ½" of expansion joint opening. Do not encroach on required expansion joint opening.
7. Top Plastic Joint Former at Controlled Joints (Stress Cap, Zip Strip, Stress Lock, etc.) is not required with these Details.
8. 0" Min, ¾" Max, support as necessary.
9. Place panel within ½" of ¾" thick board.
10. ¾" thick wood/timber board, leave in place. Place straight, within ¼" of Centerline of Bent, across bridge width and end board at exterior flange edge of fascia girders. Do not extend into overhang.
11. Seal top of panel only, with a Class 4 sealant prior to rail construction. Typical between panels. Do not seal at Expansion Joints.
12. 1 ½" End Cover. (Typ)



EXPANSION JOINT

For SEJ-A, SEJ-S(0), AJ and Type A Expansion Joints only.

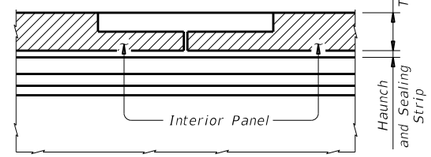


CONST JT OR CONTROLLED JT

Panel against Panel between Bms/Girders.

ELEVATIONS AT GIRDER ENDS WITH PCP(O)

Reinforcing steel not shown for clarity.



ELEVATION BETWEEN PCP(O)

The gap cannot be considered as a panel fabrication tolerance.
Reinforcing steel not shown for clarity.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation — Bridge Division

PRECAST CONCRETE PANELS FOR OVERHANGS

PCP(O)

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BAR TABLE		
BAR	SIZE	MAX SPA (IN)
A (12)(17)	#4	9"
G (12)(17)	#4	3½"
M	#4	9"
T (12)(17)	#4	9"

(4) It is recommended to profile every 4 ft by surveying each girder under PCP(0) for proper grading of panels.

(5) Screed rail used to set grade for paving machine is not allowed past exterior girder as shown.

(12) 1 ½" End Cover on bars. (Typ)

(13) Space bars UP(#4) with girder bars R(#4) in all areas where measured haunch exceeds 3 ½" with Prestressed Concrete I-Girders. Epoxy coating for Bars UP is not required.

(14) 6" plus or minus.

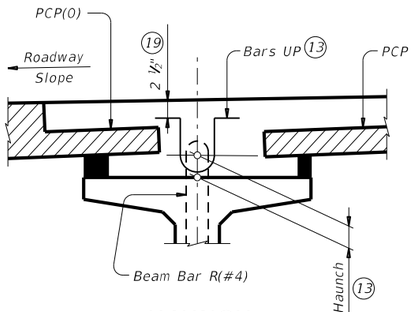
(15) Place sealing strip at flange edge as shown. Butt adjacent sealing strips longitudinally together with adhesive. Use pencil vibrators with concrete placement over girder and between sealing strips to avoid rupturing sealing strips. Cut sealing strips 2" higher than anticipated haunch thickness and compress to grade.

(16) (#3) Panel bars F must be field bent and welded to the R bars in girder. Two bars F per panel.

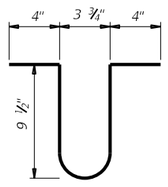
(17) Field placed bars that are allowed to be lapped. Reinforcing steel that protrudes from panels are not considered bars to be lapped. See "Material Notes" for applicable bar laps.

(18) ℄ Leveling Bolt Pad. 1" Dia Coil Rod or 1" Dia Coil Bolt shown, are furnished by the contractor. After grading each PCP(0) panel with the 1" Dia coil rods or coil bolts, secure each panel in its final resting position (plastic shims, welding, etc) and remove all 1" Dia coil rods or coil bolts for the cast-in-place concrete. Coil rods/bolts may be left in place at contractor's option. If coil rods/bolts are left in place, coil rods/bolts must have at least 2 ½" of cover to top of finish grade. Grading bolts are inadequate to carry all conceivable screed/construction loads. Panel support method must be calculated, location identified, and placed on shop drawings. Method chosen to support panels must be adequate for all construction loads. Panel support method must be placed/constructed after final grading and before screed rail placement.

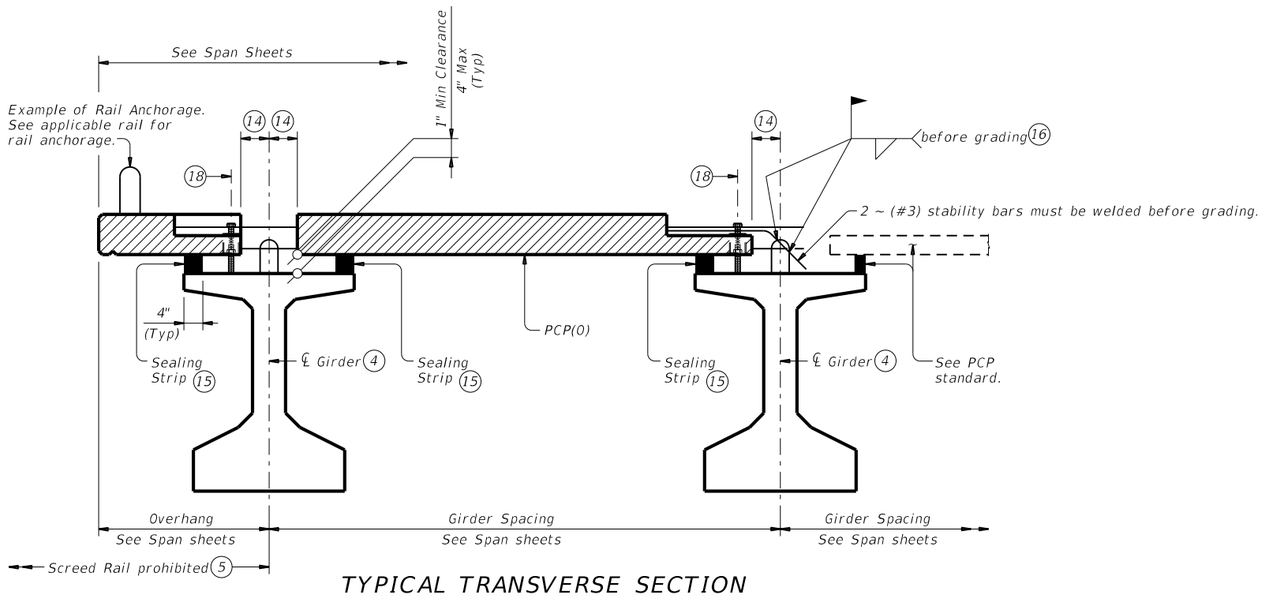
(19) Unless shown otherwise on Span Details.



HAUNCH REINFORCING DETAIL (4)



BARS UP (#4) (13)



TYPICAL TRANSVERSE SECTION

(Showing Girder Type Tx46)

CONSTRUCTION NOTES:

Placing panels adjacent to expansion joints and bent centerlines prior to completing interior panel placement is recommended.

Ensure proper cleaning of construction debris and consolidation of concrete mortar under the edges of the panels. Place sealing strips at girder flange edges so that adequate space is provided for the mortar to flow a minimum of 8" transversely under the panels as the slab concrete is placed.

Panel placement with Option 1 on the PCP standard is not allowed.

It is recommended to profile every 4 ft by surveying each girder under PCP(0) for proper grading of panels.

To allow the proper amount of mortar to flow between girder and panel, maintain a minimum vertical opening of 1". Roadway cross-slope reduces the opening available for entry of the mortar. Sealing strips vary in thickness along girder are therefore required.

Seal the top panel with a Class 4 sealant as shown in the Panel Layout.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel in cast-in-place slab. See Table of Reinforcing Steel for size and spacing of reinforcement.

If the reinforcing steel is shown on the Span Details to be epoxy coated, then epoxy coat bars A, G, M, & T.

Provide bar laps, where required, as follows:

Uncoated ~ #4 = 1'-7"
Epoxy Coated ~ #4 = 2'-5"

Provide sealing strips comprised of one layer low density polyurethane (1.0 Lbs density) foam sealing strips or equivalent. Oversize the height of sealing strips by 2". Bond sealing strips to the girder with 3M Scotch ® 4693 or equivalent adhesive compatible with sealing strips.

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

These details can be used as an option to construct the deck overhang when noted on the Span details and in conjunction with the PCP(0)-FAB, PCP and applicable Standard sheets.

These details are only applicable for Prestr Conc I-Girders.

Any additional reinforcement or concrete required on these details is subsidiary to the bid Item "Reinforced Concrete Slab".

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation | Bridge Division

PRECAST CONCRETE PANELS FOR OVERHANGS

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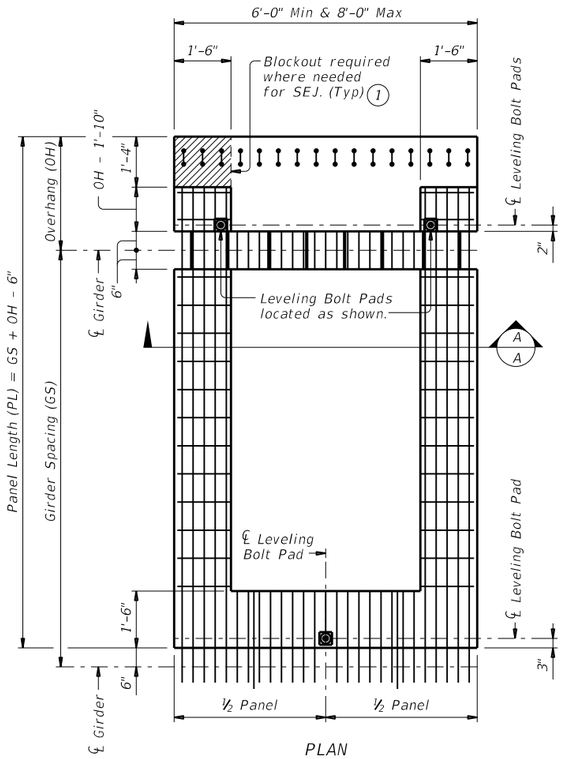
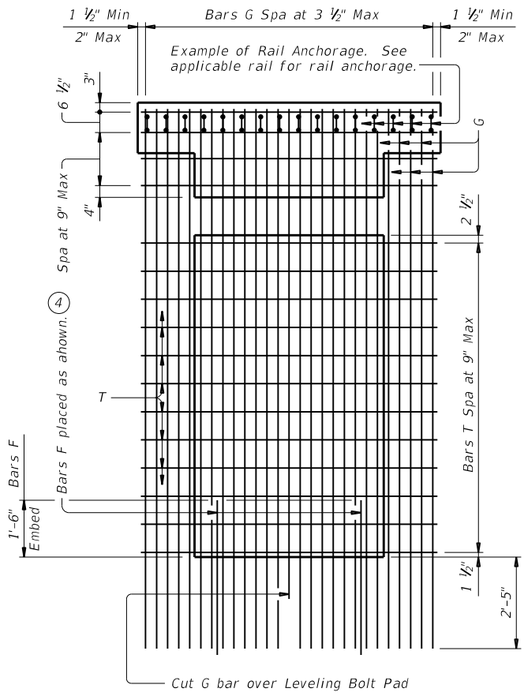
HCTX & GO Underground L L C
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

BAR TABLE	
BAR	SIZE
A (2)	#4
B (2)	#4
D (2) (3)	#4
F (3)	#3
G (2)	#4
H (2)	#4
K (2) (3)	#8
T (2) (3)	#4

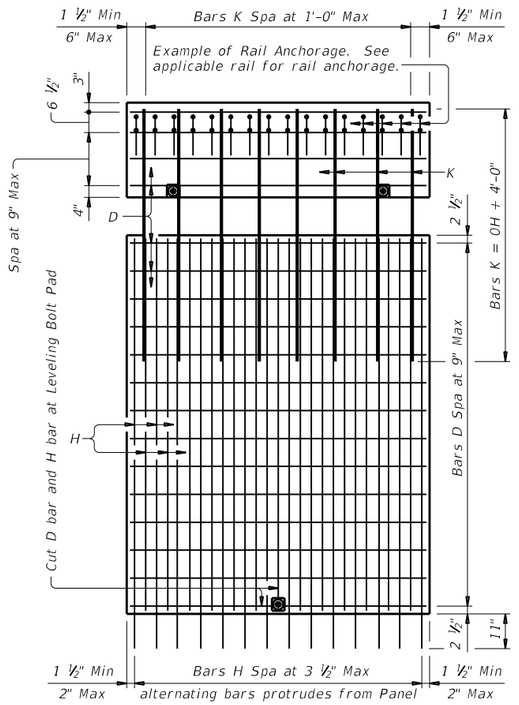


PLAN



TOP REINFORCING STEEL

END PANEL



BOTTOM REINFORCING STEEL

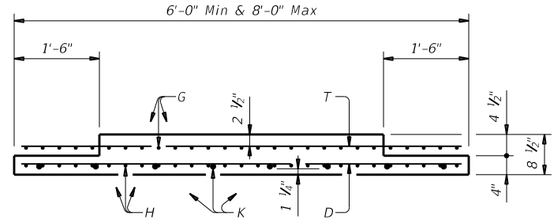
(1) 1'-4" x 1'-6" x 4 ½" blockout to accommodate SEJ that require an upturn. Contractor to communicate with fabricator the location and type of SEJ to be utilized.

(2) 1 ½" End Cover on bars. (Typ)

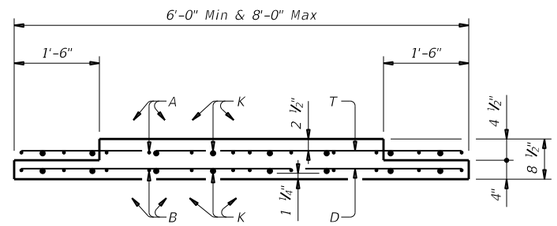
(3) Bars that are not allowed to have lap splices.

(4) Place F bars under bars T and against bars G.

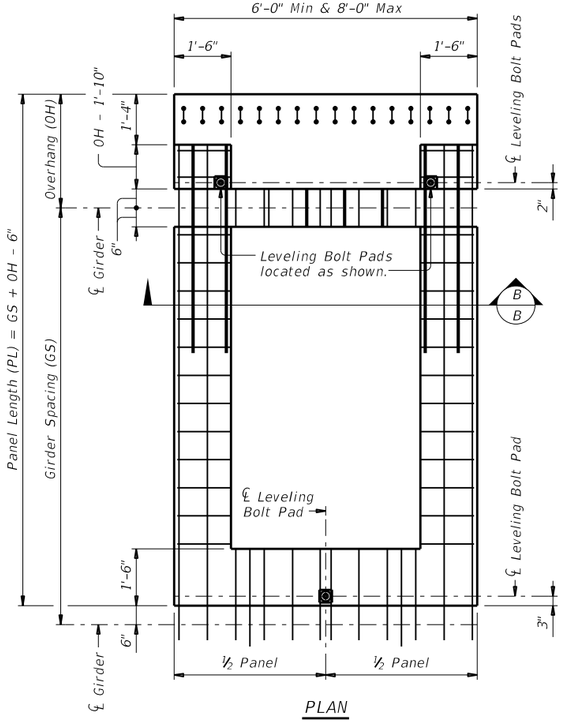
(5) Place F bars under bars T and between bars A.



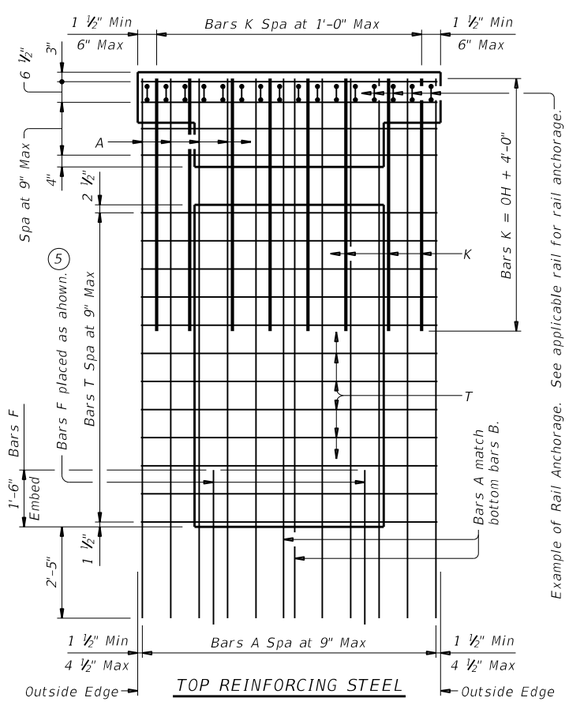
SECTION A-A



SECTION B-B

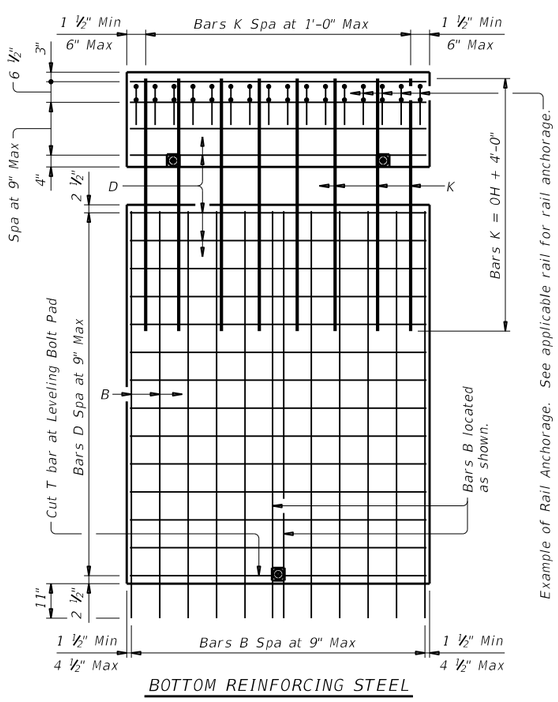


PLAN



TOP REINFORCING STEEL

INTERIOR PANEL



BOTTOM REINFORCING STEEL

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation | Bridge Division

PRECAST CONCRETE PANELS FOR OVERHANGS FABRICATION DETAILS

PCP(O)-FAB

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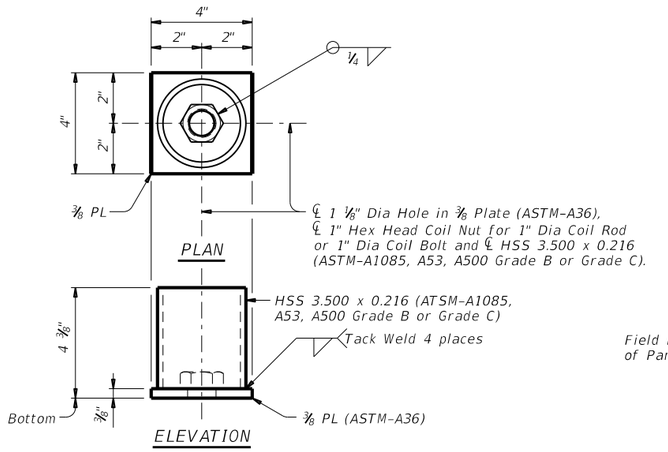
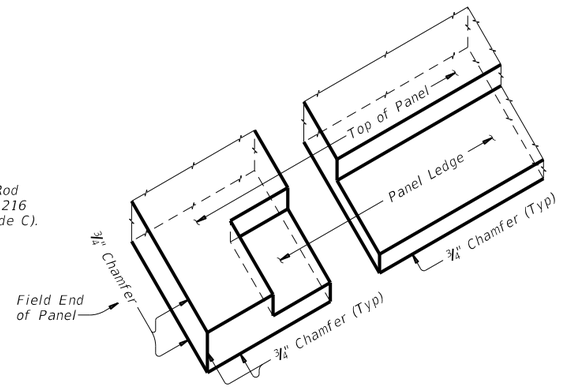


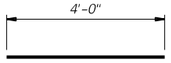
LEVELING BOLT PAD DETAILS

Galvanize if epoxy coated reinforcing steel is used in slab. Do not oil this assembly.

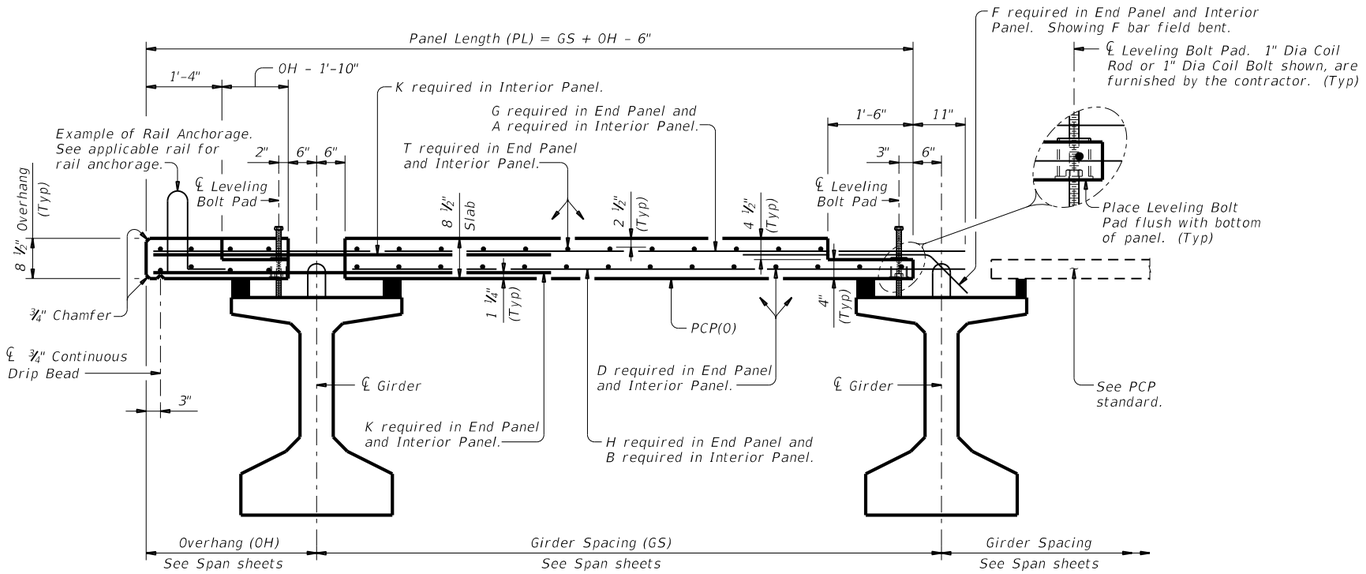


ISOMETRIC VIEW AT CORNER OF PANEL

Showing Typical Chamfers on Panel. Drip Bead and reinforcing steel not shown for clarity.



BARS F



TYPICAL TRANSVERSE SECTION

(Showing Girder Type Tx46)

CONSTRUCTION/FABRICATION NOTES:

Remove laitance from top panel surface.

Finish top surface area of panel with a broom finish. Finish top ledge of panel to a roughness between a No. 6 and No. 9 concrete surface profile, inclusive, as specified by the International Concrete Repair Institute (ICRI).

Provide ¾" concrete chamfers as shown on these details.

Do not lap splice bars D, F, K & T. Bars A, B, G & H, may be spliced with only one lap splice allowed on each bar.

Panels must be fabricated by a fabricator meeting the requirements of DMS 7300 for Multi-Project Nonstressed Member Fabrication Plant.

MATERIAL NOTES:

Provide Class H concrete (f'c=4000 psi) in panels. Provide Class H (HPC) concrete for panels if required elsewhere in plans. Maximum large aggregate size is 1".

Provide material as shown on this standard for the Leveling Bolt Pad.

Provide Grade 60 conventional reinforcing steel.

Provide epoxy coated reinforcement for bars A, B, D, G, H, K & T if slab reinforcement is epoxy coated.

An equal area and spacing of deformed Welded Wire Reinforcement (WWR) ASTM-A1064 may be substituted for bars A, B, D, G, H & T, unless otherwise noted. Bars F and K can not be replaced with WWR.

Galvanize leveling bolt pad assembly if epoxy-coated reinforcing steel is used in slab.

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

These details are only applicable for Prestr Conc I-Girders.

Any additional reinforcement, lifting devices or epoxy coated reinforcement required on these details are subsidiary to the bid Item "Reinforced Concrete Slab".

See railing details for rail anchorage in panel overhang.

A panel layout which identifies location of each panel must be developed by the fabricator. Permanently mark each panel in accordance with the panel layout. A copy of the layout is to be provided to the Engineer.

Submit stable lifting methods and devices to the Engineer for approval.

Shop drawings for the fabrication of panels will require the Engineer's approval.

Cover dimensions are clear dimensions, unless noted otherwise.

Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

SHEET 2 OF 2

Texas Department of Transportation

Bridge Division

PRECAST CONCRETE PANELS FOR OVERHANGS FABRICATION DETAILS

PCP(O)-FAB

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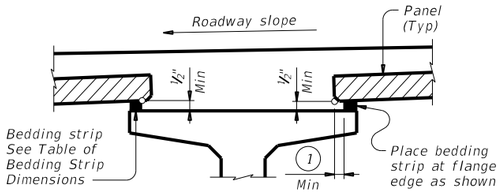
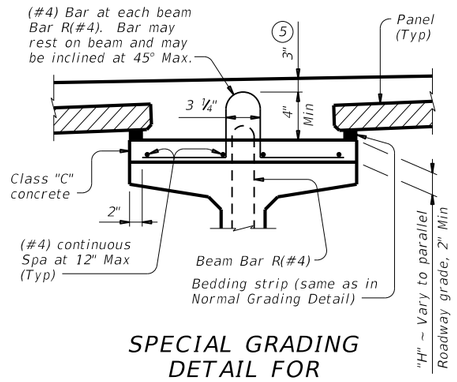


NORMAL GRADING DETAIL (3)

Showing prestressed concrete I-girders.
(Other beam types similar)



SPECIAL GRADING DETAIL FOR CONCRETE BEAMS

Showing prestressed concrete I-girders.
(Other beam types similar)

TABLE OF BEDDING STRIP DIMENSIONS		
WIDTH	HEIGHT (4)	
	Min	Max
1" (Min)	½"	2"
1 ¼"	½"	2 ½"
1 ½"	½"	3"
1 ¾"	½"	3 ½"
2"	½"	4"
2 ¼"	½"	4 ½" (2)
2 ½"	½"	5" (2)
2 ¾"	½"	5 ½" (2)
3" (Max)	½"	6" (2)

(1) 2" Min for I-giders, 1 ½" Min for all other beam types.

(2) Allowed for I-girders, not allowed on other beam types.

(3) To reduce the quantity of cast-in-place concrete, bedding strip thickness may be increased in ¼" increments. Bedding strips must be comprised of one layer. Bond bedding strips to the beams with an adhesive compatible with bedding strips. Bedding strips over 2.5" high may need to be bonded to panels. The same thickness strip must be used under any one panel edge and the maximum change in thickness between adjacent panels is ¼". Alternatively, bedding strips may be cut to grade. Panels may be supported by an alternate method, using a commercial product, if approved by the Engineer of Bridge Design, Bridge Division. If bedding strips exceed 6" high for I-Girders, 4" high for all other beam types, use Special Grading Detail for Concrete Beams or submit an alternate method to the Bridge Division for approval.

(4) Height must not exceed twice the width.

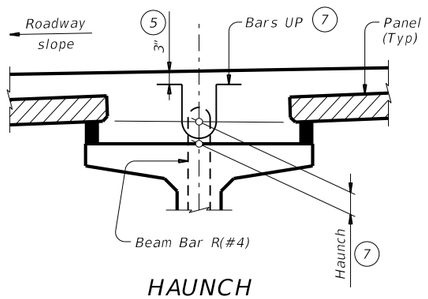
(5) Provide clear cover as indicated unless otherwise shown on Span Details.

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(7) Space Bars UP(#4) with Beam Bars R(#4) in all areas where measured haunch exceeds 3 ½" with I-girders, and 3" for all other beam types. Epoxy coating for Bars UP is not required.

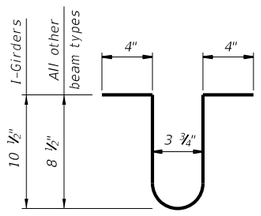
(8) Do not locate construction joints on top of a panel.

(9) Butt adjacent bedding strips together with adhesive. Cut v-notches, approx ¼" deep, in the top of the bedding strips at 8' o.c..

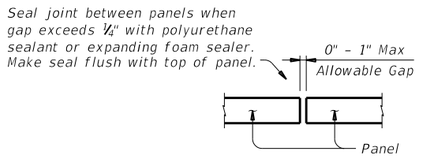


HAUNCH REINFORCING DETAIL

Showing prestressed concrete I-girders.
(Other beam types similar)

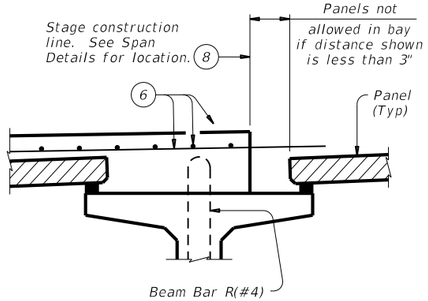


BARS UP (#4) (7)

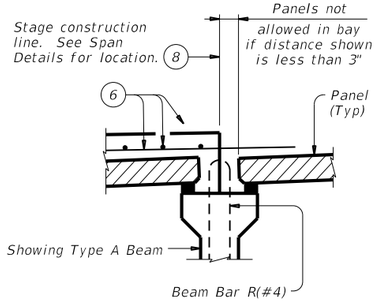


PANEL JOINTS

(Panel reinforcing not shown for clarity.
The gap cannot be considered as a panel fabrication tolerance. Adjust panel placement to minimize joint openings.)



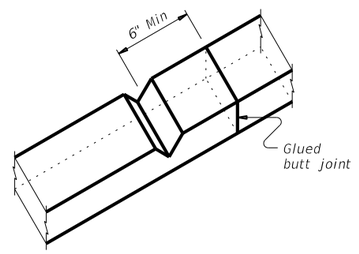
PRESTR CONC I-GIRDERS



PRESTR CONC I-BEAMS

STAGE CONSTRUCTION LIMITATIONS

(Other beam types similar)



BEDDING STRIP DETAIL (9)

CONSTRUCTION NOTES:

Erected panels must bear uniformly on bedding strips of extruded polystyrene placed along top flange edges.

Placing panels to minimize joint openings is recommended.

If additional blocking is needed, special grading details for supporting the panels and extra reinforcing between beam and slab will be considered subsidiary to deck construction.

Bars U, shown on PCP-FAB, may be bent over or cut off if necessary.

Care must be taken to ensure proper cleaning of construction debris and consolidation of concrete material under the edges of the panels. Bedding strips must be placed at beam flange edges so that adequate space is provided for the mortar to flow a minimum of 1 ½" under the panels as the slab concrete is placed.

To allow the proper amount of mortar to flow between beam and panel, the minimum vertical opening must be at least ½". Roadway cross-slope reduces the opening available for entry of the mortar. Bedding strips varying in thickness across the beam are therefore required.

For clear span between U-beams less than or equal to 18", see Permissible Slab Forming Detail on Miscellaneous Slab Detail sheets, UBMS.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel in the cast-in-place slab. See Table of Reinforcing Steel for size and spacing of reinforcement.

If the top and bottom layer of reinforcing steel is shown on the Span Details to be epoxy coated, then the D, E, P, & Z bars must be epoxy coated.

Provide bar Laps, where required, as follows:

Uncoated ~ #4 = 1'-7"
Epoxy Coated ~ #4 = 2'-5"

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.

Panel placement may follow either Option 1 or Option 2 except Option 1 must be used if the skew exceeds 45 degrees.

Use of Prestressed Concrete Panels is not permitted for horizontally curved steel plate or tub girders. See Span Details for other possible restrictions on their use.

These details are to be used in conjunction with the Span Details, PCP-FAB and other applicable standard drawings.

When panel support (bedding strips) deviates from what is shown herein, provide details signed and sealed by a professional Engineer.

Any additional reinforcement or concrete required on this standard is considered subsidiary to the bid Item "Reinforced Concrete Slab".

Cover dimensions are clear dimensions, unless noted otherwise.

Reinforcing bar dimensions shown are out-to-out of bar.

HL93 LOADING

SHEET 1 OF 4

Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE PANELS DECK DETAILS

PCP

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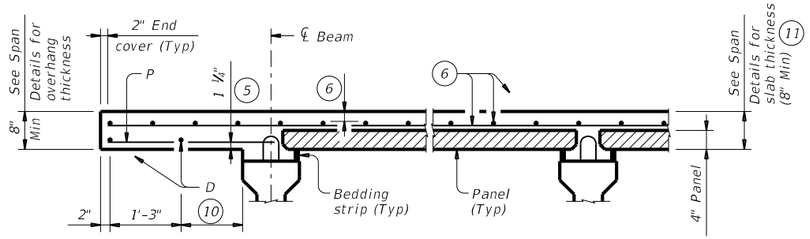
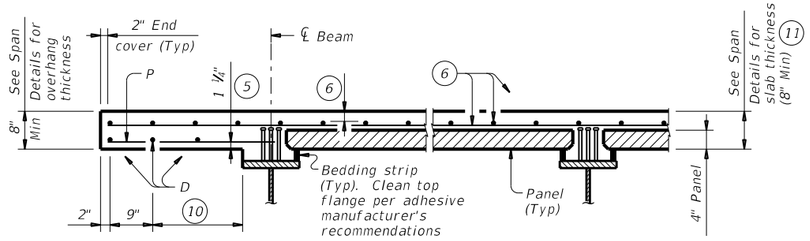
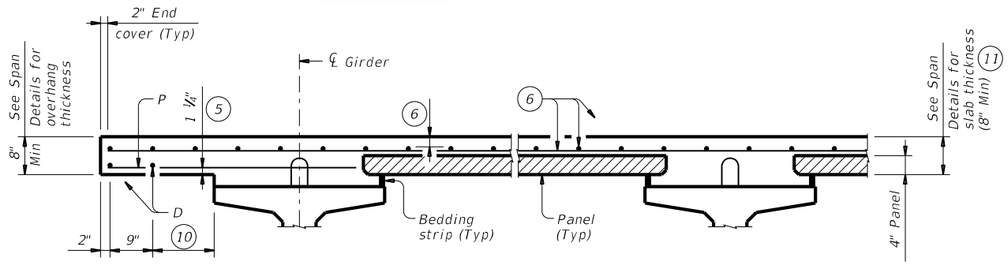


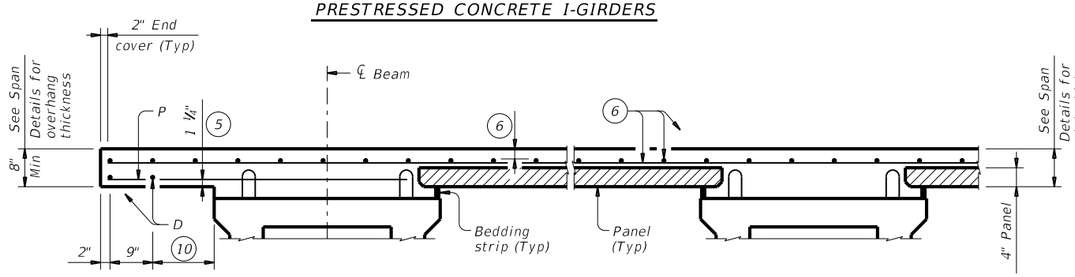
PRESTRESSED CONCRETE I-BEAMS



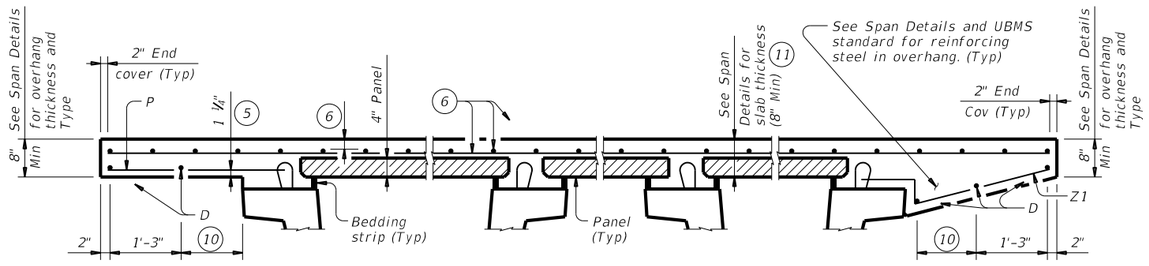
STEEL BEAMS



PRESTRESSED CONCRETE I-GIRDERS



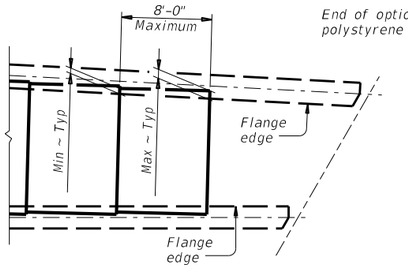
PRESTRESSED CONCRETE X-BEAMS



NORMAL OVERHANG WITH PRESTR CONC U-BEAMS

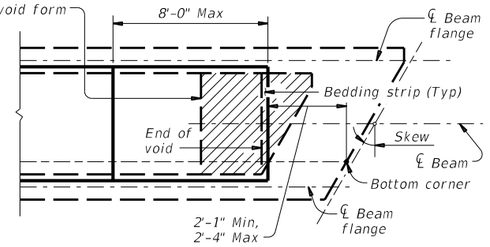
SLOPED OVERHANG WITH PRESTR CONC U-BEAMS

TYPICAL PART TRANSVERSE SECTIONS

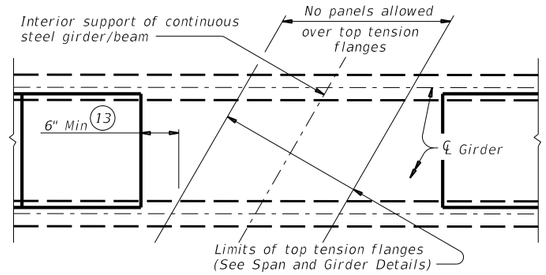


AT FLARED BEAMS OR GIRDERS

See PCP-FAB standard for Min and Max dimensions based on bemm/girder type.



OVER CONC U-BEAMS



AT INT SUPPORTS OF CONTINUOUS STEEL GIRDERS

PART PLANS OF PANEL PLACEMENT

(5) Provide clear cover as indicated unless otherwise shown on Span Details.

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

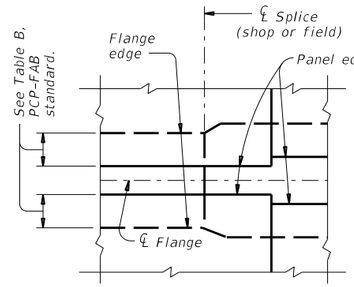
(9) Butt adjacent bedding strips together with adhesive. Cut v-notches, approx ¼" deep, in the top of the bedding strips at 8' o.c..

(10) Equally space additional bar if more than 1'-3" Max.

(11) The actual thickness constructed may exceed the slab thickness shown on the Span Details but the extra thickness may be no more than 2" (1" for prestressed concrete U-beams and steel beams). Bearing seat elevations or finished grade may be adjusted.

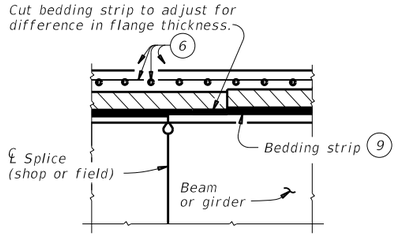
(12) Field adjust Bars Z1(#4) to match actual slope of slab overhangs. Width of slab overhang will vary along span with curved slab edges. Adjust Bar Z1(#4) dimensions to maintain proper cover. Bars Z2(#4) are located at Inverted-Tee stems only.

(13) Location of concrete placement sequence boundaries and bolted field splices should be considered by the contractor in determining panel limits.



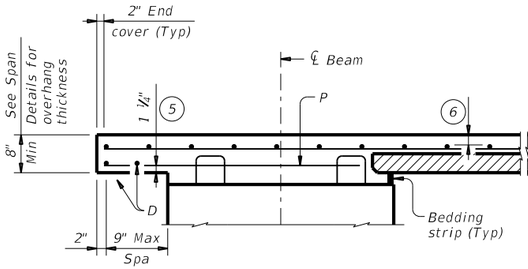
PLAN AT SPLICE

(Showing steel beams with flange width transition)



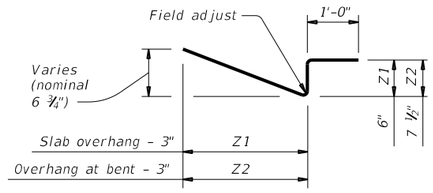
ELEVATION AT SPLICE

(Showing steel beams with different flange thickness)



PRESTRESSED CONCRETE SPREAD SLAB BEAMS

Bars P over exterior beams are still required when no overhang is used. In this case, only one Bar D, 2" from slab edge, is required.



BARS Z (#4) (12)

HL93 LOADING SHEET 2 OF 4

Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE PANELS
DECK DETAILS

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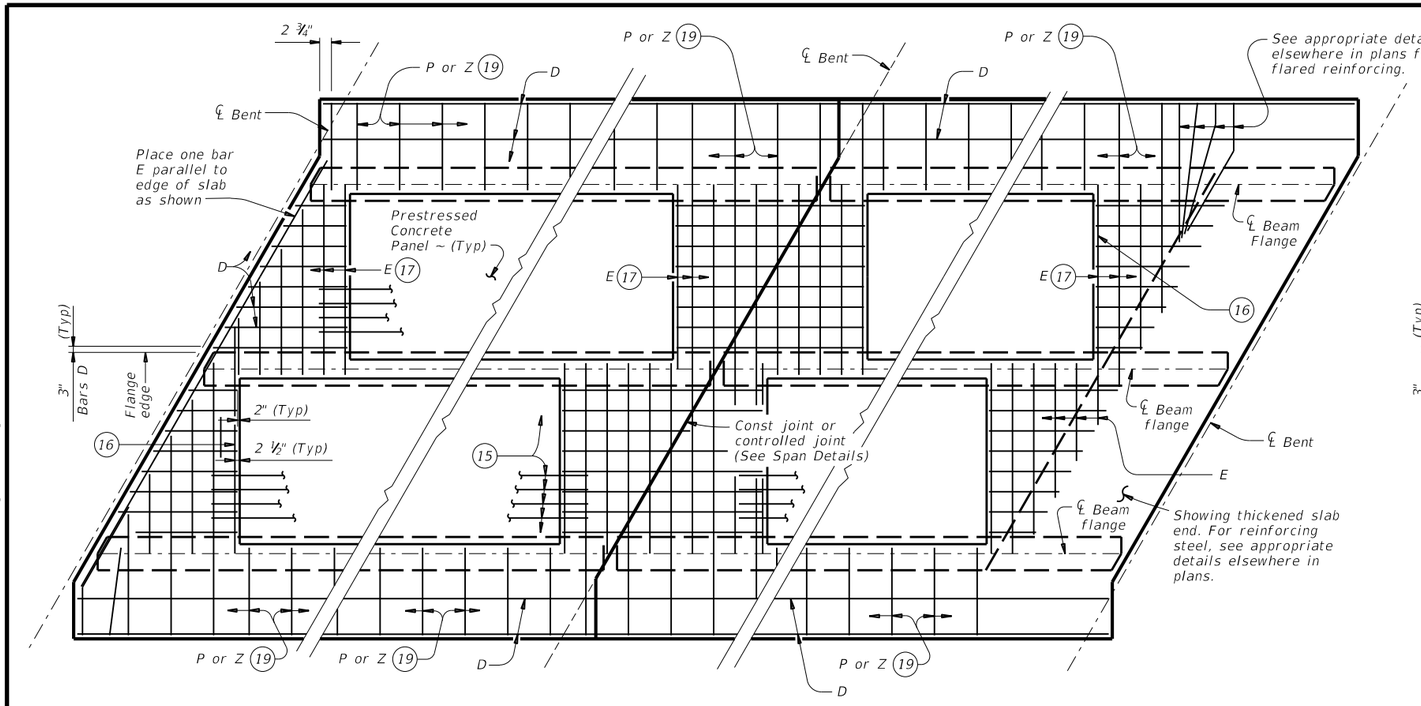
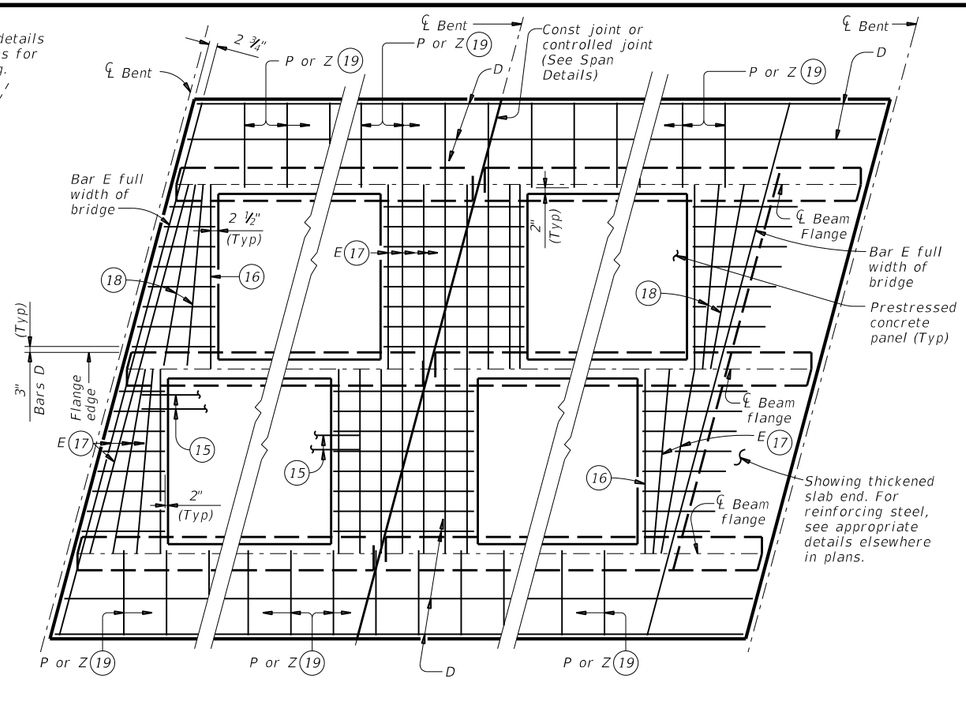


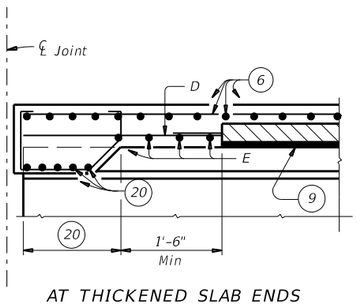
AT ALL SPAN ENDS UNLESS NOTED OTHERWISE | AT INTERIOR BENTS | AT THICKENED END SLABS

OPTION 1 ~ PLAN OF SLABS WITH NORMAL REINFORCEMENT

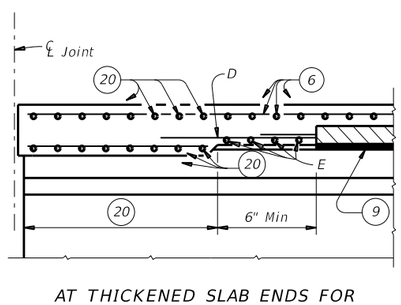


AT ALL SPAN ENDS UNLESS NOTED OTHERWISE | AT INTERIOR BENTS | AT THICKENED END SLABS

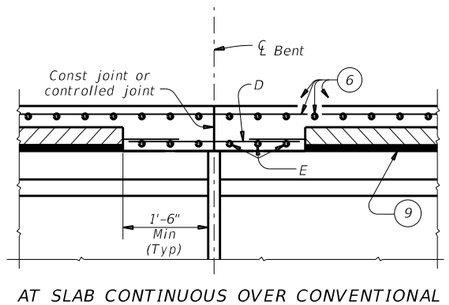
OPTION 1 ~ PLAN OF SLABS WITH SKEWED REINFORCEMENT



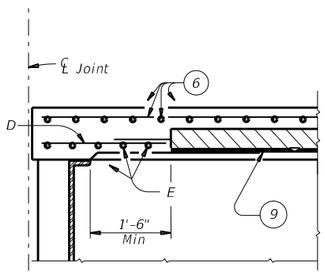
AT THICKENED SLAB ENDS FOR PRESTR CONC U-BMS



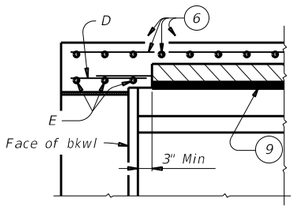
AT THICKENED SLAB ENDS FOR PRESTR CONC I-BMS AND STEEL BMS



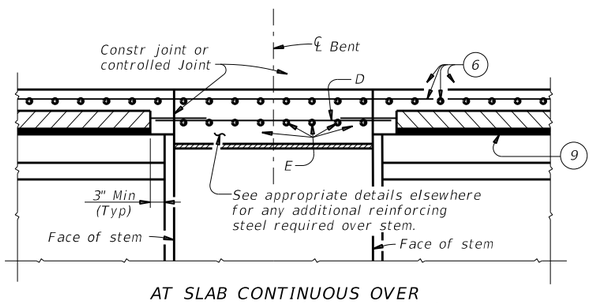
AT SLAB CONTINUOUS OVER CONVENTIONAL INTERIOR BENTS FOR ALL SIMPLE SPAN BMS



AT CONVENTIONAL END DIAPHRAGMS FOR STEEL BMS



AT SLAB OVER ABUTMENT BACKWALL FOR ALL BMS



AT SLAB CONTINUOUS OVER INVERTED-T BENTS FOR ALL BMS

OPTION 1 ~ ELEVATIONS AT BEAM ENDS

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(9) Butt adjacent bedding strips together with adhesive. Cut v-notches, approx ¼" deep, in the top of the bedding strips at 8' o.c.

(14) Max Spacing as listed unless otherwise shown.

(15) At connection with cast-in-place slab, extend longitudinal panel reinforcement. See PCP-FAB for details.

(16) Maintain one Bar E(#4) parallel to panel ends (Typ).

(17) Bars E(#4) not continuous over beam flanges must overlap beam flange 6" Min.

(18) Add flared Bars E(#4) (Min Spa = 6", Max Spa = 12") as required at panel ends.

(19) Where possible, Bars E(#4) may be extended into overhangs to replace Bars P(#4). Bars Z(#4) are required for sloped overhangs with U-Beams.

(20) See appropriate thickened slab end details for reinforcing and limits of thickened slab end.

TABLE OF REINFORCING STEEL (14)

BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18

HL93 LOADING

SHEET 3 OF 4

Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE PANELS
DECK DETAILS

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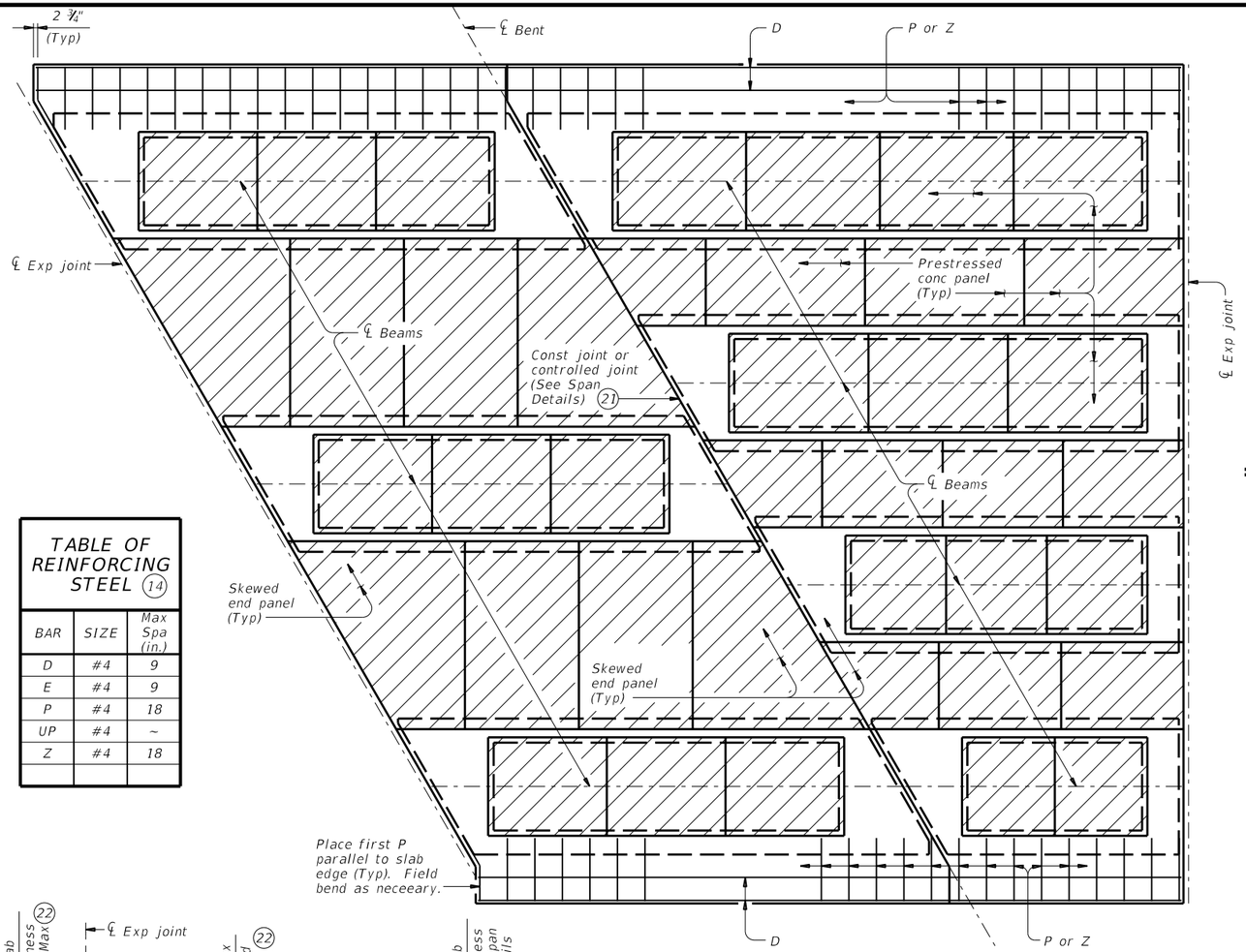
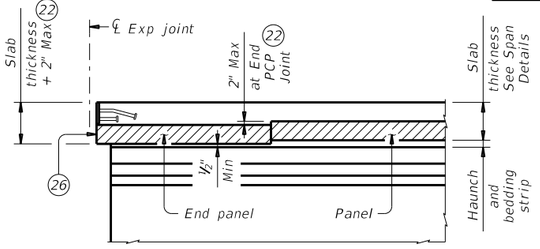


OPTION 2 ~ PLAN OF SLAB

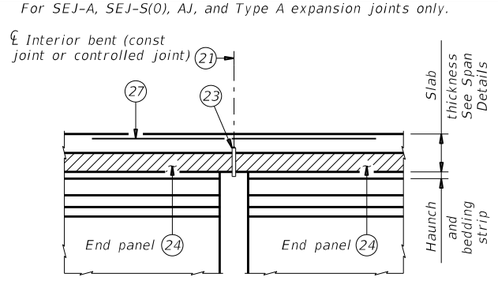
(Showing U-Beams; other beams similar)

TABLE OF REINFORCING STEEL (14)		
BAR	SIZE	Max Spa (in.)
D	#4	9
E	#4	9
P	#4	18
UP	#4	~
Z	#4	18



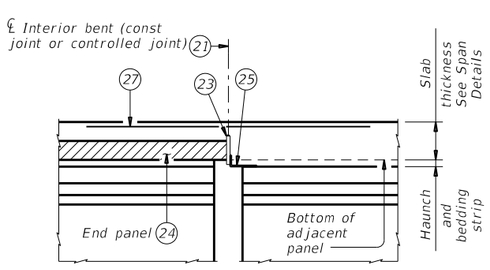
JOINTS (BETWEEN BEAMS/GIRDERS OR AT INV-T STEM)

For SEJ-A, SEJ-S(0), AJ, and Type A expansion joints only.



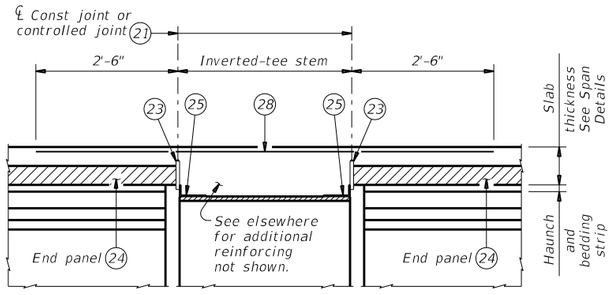
CONVENTIONAL INTERIOR BENT

Panel against panel between beams/girders.



CONVENTIONAL INTERIOR BENT

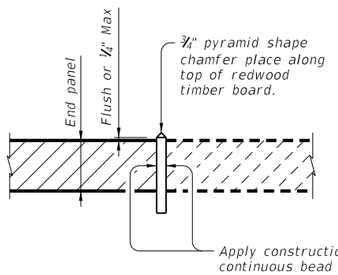
Panel against beam/girder end in adacent span.



INVERTED-T BENT

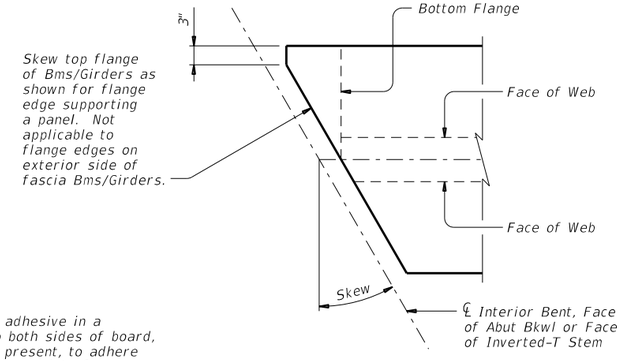
Panels against inverted-tee stem

OPTION 2 ~ ELEVATIONS AT BEAM ENDS (6)



ELEVATION EXAMPLE OF END PANEL AND TIMBER BOARD (23)

See "Option 2 ~ Elevation At Beam Ends".



OPTION 2 ~ SHOWING MODIFICATION TO BEAM/GIRDER TOP FLANGE FOR SKEWS OVER 5°

Showing I-Bm/I-Girder, U-Bms and Steel Bms similar.

(6) See Span Details and Thickened Slab End Details for top slab reinforcement and clear cover. Transverse top slab reinforcement may rest on top of prestressed concrete panels if necessary to maintain clear cover.

(14) Max Spacing as listed unless otherwise shown.

(21) 1 ½" Vinyl or plastic joint former at controlled joints (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.)

(22) End panel may be set up to 2" lower to accommodate expansion joint hardware, provided bedding strip is not less than ½" thick.

(23) ¾" thick redwood timber board, leave in place. Redwood timber board placed flush with top of panel or within ¼" Max above panel. Place ¾" pyramid shape chamfer along top of timber board. See "Elevation Example of End Panel and Timber Board". Place straight, within ¼" of centerline of bent or face of inverted-tee, across bridge width and end board at exterior flange edge of fascia beams/girders. Do not extend into overhang.

(24) Place panel within ½" of ¾" thick board.

(25) Permanent galvanized steel sheet form. Removable formwork is acceptable.

(26) Place end panel within ½" of expansion joint opening. End panel cannot encroach on required expansion joint opening.

(27) Place additional (#4) bar 5'-0" in length between every slab bars T. Center (#4) bar on Joint.

(28) Place additional (#4) bar continuous 2'-6" beyond each side of Inverted-T Stem between every slab bars T.

SPECIAL OPTION 2 CONSTRUCTION NOTES:

When Option 2 is chosen bottom mat of thickened end slab reinforcing is not required. Use the same top mat as shown on the Thickened Slab End Details sheet.

Placing panels adjacent to expansion joints and bent centerlines prior to completing interior panel placement is recommended. Saw cutting panels to fit is acceptable when approved by the Engineer. Minimum distance from a saw cut edge to a panel strand is 1 ½".

Do not extend the longitudinal panel reinforcement into the cast-in-place slab.

Top flanges of beams and girders on skewed bridges must be modified as shown on this drawing. The Contractor is responsible for coordinating this modification with the beam fabricator prior to submitting shop drawings for approval.

Fabricator may optionally skew the whole end. When electing to skew whole end, girder end details and bearing type at conventional interior bent must be changed to use condition at abutment. Fabricator must coordinate change in bearing type, bearing centerline location, and dowel location with Engineer and Contractor. Show appropriate changes on girder and bearing shop drawings.

Bending of anchor studs of expansion joints shown on standards AJ, SEJ-A and SEJ-S(0) is permissible if necessary to clear top of end panels. The Contractor is responsible for coordinating modifications with the joint fabricator. Submit shop drawings for approval when modifications to expansion joint hardware are made.

Bedding strips under skewed end panels must conform to the requirements of Item 422 except their minimum compressive strength must be 60 psi.

Provide Bars AA, G, K and OA from standard IGTS in the slab.

HL93 LOADING SHEET 4 OF 4

Texas Department of Transportation | Bridge Division Standard

PRESTRESSED CONCRETE PANELS DECK DETAILS

PCP

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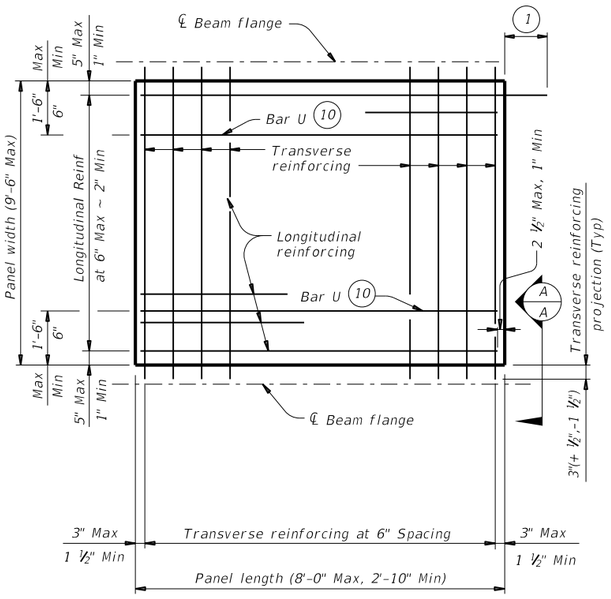
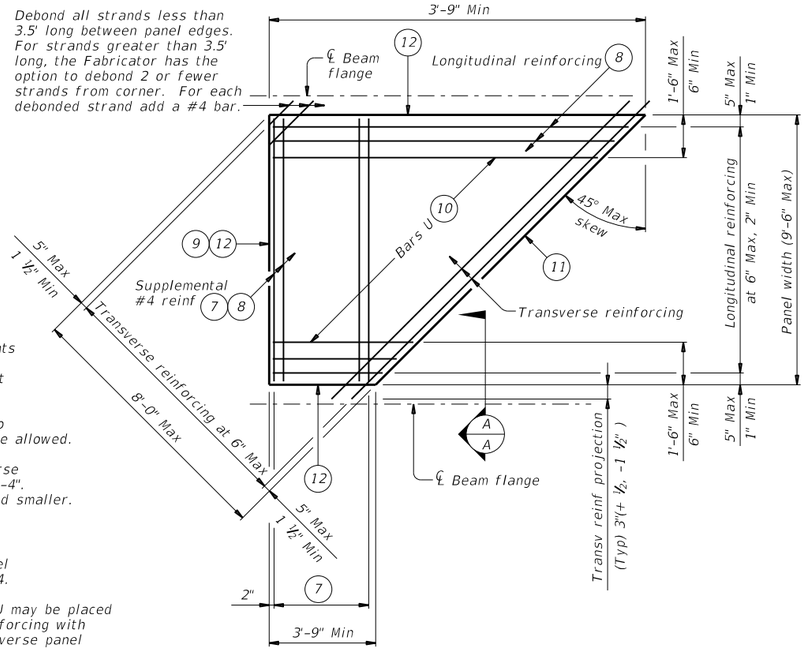


TYPICAL NON-SKEWED PANEL PLAN



TYPICAL SKEWED END PANEL PLAN

(Only to be used with details shown elsewhere in the plans.)

1. At connection with cast-in-place slab, extend longitudinal panel reinforcement 1'-0" (+2",-0") past panel end. Alternatively, provide (#3) x 2'-0" dowels at 6" Max Spacing and extend dowels 1'-0" past panel end.
2. Four loops required per panel.
3. Four loops required per panel. ⅜" or ½" strands may be used.
4. Normal dimensions must be used on spans with parallel beams. Maximum and Minimum dimensions apply only to spans with flared beams.
5. See Normal Grading Detail on PCP standard for lap requirements and bedding strip dimensions. Some laps shown in tables cannot utilize all bedding strip widths.
6. One Splice allowed per panel. No more than two sheets of WWR are allowed.
7. Provide (#4) bars under transverse reinforcing, 10 Spaces at 4" = 3'-4". Omit for 5 degree (1:12) skew and smaller.
8. End Cover 2 ½" Max, 1" Min.
9. Recess strands on indicated panel edge in accordance with Item 424.
10. At the fabricator's option, Bars U may be placed parallel to transverse panel reinforcing with horizontal legs in plane of transverse panel reinforcing.
11. Use length of indicated panel edge as panel width for purpose of determining type of transverse reinforcing.
12. Timber form work permissible this edge.

Debond all strands less than 3.5' long between panel edges. For strands greater than 3.5' long, the Fabricator has the option to debond 2 or fewer strands from corner. For each debonded strand add a #4 bar.

TABLE A (4) (5)			
Beam Type	Normal (In.)	Min (In.)	Max (In.)
A	3	2 ½	3 ½
B	3	2 ½	3 ½
C	4	3	4 ½
IV	6	4	7 ½
VI	6 ½	4 ½"	8 ½
U40 – 54	5 ½	5 ½	7
Tx28-70	6	5	7 ½
XB20 – 40	4	3	4 ½
XSB12 – 15	4	3	4 ½

TABLE B (4) (5)			
Top Flange Width	Normal (In.)	Min (In.)	Max (In.)
11" to 12"	2 ¾	2 ½	2 ¾
Over 12" to 15"	3 ¼	3	3 ¼
Over 15" to 18"	4	3	4 ¾
Over 18"	5	3 ½	6 ¼

GENERAL NOTES:

Provide Class H concrete for panels. Release strength f'ci=3,500 psi. Minimum 28 day strength f'c=5,000 psi.

Provide ¾" chamfer along bottom edge of panel on beam side.

Do not use epoxy-coated reinforcing steel bar or strand in panels.

Remove laitance from top panel surface.

Finish top of panel to a roughness between a No. 6 and No. 9 concrete surface profile, inclusive, as specified by the International Concrete Repair Institute (ICRI).

Shop drawings for the fabrication of panels will not require the Engineer's approval if fabrication is in accordance with the details shown on this standard.

A panel layout which identifies location of each panel must be developed by the Fabricator. Permanently mark each panel in accordance with the panel layout. A copy of the layout is to be provided to the Engineer.

TRANSVERSE PANEL REINFORCEMENT:

For panel widths over 5', use ⅜" or ½" Dia (270k) prestressing strands with a tension of 14.4 kips per strand.

For panel widths over 3'-6" up to and including 5', use ⅜" or ½" Dia (270k) prestressing strands with a tension of 14.4 kip per strand. Optionally, (#4) Grade 60 reinforcing bars may be used in lieu of prestressed strands.

For panel widths up to 3'-6", use (#4) Grade 60 reinforcing bars (prestressed strands alone are not allowed).

Place transverse panel reinforcement at panel centroid and space at 6" Max.

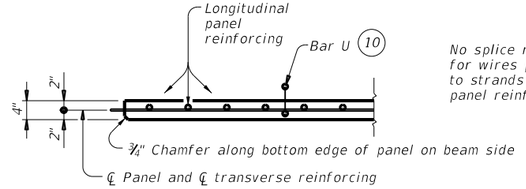
LONGITUDINAL PANEL REINFORCEMENT:

Any of the following options may be used for longitudinal panel reinforcement:

1. (#3) Grade 60 reinforcing steel at 6" Max Spacing. No splices allowed.
2. ⅜" Dia prestressing strands at 4 ½" Max Spacing (unstressed). No splices allowed.
3. ½" Dia prestressing strands at 6" Max Spacing (unstressed). No splices allowed.
4. Deformed Welded Wire Reinforcement (WWR) (ASTM A1064) providing 0.22 sq in per foot of panel width. Wires larger than D11 not permitted. Provide transverse wires to ensure proper handling of reinforcing. One splice per panel is allowed. See WWR Splice Detail.

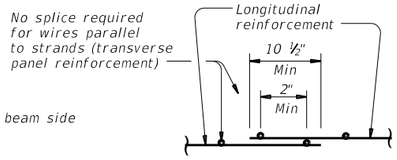
No combination of longitudinal reinforcement options in a panel is allowed.

Place longitudinal panel reinforcement above or below transverse panel reinforcement. Must be placed above transverse panel reinforcement for skewed end panels with supplemental (#4) reinforcement.

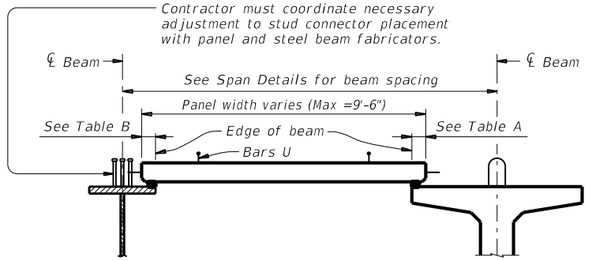


SECTION A-A

(Not showing supplemental #4 bars for skewed end panels.)



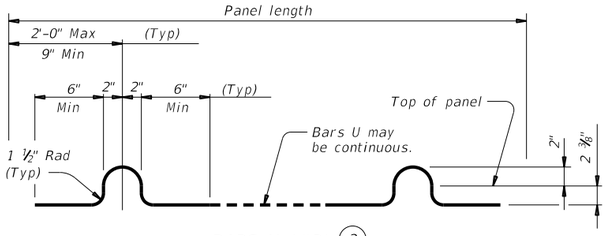
WELDED WIRE REINFORCEMENT (WWR) SPLICE DETAIL (6)



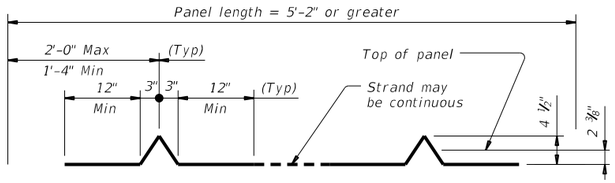
STEEL BEAMS

PRESTRESSED CONCRETE BEAMS OR GIRDERS

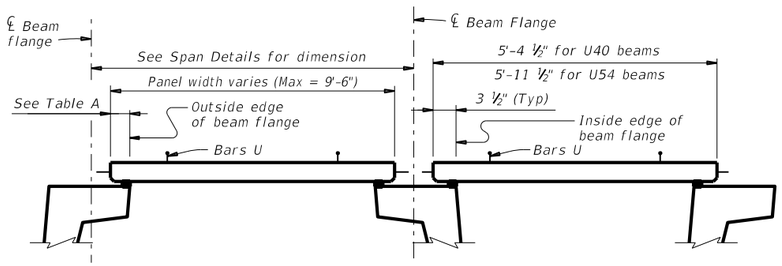
Typ unless noted otherwise



BARS U (#3) (2)



OPTIONAL STRAND FOR BARS U (3)



PRESTRESSED CONCRETE U-BEAMS

TYPICAL SECTIONS FOR DETERMINING PANEL WIDTH

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

PRESTRESSED CONCRETE PANEL FABRICATION DETAILS

PCP-FAB

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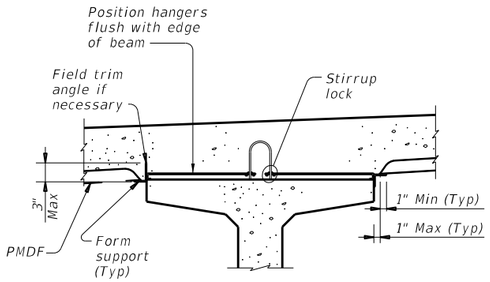
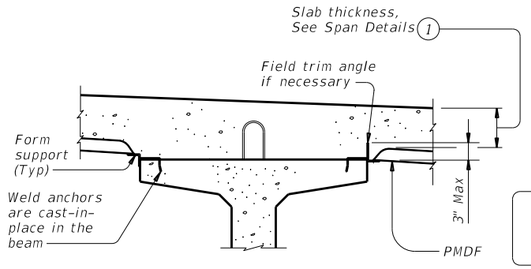
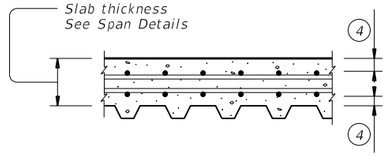


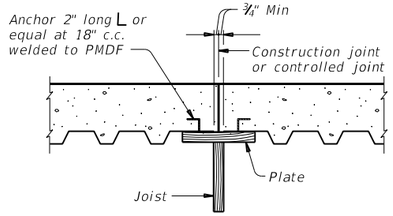
PRESTR CONC I-BEAMS AND I-GIRDERS WITH STIRRUP LOCKS



PRESTR CONC I-BEAMS AND I-GIRDERS WITH WELD ANCHORS

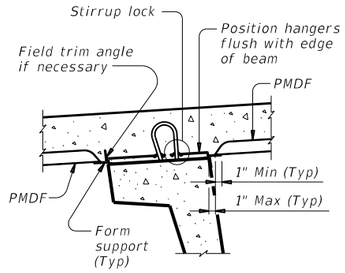


TYP LONGITUDINAL SLAB SECTION

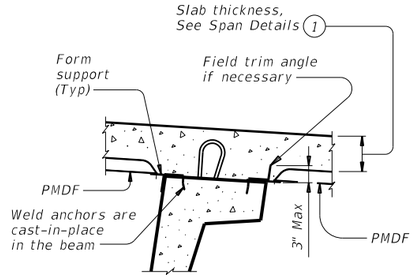


Note: In spans where PMD forms are used, timber forms must be used at construction joints. Adequate provision must be made to support edge of metal form and to provide anchorage of metal form to slab concrete where joined to wood forms.

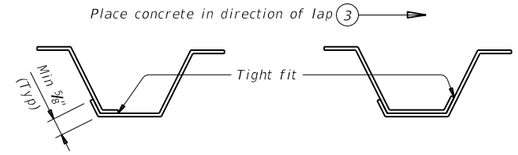
SECTION THRU CONSTRUCTION JOINT



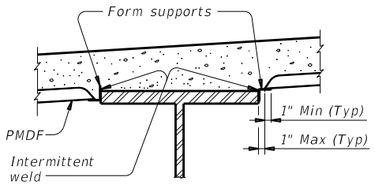
U-BEAMS WITH STIRRUP LOCKS



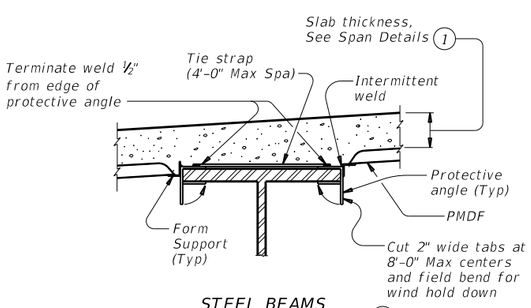
U-BEAMS WITH WELD ANCHORS



SIDE LAP DETAILS

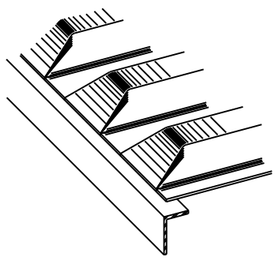


STEEL BEAMS AT COMPRESSION FLANGES



STEEL BEAMS AT TENSION FLANGES (2)

TYPICAL TRANSVERSE SECTIONS



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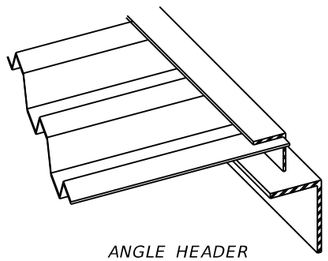

ANGLE HEADER

NOTE: This type is to be used for skewed ends only.

TYPES OF END CLOSURES

1. Slab thickness minus ⅝" if corrugations match reinforcing bars.
2. Welding of form supports to tension flanges will not be permitted. Other methods of providing wind hold down resistance for PMDF in tension flange zones will be considered. At least one layer of sheet metal must be provided between the flange and the weld joint.
3. The direction of concrete placement will be such that the upper layer of the form overlap is loaded first.
4. See Span details for cover requirements.

GENERAL NOTES:

Steel for Permanent Metal Deck Forms (PMDF) and support angles shall conform to ASTM A653, structural steel (SS), with coating designation G165. Steel must have a minimum yield strength of 33 ksi. Minimum thickness of PMDF is 20 gage and that of support angles and protective angles is 12 gage.

Submit two copies of forming plans for PMDF to the Engineer. These plans must show all essential details of proposed form sheets, closures, fasteners, supports, connectors, special conditions and size and location of welds. These plans must clearly show areas of tension flanges for steel beams and provisions for protecting the tension flanges from welding notch effects by inclusion of separating sheet metal or other positive method. These plans must be designed, signed, and sealed by a licensed professional engineer. Department approval of these plans is not required, but the Department reserves the right to require modifications to the plans. The Contractor is responsible for the adequacy of these plans.

The details and notes shown on this standard are to be used as a guide in preparation of the forming plans.

All material, labor, tools and incidentals necessary to form a bridge deck with Permanent Metal Deck Forms is considered subsidiary to Item 422, "Concrete Superstructures".

FOR PRESTR CONC U-BEAM BRIDGES:
Size, spacing, and orientation of bottom mat of slab reinforcement must match the top mat of reinforcing shown on the span details except all bottom mat bars are to be #5.

FOR PRESTR CONC TX-GIRDER BRIDGES:
See Miscellaneous Slab Details, Prestr Concrete I-Girders (IGMS) standard sheet for bottom mat reinforcing.

DESIGN NOTES:

As a minimum, PMDF and support angles must be designed for the dead load of the form, reinforcement and concrete plus 50 psf for construction loads. Flexural stresses due to these design loads must not exceed 75 percent of the yield strength of the steel. Allowable stress for weld metal must be 12,400 psi.

Maximum deflection under the weight of forms, reinforcement and concrete or 120 psf, whichever is greater, shall not exceed the following:

1/180 of the form design span, but not more than 0.50", for design spans of 10' or less.

1/240 of the form design span, but not more than 0.75", for design spans greater than 10'.

The form design span must not be less than the clear distance between beam flanges, measured parallel to the form flutes, minus 2".

CONSTRUCTION NOTES:

Form sheets must not be permitted to rest directly on the top of beam flanges. Form sheets must be securely fastened to form supports and must have a minimum bearing length of one inch at each end. Form supports must be placed in direct contact with beam flanges.

All attachments must be made by permissible welds, screws, bolts, clips or other means shown on the the forming plans. All sheet metal assembly screws must be installed with torque-limiting devices to prevent stripping. Only welds or bolts must be used to support vertical loads.

Welding and welds must be in accordance with the provisions of Item 448, "Structural Field Welding", pertaining to fillet welds. All welds must be made by a qualified welder in accordance with Item 448.

All permanently exposed form metal, where the galvanized coating has been damaged, must be thoroughly cleaned and repaired in accordance with Item 445, "Galvanizing". Minor heat discoloration in areas of welds need not be touched up.

Flutes must line up uniformly across the entire width of the structure where main reinforcing steel is located in the flute.

Construction joints will not be permitted unless shown on the plans. The location of and forming details for any construction joint used must be shown on the forming plans. Forms below a construction joint must be removed after curing of the slab.

A sequence for uniform vibration of concrete must be approved by the Engineer prior to concrete placement. Attention must be given to prevent damage to the forms, yet provide proper vibration to prevent voids or honeycomb in the flutes and at headers and/or construction joints.

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

PERMANENT METAL DECK FORMS

PMDF

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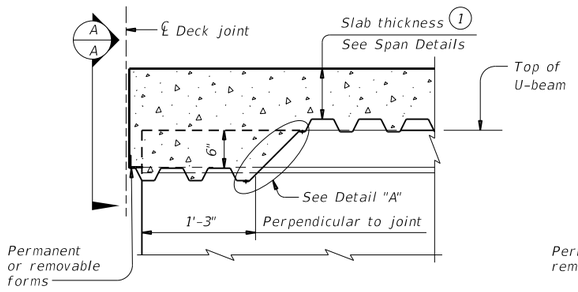
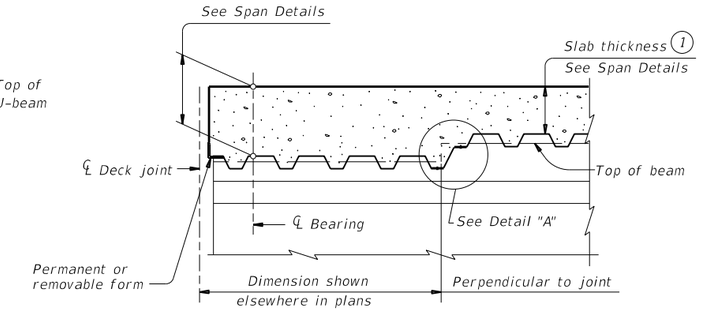
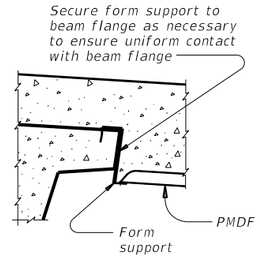


AT THICKENED SLAB END FOR U-BEAMS

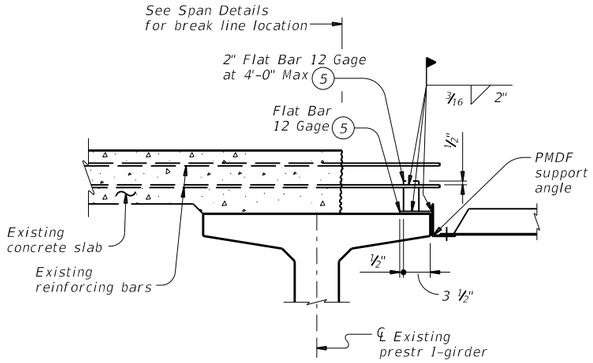


AT THICKENED SLAB END FOR PRESTRESSED I-BEAMS, I-GIRDERS AND STEEL BEAMS

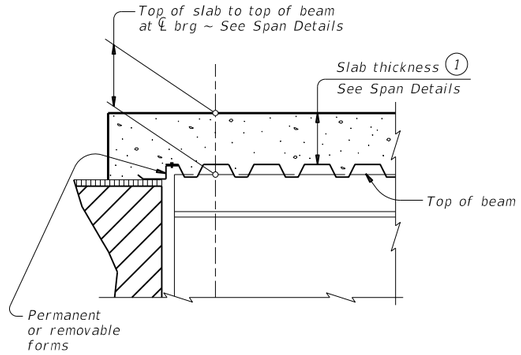
Showing I-beam block-out. No block-out for I-girders or steel beams.



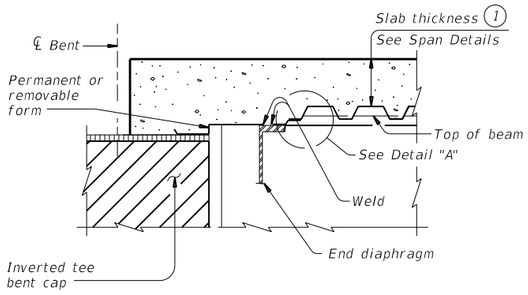
SECTION A-A



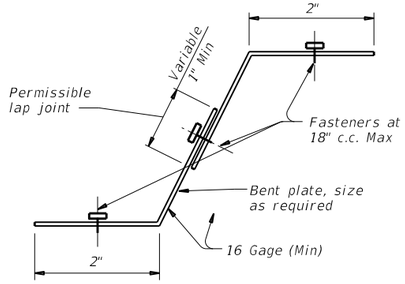
SHOWING PRESTRESSED CONCRETE I-BEAMS, I-GIRDERS AND U-BEAMS



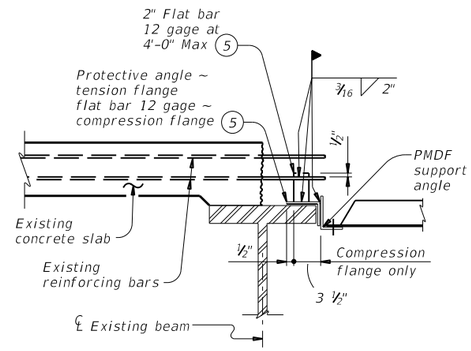
AT SLAB OVER ABUT BKWL OR INV TEE STEM FOR CONC BEAMS WITHOUT THICKENED SLAB END



AT SLAB OVER INV TEE STEM FOR STEEL BEAMS WITHOUT THICKENED SLAB END

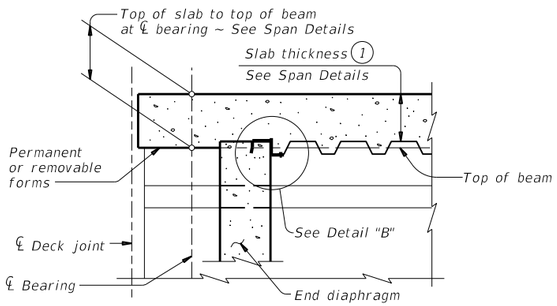


DETAIL "A"

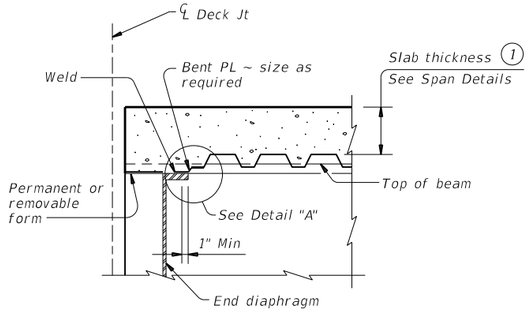


SHOWING STEEL BEAMS

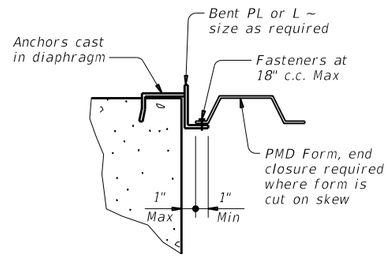
WIDENING DETAILS



AT CONC END DIAPHRAGM FOR PRESTRESSED I-BEAMS AND STEEL BEAMS



AT END DIAPHRAGM FOR STEEL BEAMS WITHOUT THICKENED SLAB END



DETAIL "B"

(1) Slab thickness minus 5/8" if corrugations match reinforcing bars

(5) Minimum yield stress of 12 gage bars shall be 40 ksi

DETAILS AT ENDS OF BEAMS

SHEET 2 OF 2

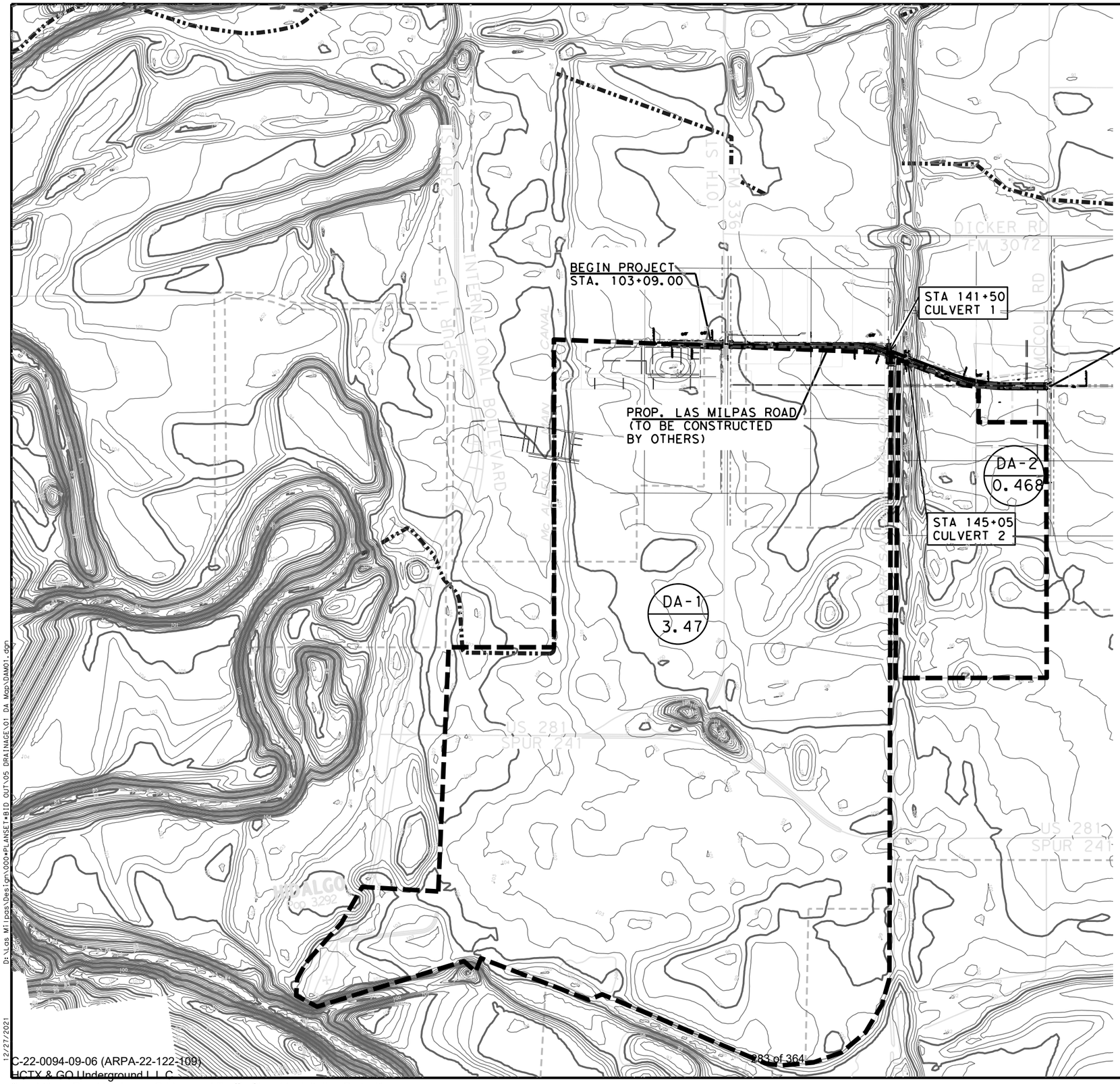
Texas Department of Transportation

Bridge Division Standard

PERMANENT METAL DECK FORMS

PMDF

FILE: pmdfste1-19.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				LAS MILPAS
	DIST	COUNTY		SHEET NO.
				98



LEGEND

DA-XX / 0.00	DESIGNATION OF DRAINAGE AREA AREA IN SQUARE MILES
	DRAINAGE AREA BOUNDRARY
XX	DRAINAGE STRUCTURE ID
	EXISTING FLOW DIRECTION
	EXISTING DRAINAGE CANAL
	PROPOSED CENTERLINE

NOTE:
CULVERT HYDROLOGY FOR DA-1 PROVIDED BY L&G ENGINEERING "HYDROLOGY & HYDROLOGIC REPORT FOR SH 365 (SEGMENT1) HIDALGO COUNTY (TEXAS). SEE CULVERT LAYOUTS FOR DETAILS.

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
OLIVER F. SALGADO, P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS DRAINAGE AREA MAP

SCALE: 1"= 1800'

SHEET 1 OF 2

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					99
DW:		STATE DIST. NO.	COUNTY	SECTION	JOB NO.			HIGHWAY NO.
CK DW:		PHR	HIDALGO					MILPAS
TR:								
CK TR:								

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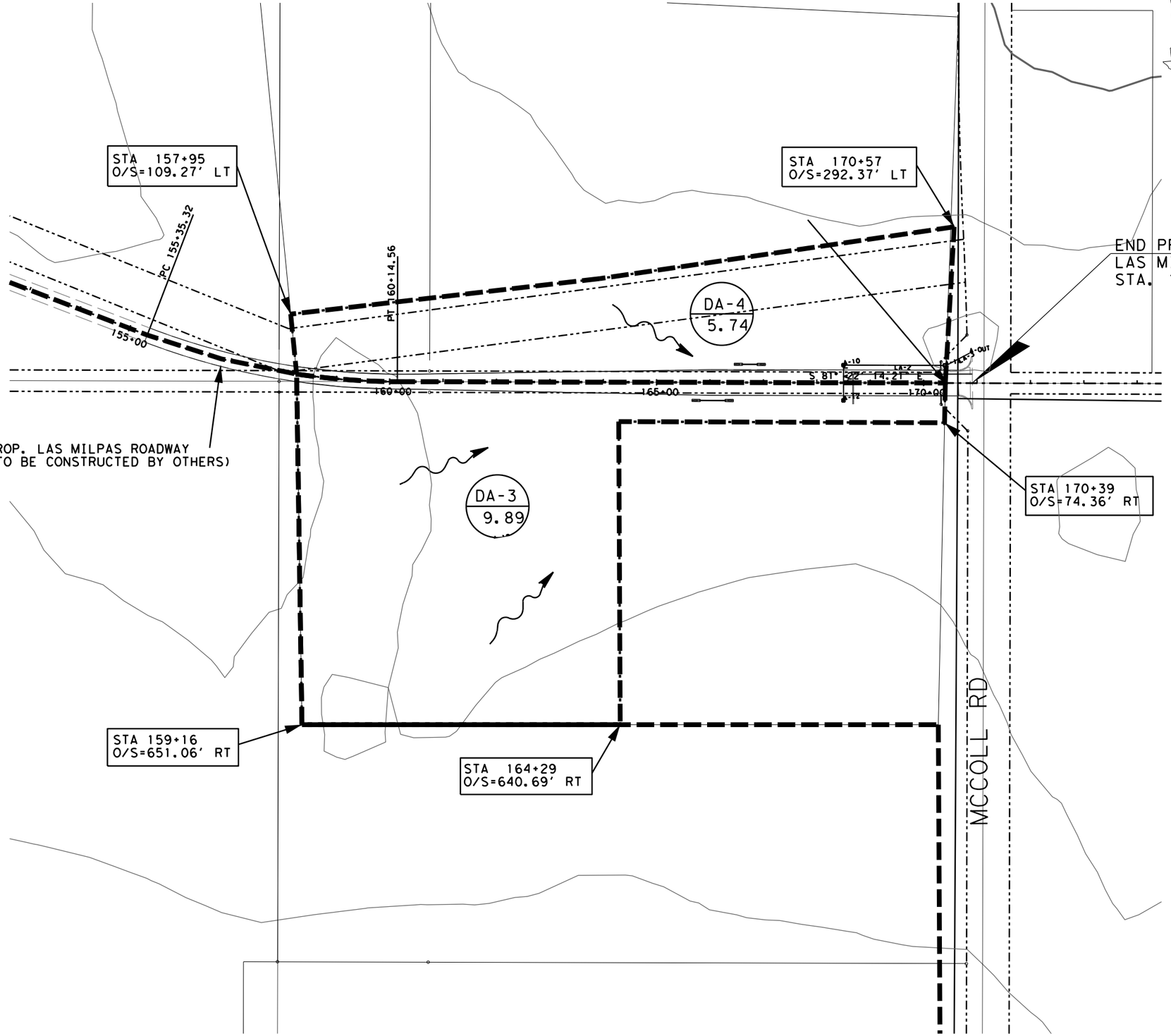
12/27/2021

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
HCDA 07-42-22
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"



LEGEND

DA-XX / 0.00	DESIGNATION OF DRAINAGE AREA AREA IN ACRES
	DRAINAGE AREA BOUNDRARY
	EXISTING FLOW DIRECTION
	PROPOSED CENTERLINE

NOTES:
DRAINAGE AREAS TO OUTFALL INTO PROPOSED STORM DRAIN INLETS

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL LICENSED ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS
DRAINAGE AREA MAP

SCALE: 1"= 200'

SHEET 2 OF 2

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:		6	TEXAS				100
DW:		STATE DIST. NO.	COUNTY	CONTROL	SECTION	JOB NO.	HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-	MILPAS
TR:							
CK TR:							

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12/27/2021

TIME OF CONCENTRATION (tc) (NRCS METHOD)

$$tc = tsh + tsc + tch$$

$$tsh = \frac{0.007\ (nol \times Lsh^{0.8})}{(P_2)^{0.5} \times Ssh^{0.4}}$$

$$tsc = \frac{Lsc}{3600 \times K \times Sc^{0.5}}$$

$$tsc = \frac{Lsc}{3600 \times K \times Sc^{0.5}}$$

tc = TIME OF CONCENTRATION (HR)
tsh = SHEET FLOW TRAVEL TIME (HR)
tsc = SHALLOW CONCENTRATED FLOW TRAVEL TIME (HR)
tch = CHANNEL FLOW TRAVEL TIME (HR)

tsh = SHEET FLOW TRAVEL TIME (HR)
nol = OVERLAND FLOW ROUGHNESS COEFF.
Lsh = SHEET FLOW LENGTH (FT)
P_2 = 2-YEAR, 24-HR RAINFALL DEPTH (IN.)
Ssh = SHEET FLOW SLOPE (FT/FT)

tsc = SHALLOW CONCENTRATED FLOW TIME (HR)
Lsc = SHALLOW CONCENTRATED FLOW LENGTH (FT)
K = 16.13 FOR UNPAVED SURF., 20.32 FOR PAVED SURF.
Ssc = SHALLOW CONCENTRATED SLOPE (FT/FT)

tch = CHANNEL FLOW TIME (HR)
Lch = CHANNEL FLOW LENGTH (FT)
Sch = CHANNEL FLOW SLOPE (FT/FT)
n = MANNING'S ROUGHNESS COEFF.
R = CHANNEL HYDRAULIC RADIUS (FT)

TIMEOF CONCENTRATION(tc)

DRAINAGE AREA I.D.	AREA (AC)	nol	Lsh (FT)	P2 (IN)	Ssh (FT/FT)	tsh (HR)	Lsc (FT)	K	Ssc (FT/FT)	tsc (HR)	Lch (FT)	R (FT)	Sch (FT/FT)	tch (HR)	tc (HR)	tc (MIN)
DA-1	* DATA REFERENCED FROM HYDROLOGIC & HYDRAULIC REPORT FOR SH 365 (SEGMENT1) HIDALGO COUNTY (TEXAS) (L & G ENGINEERING, JAN 2014)															
DA-2	299.5	0.060	100	3.8	0.0020	0.18	2573	16.13	0.0020	0.99	5776	3.911	0.0017	0.32	1.49	89.24
DA-4	5.74	0.060	100	3.8	0.0020	0.18	0	16.13	0.0020	0.00	1215	0.470	0.0012	0.32	0.51	30.33
DA-3	9.89	0.060	100	3.8	0.0020	0.18	551	16.13	0.0020	0.21	1245	0.500	0.0012	0.32	0.71	42.75

DRAINAGERUNOFF (CFS)

DRAINAGE AREA I.D.	TOTAL AREA (A) (AC)	TOTAL SUBAREA 1 (AC)	SUBAREA 1 DESCRIPTION	SUBAREA 1 "C" VALUE	TOTAL SUBAREA 2 (AC)	SUBAREA 2 DESCRIPTION	SUBAREA 2 "C" VALUE	TOTAL "C" VALUE	tc (HR)	Pd (10 YR) (IN)	I (10 YR) (IN/HR)	Pd (100YR) (IN)	I (100YR) (IN/HR)	Q (10 YR) (CFS)	Q (100YR) (CFS)
DA-1	* DATA REFERENCED FROM HYDROLOGIC & HYDRAULIC REPORT FOR SH 365 (SEGMENT1) HIDALGO COUNTY (TEXAS) (L & G ENGINEERING, JAN 2014)													653	801
DA-2	299.5	150.2	UNDEVELOPED	RCN=65	149.3	DEVELOPED	RCN=83	74.00	1.49	7.20	4.83	11.1	7.45	554.95	957.79
DA-4	5.74	5.74	UNDEVELOPED	0.23				0.23	0.51	1.29	4.51	1.91	6.97	5.83	9.00
DA-3	9.89	9.89	UNDEVELOPED	0.23				0.23	0.71	1.29	3.72	1.91	5.8	8.27	12.92

* Q FOR DA-2 CALCULATED USING NRCS METHOD

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS
HYDROLOGIC
CALCULATIONS

DRAWING:		FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
CK:			TEXAS				MILPAS
ENGINEER:		STATE DIST. NO.	COUNTY	CONTROL	SECTION	JOB NO.	SHEET NO.
CK:							
REVIEW:		PHR	HIDALGO	-	-	-	101
CK:							

(HOD) 07-22-22

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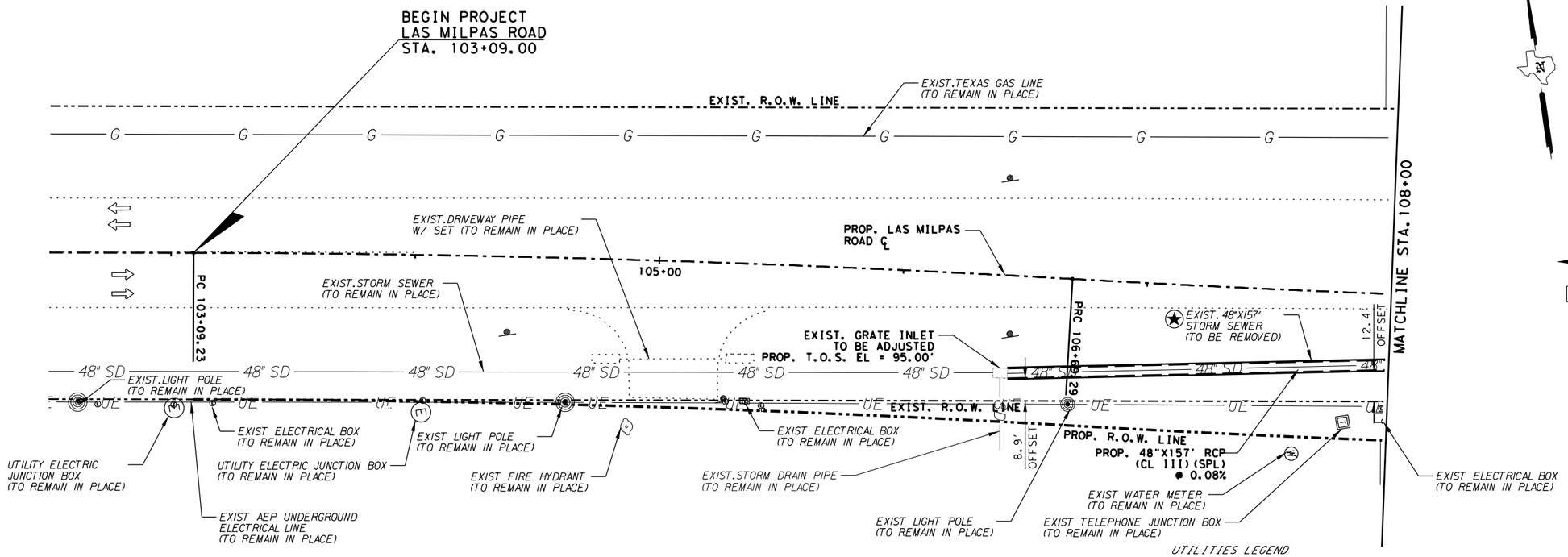


UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY

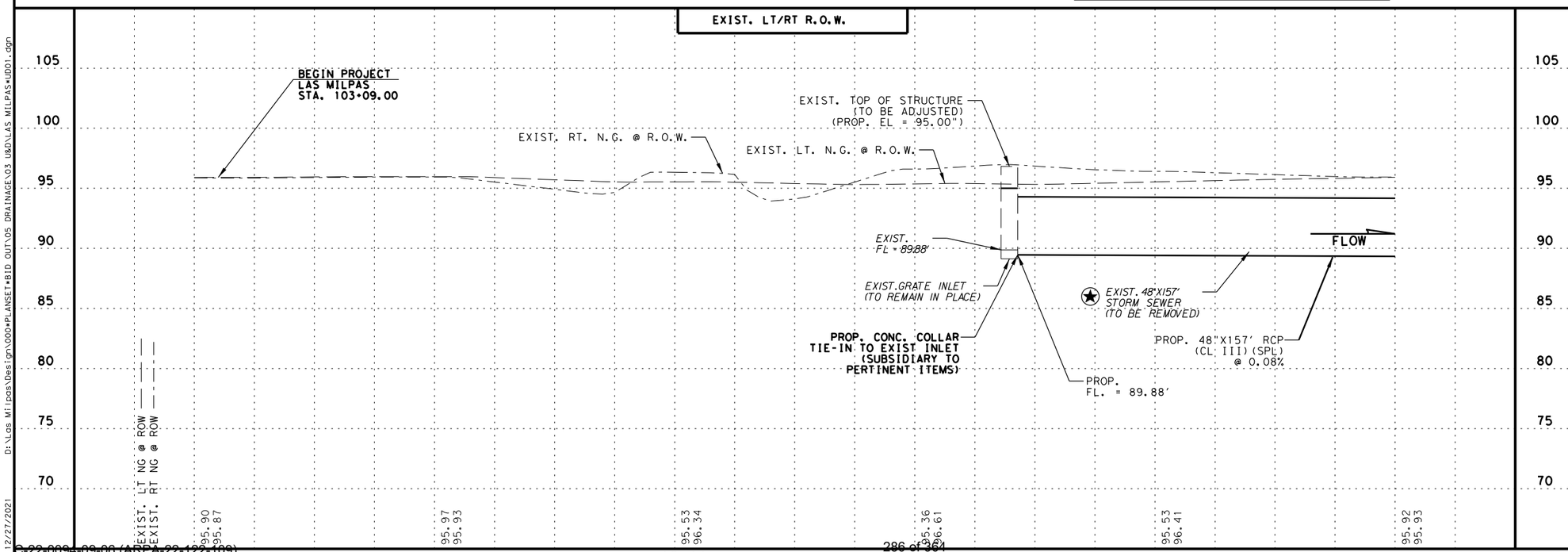
SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	193
402	TRENCH EXCAVATION PROTECTION	LF	157
464	RC PIPE (CL-III)(48IN)(SPL)	LF	157
479	ADJUST INLET	EA	1
496	REMOV STR (PIPE)	LF	157

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
2. ALL RCP SHALL BE CL III(SPL) UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.



STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021
, P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
UTILITIES AND DRAINAGE
STA. 103+09.00 TO STA. 108+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 1 OF 14

DN:	FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:	6	TEXAS					102
DW:	STATE DIST. NO.	COUNTY	CONTROL SECTION NO.		JOB NO.		HIGHWAY NO.
CK DW:	PHR	HIDALGO	-	-	-		MILPAS
TR:							
CK TR:							

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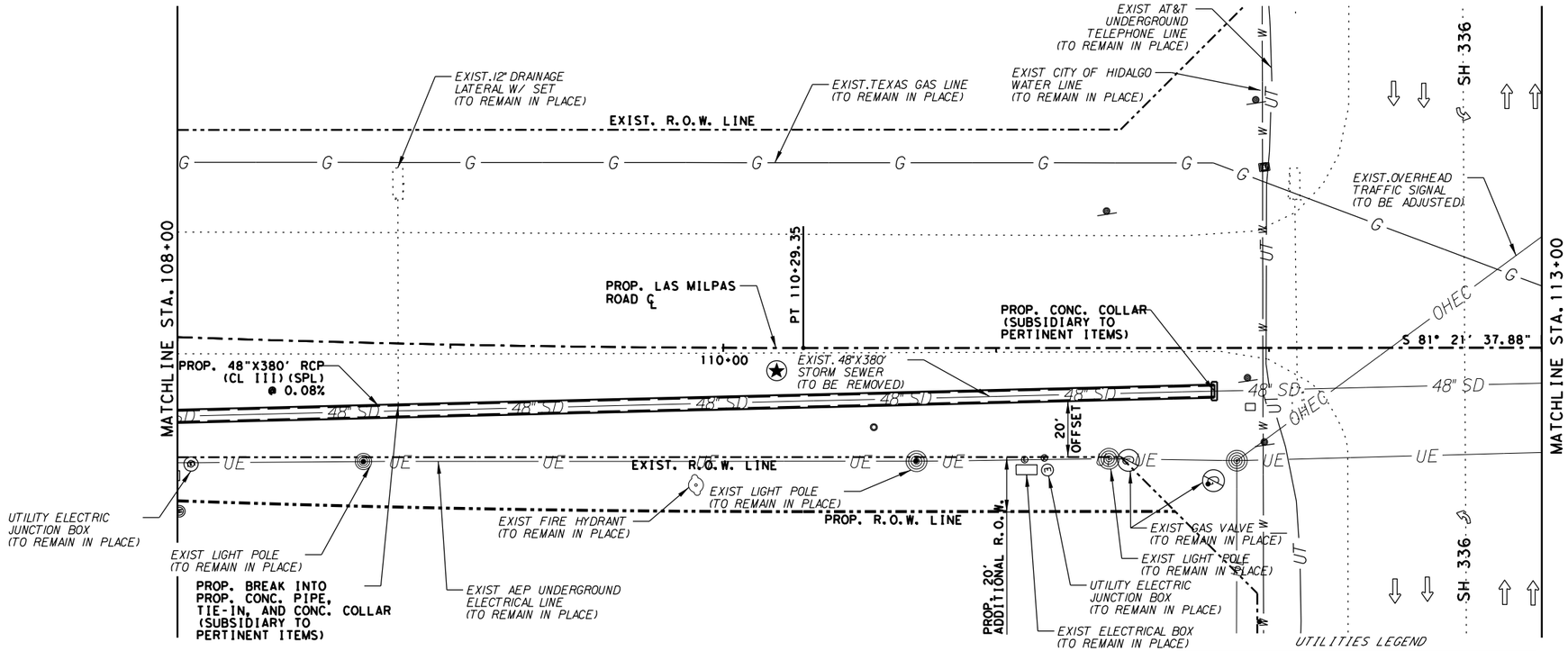
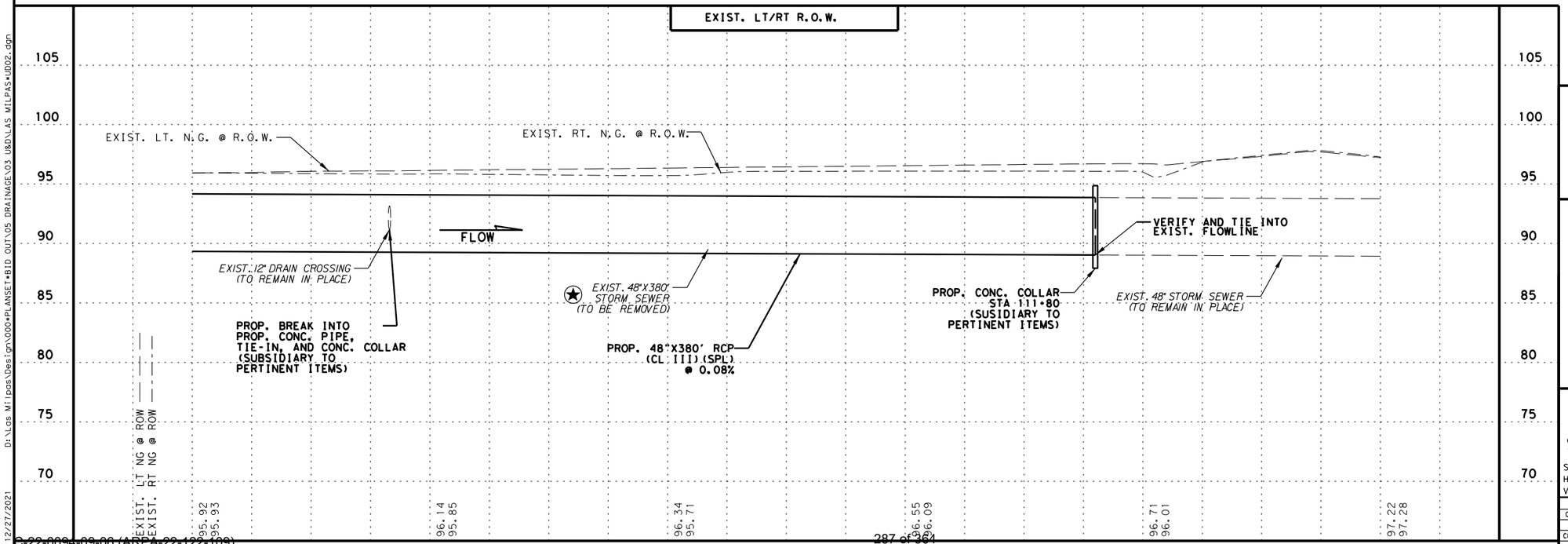
12/27/2021



UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	467
402	TRENCH EXCAVATION PROTECTION	LF	380
464	RC PIPE (CL-III)(48IN)(SPL)	LF	380
496	REMOV STR (PIPE)	LF	380

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
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STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 108+00 TO STA. 113+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 2 OF 14

DN:	FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:	6	TEXAS				103
DW:	STATE DIST. NO.	COUNTY	CONTROL SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:	PHR	HIDALGO	-	-	-	MILPAS
TR:						
CK TR:						

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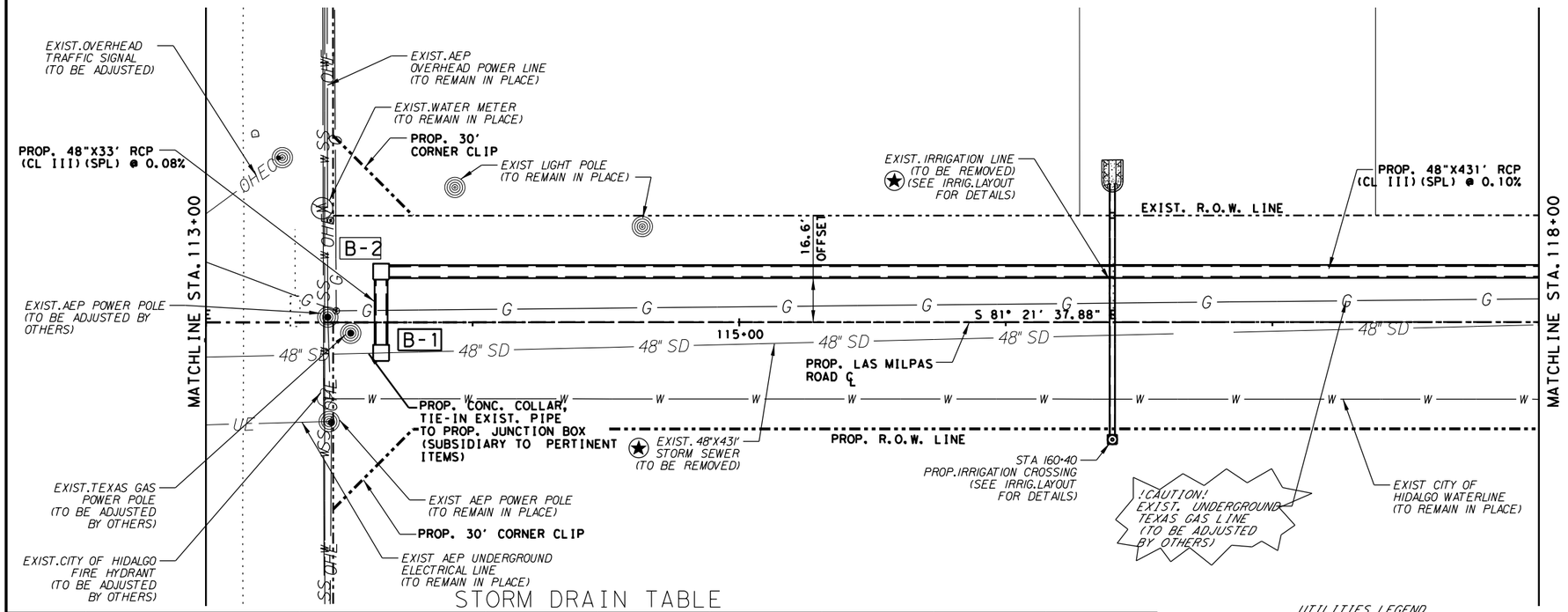
12/27/2021



STORM DRAIN TABLE

STRUCTURE ID	DESCRIPTION	STATION / OFFSET TO FACE OF CURB	TOP OF STR. ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
B-1	JCTBOX (PJB) (6'X6')	STA 113+66, 12' RT	95.38'	89.30'	89.30'	-	-	89.30'
B-2	JCTBOX (PJB) (6'X6')	STA 113+66, 27' LT	95.12'	89.04'	-	89.04'	87.12	-

UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
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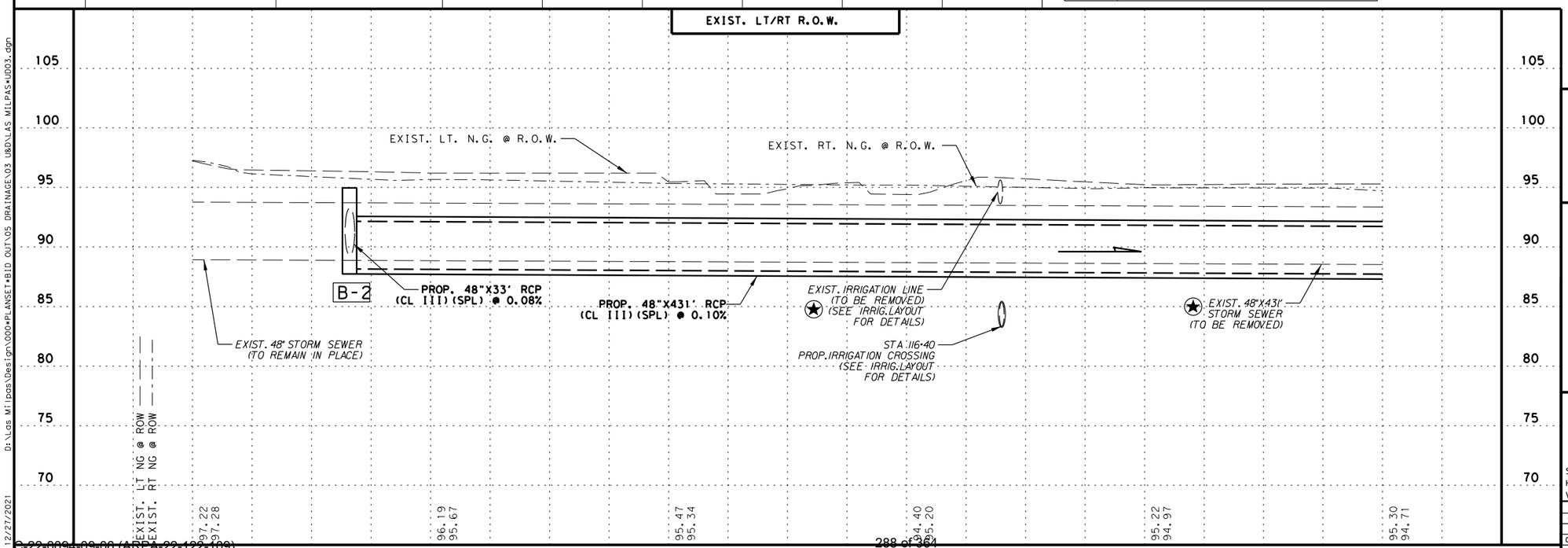

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	570
402	TRENCH EXCAVATION PROTECTION	LF	464
464	RC PIPE (CL-III)(48IN)(SPL)	LF	464
465	JCTBOX (PJB)(6'X6')	EA	2
496	REMOV STR (PIPE)	LF	431

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
2. ALL RCP SHALL BE CL III(SPL) UNLESS OTHERWISE NOTED.
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STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL LICENSED ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 113+00 TO STA. 118+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 3 OF 14

DN:	FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:	6	TEXAS					104
DW:	STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:	PHR	HIDALGO	-	-	-		MILPAS
TR:							
CK TR:							

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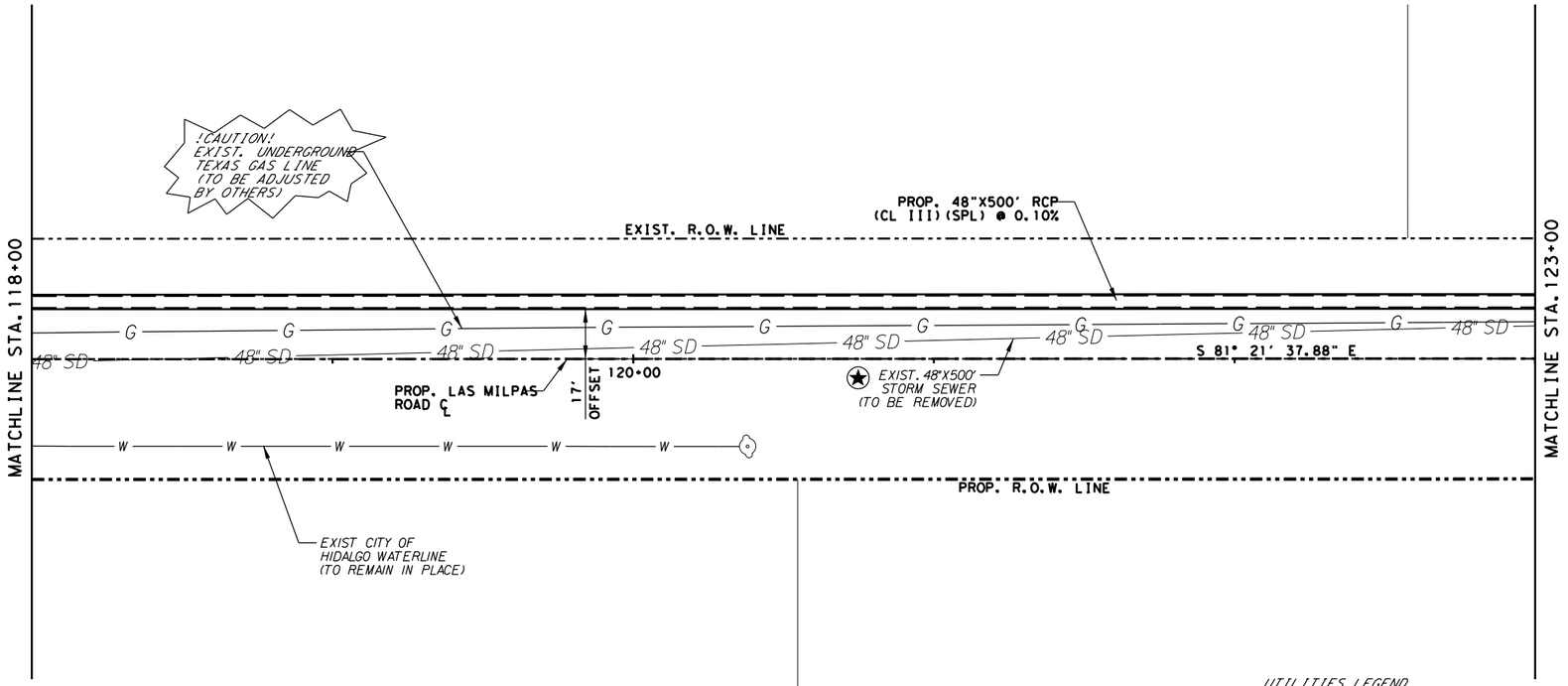
12/27/2021



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	614
402	TRENCH EXCAVATION PROTECTION	LF	500
464	RC PIPE (CL-III)(48IN)(SPL)	LF	500
496	REMOV STR (PIPE)	LF	500

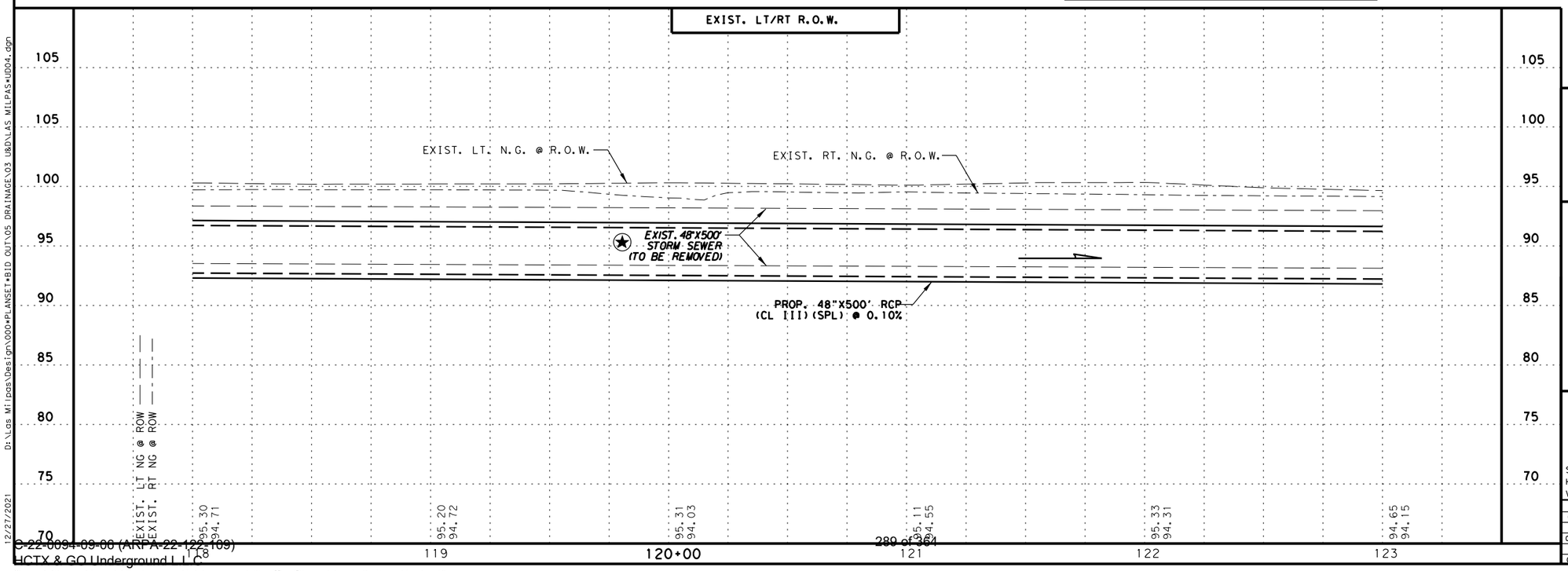
LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
2. ALL RCP SHALL BE CL III(SPL) UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.

UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
STATE OF TEXAS
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
UTILITIES AND DRAINAGE
STA. 118+00 TO STA. 123+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 4 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					105
DW:		STATE DIST. NO.	COUNTY	CONTROL	SECTION	JOB NO.		HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-		MILPAS
TR:								
CK TR:								

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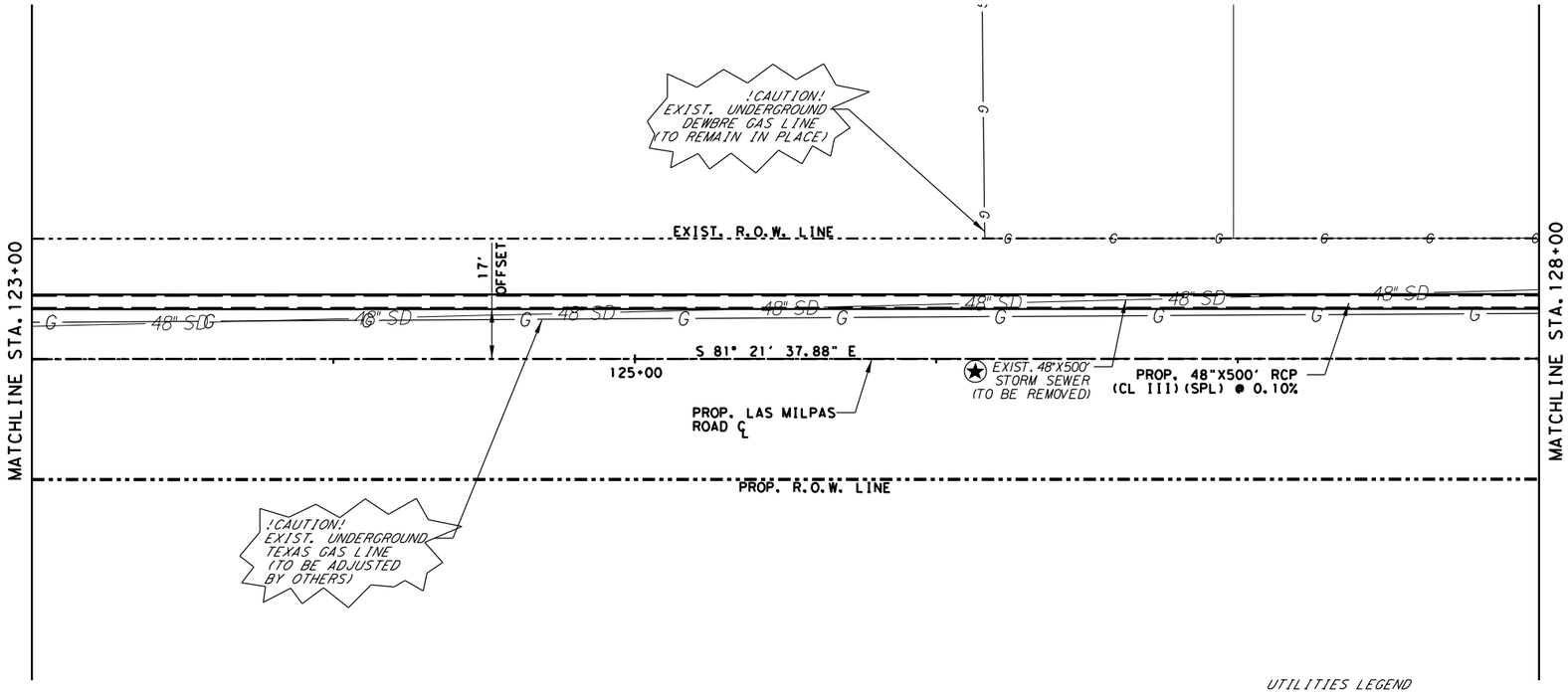
12/27/2021



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	614
402	TRENCH EXCAVATION PROTECTION	LF	500
464	RC PIPE (CL-III)(48IN)(SPL)	LF	500
496	REMOV STR (PIPE)	LF	500

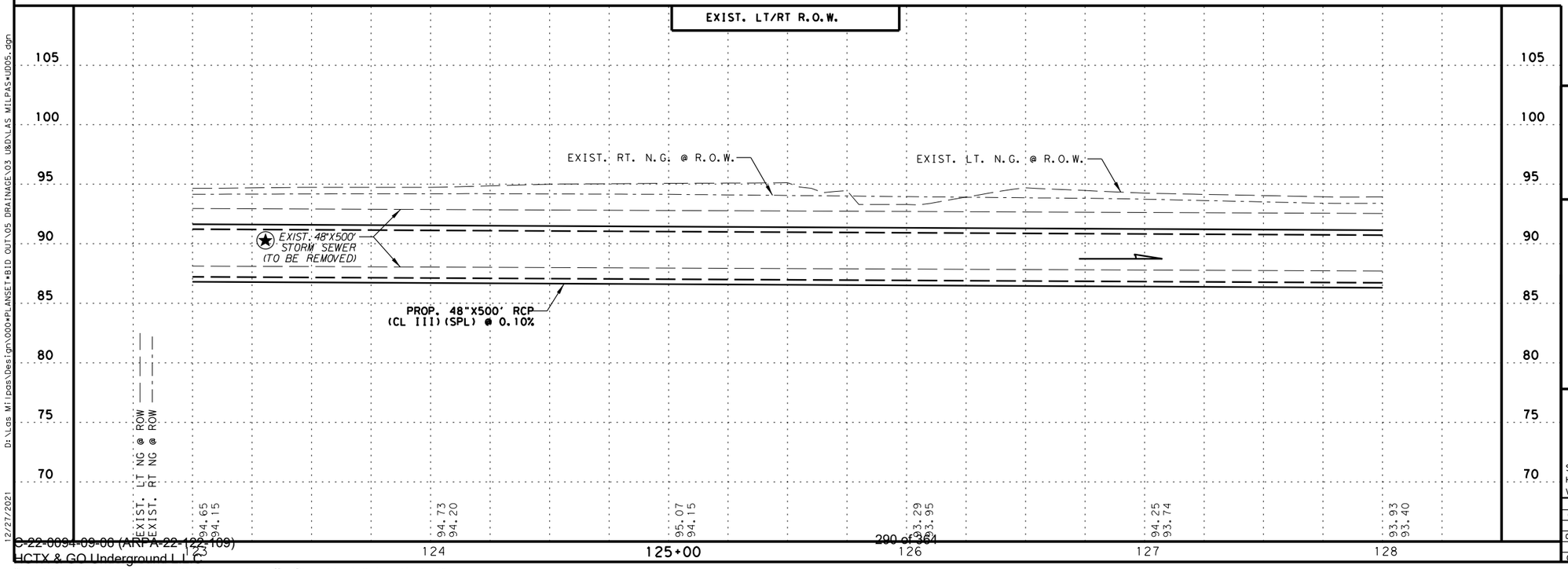
LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
2. ALL RCP SHALL BE CL III(SPL) UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.

UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 123+00 TO STA. 128+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 5 OF 14

DN:	CK DN:	DW:	CK DW:	TR:	CK TR:

FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
6	TEXAS					106
STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.	
PHR	HIDALGO	-	-	-	MILPAS	

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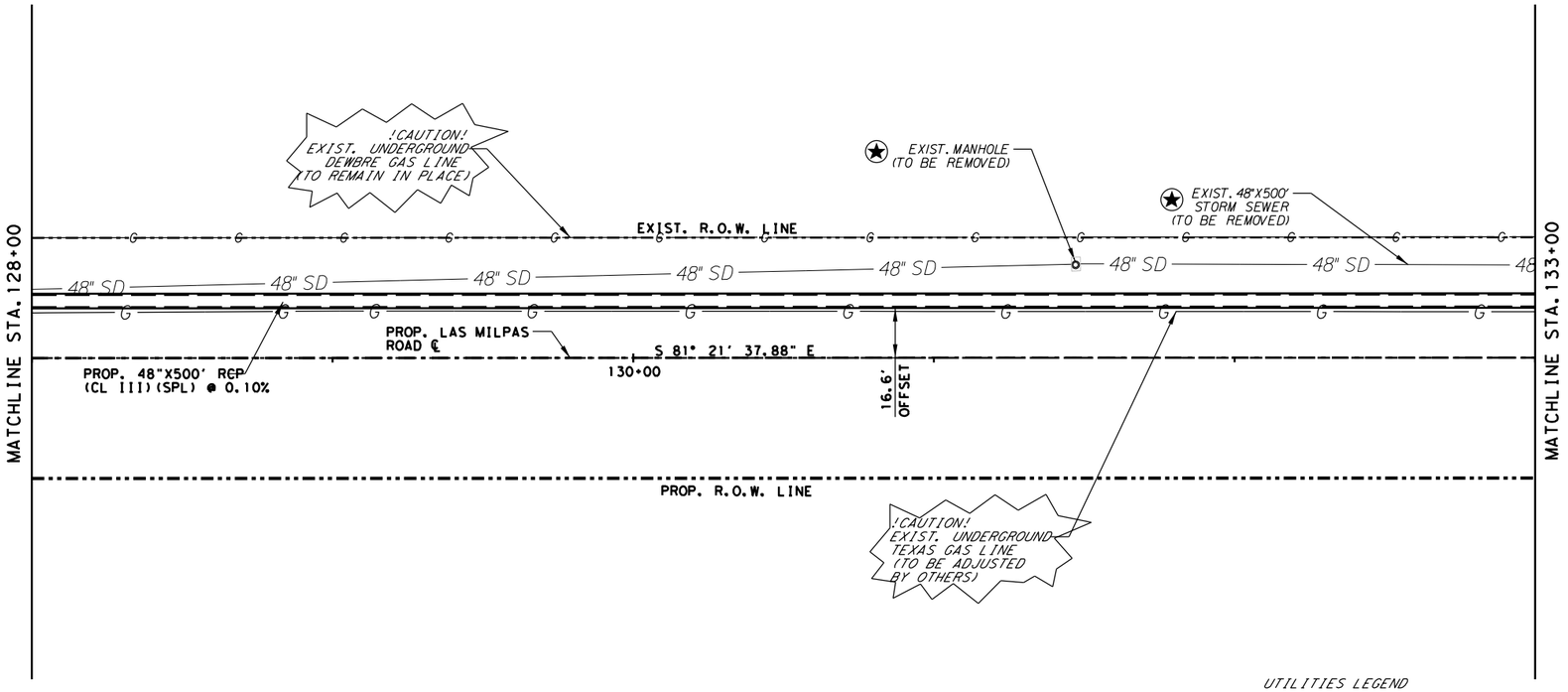
12/27/2021

C-22-0094-09-00 (ARPA-22-122-109)
HCTX & GO Underground L...
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"
HCDA 07-22-22



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	614
402	TRENCH EXCAVATION PROTECTION	LF	500
464	RC PIPE (CL-III)(48IN)(SPL)	LF	500
496	REMOV STR (PIPE)	LF	500
496	REMOV STR (MANHOLE)	EA	1

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
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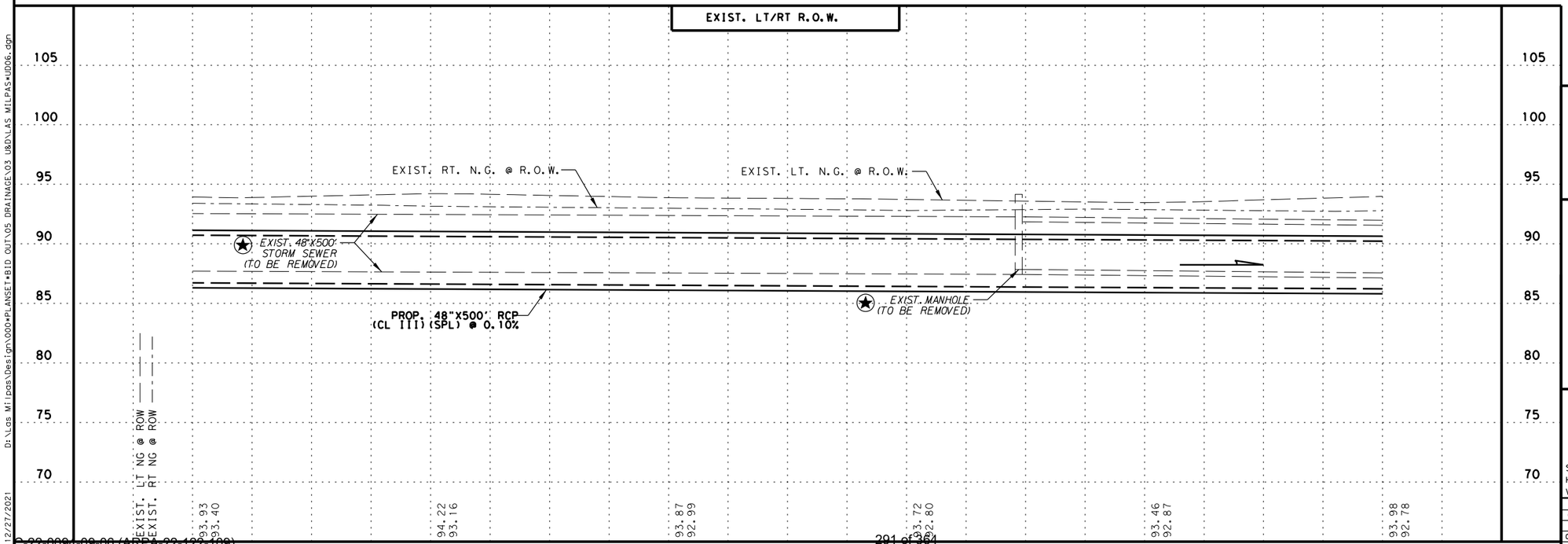
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.

UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
UTILITIES AND DRAINAGE
STA. 128+00 TO STA. 133+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 6 OF 14

DN:	FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:	6	TEXAS					107
DW:	STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:	PHR	HIDALGO	-	-	-		MILPAS
TR:							
CK TR:							

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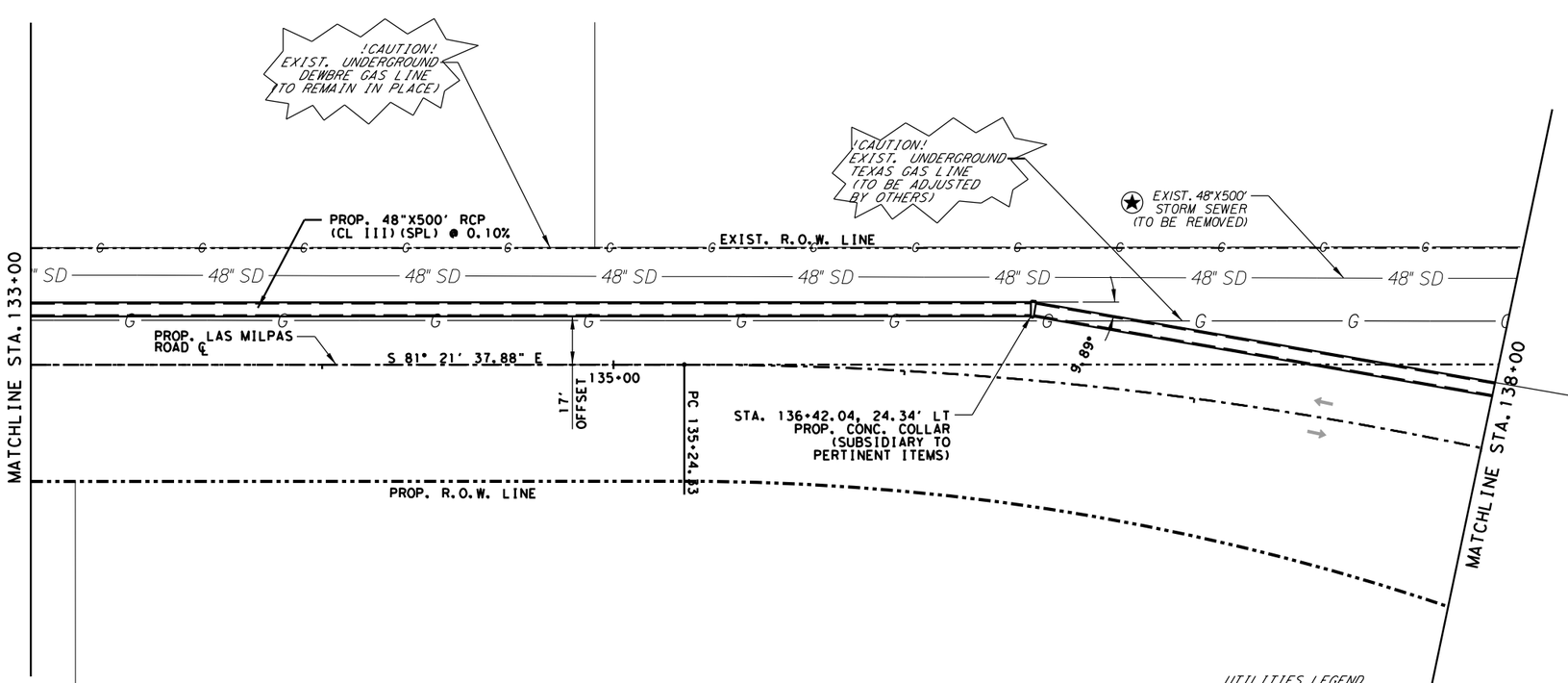
12/27/2021

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	614
402	TRENCH EXCAVATION PROTECTION	LF	500
464	RC PIPE (CL-III)(48IN)(SPL)	LF	500
496	REMOV STR (PIPE)	LF	500



LEGEND

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- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

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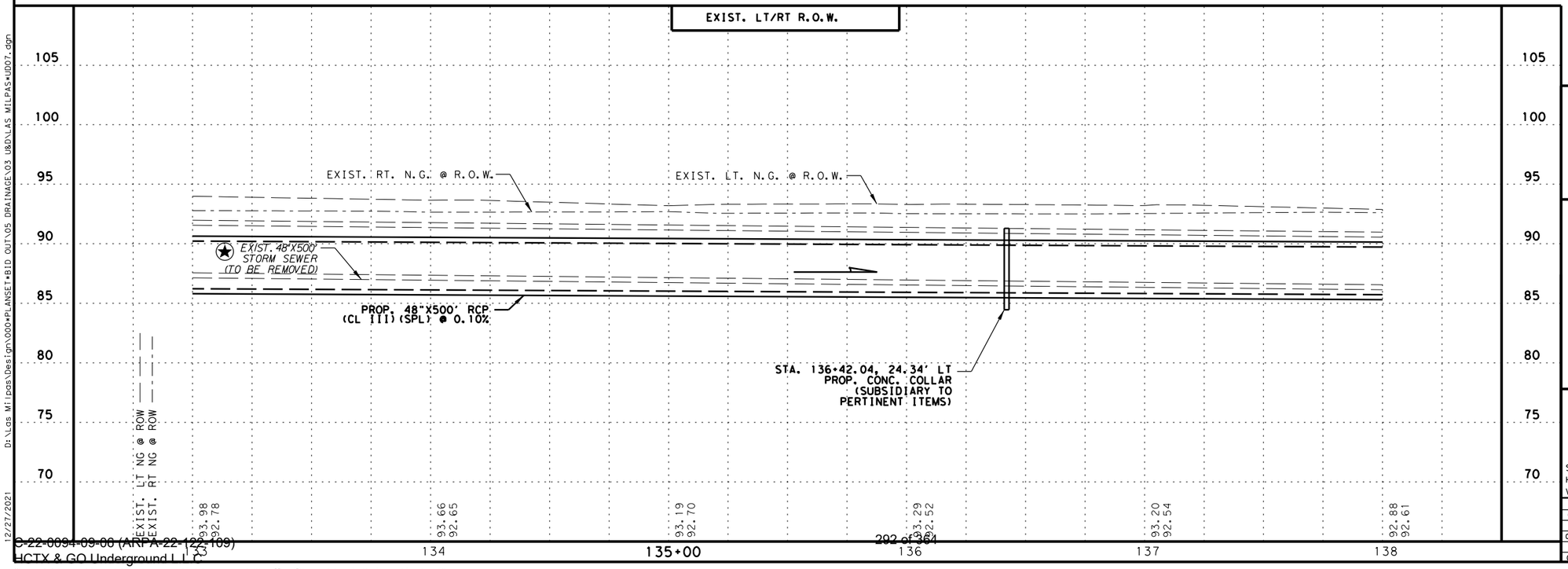
UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 133+00 TO STA. 138+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 7 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					108
DW:		STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-		MILPAS
TR:								
CK TR:								

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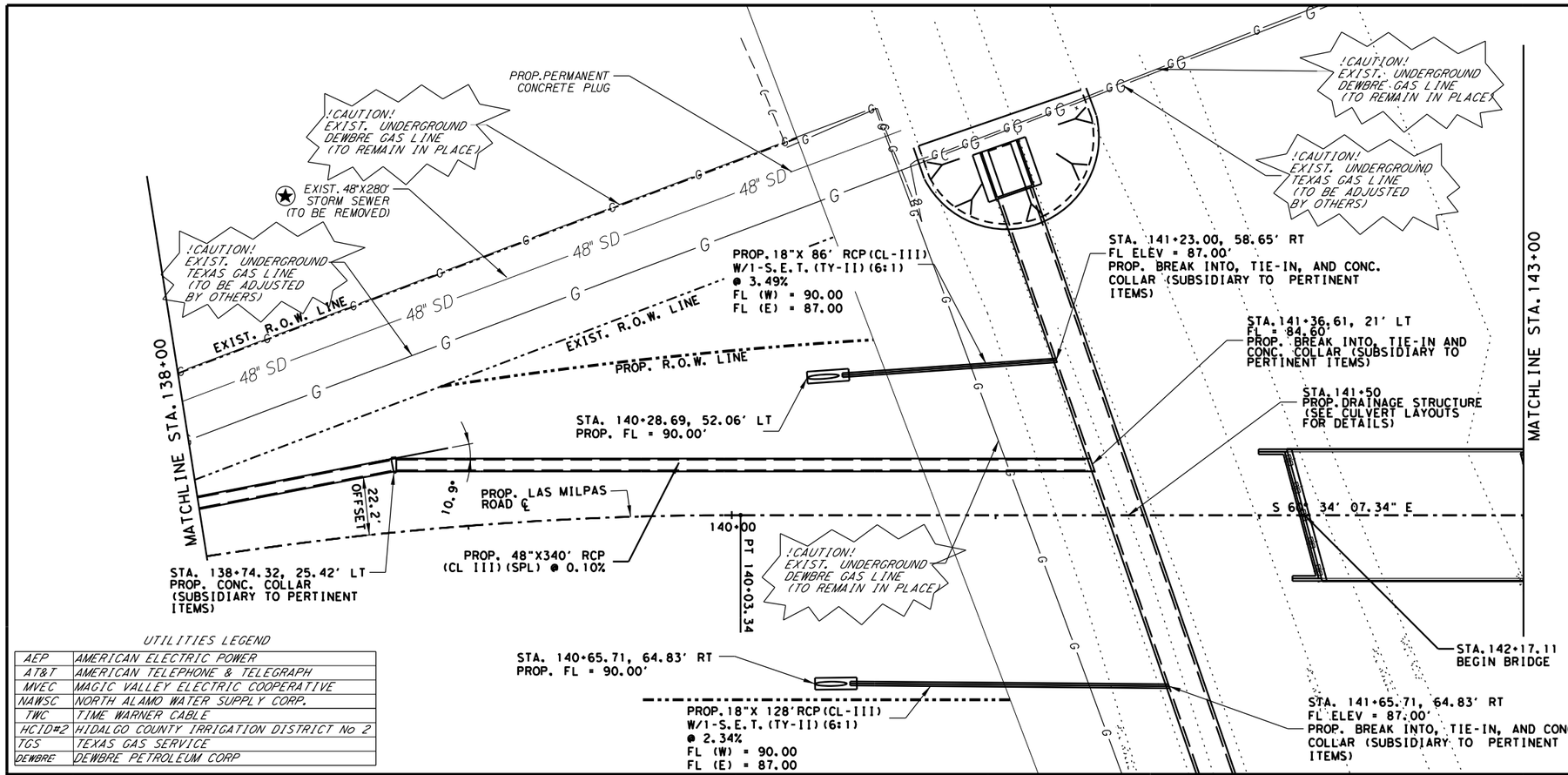

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12/27/2021

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	420
402	TRENCH EXCAVATION PROTECTION	LF	554
464	RC PIPE (CL-III) (18IN)	LF	214
464	RC PIPE (CL-III) (48IN)(SPL)	LF	340
496	REMOV STR (PIPE)	LF	280
467	SET (TY II)(6:1)(18")(P)	EA	2

LEGEND

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- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
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UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#2	HIDALGO COUNTY IRRIGATION DISTRICT No 2
TGS	TEXAS GAS SERVICE
DEWBRE	DEWBRE PETROLEUM CORP

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

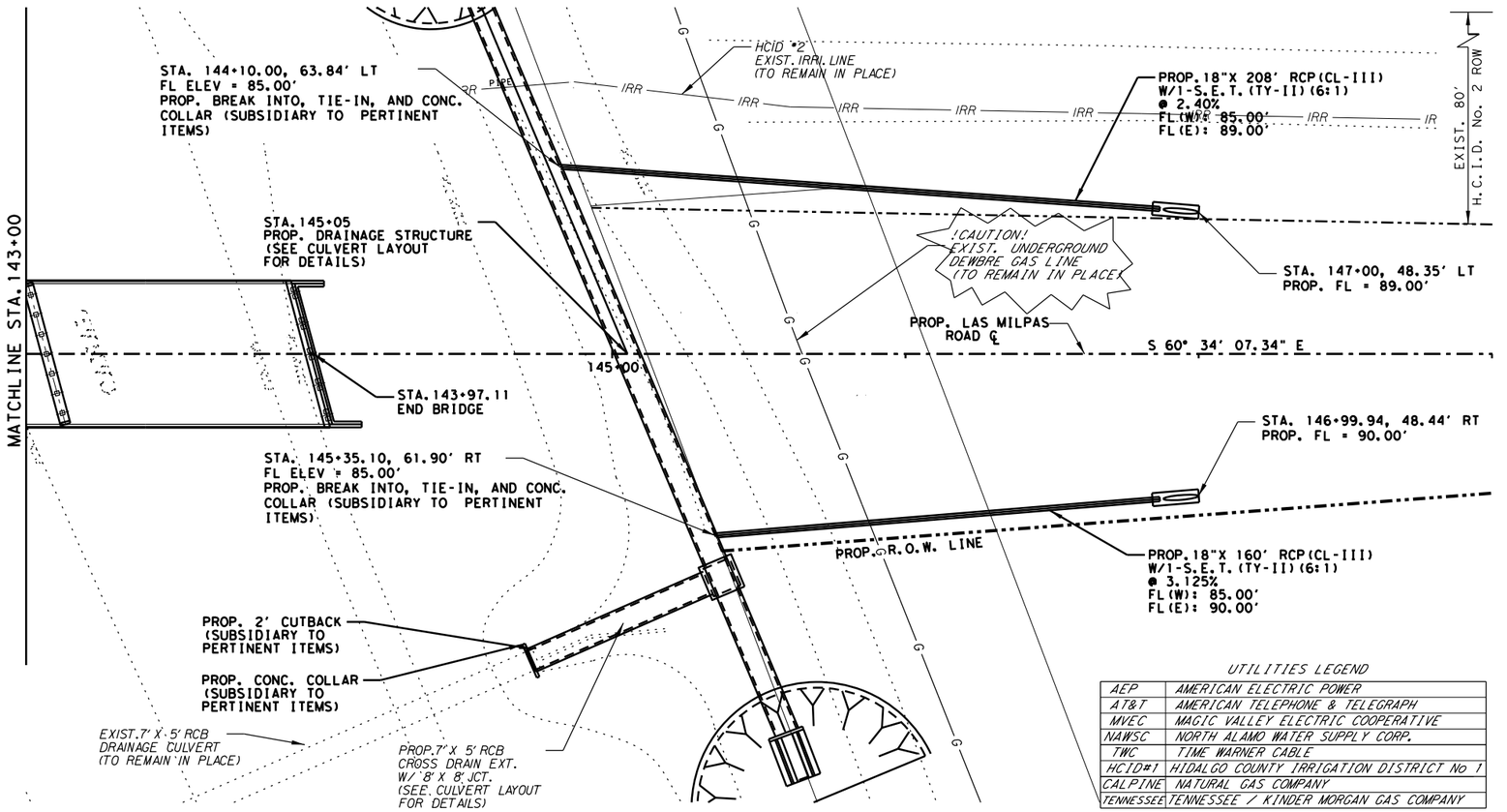
HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 138+00 TO STA. 143+00

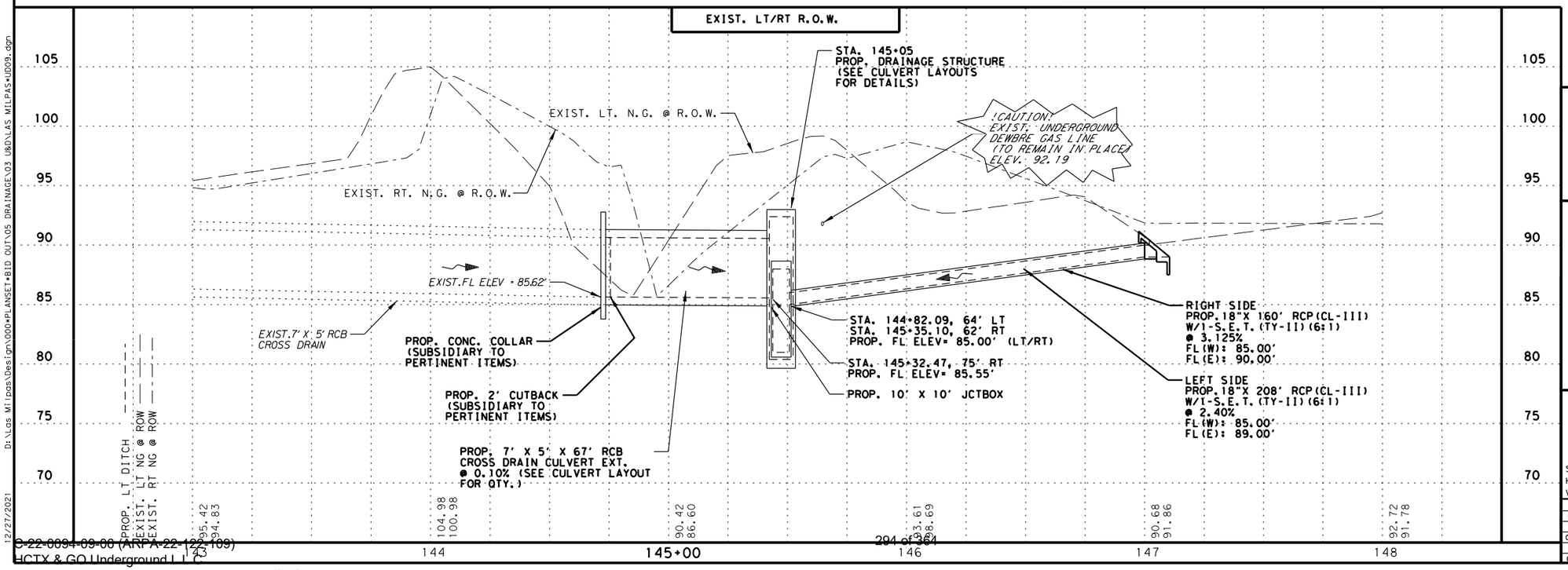
SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 8 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					109
DW:		STATE DIST. NO.	COUNTY	CONTROL	SECTION	JOB NO.		HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-		MILPAS
TR:								
CK TR:								



UTILITIES LEGEND	
AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
402	TRENCH PROTECTION	LF	372
464	RC PIPE (CL-III)(18IN)	LF	368
467	SET(TY II)(18IN)(6:1)(P)	EA	2

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
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STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
, P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 143+00 TO STA. 148+00

SCALE:
HOR: 1" = 50'
VER: 1" = 10'

SHEET 9 OF 11

DN:	CK DN:	DW:	CK DW:	TR:	CK TR:	FED. RD. DIV. NO.	STATE	PROJECT NO.	SHEET NO.
						6	TEXAS		110
						STATE DIST. NO.	COUNTY	CONTROL	SECTION	JOB NO.	HIGHWAY NO.
						PHR	HIDALGO	-	-	-	MILPAS

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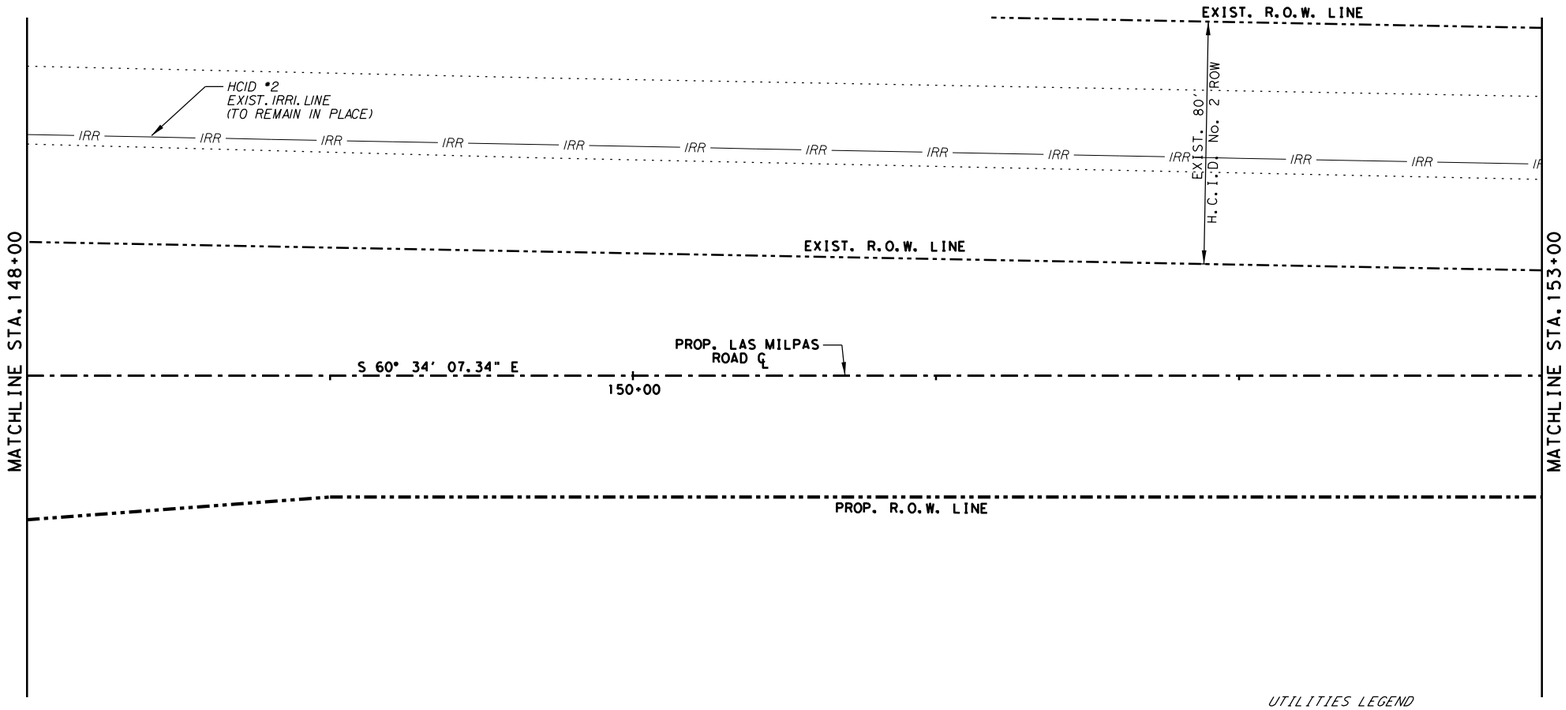
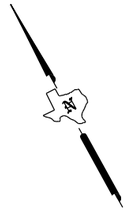
12/27/2021





SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

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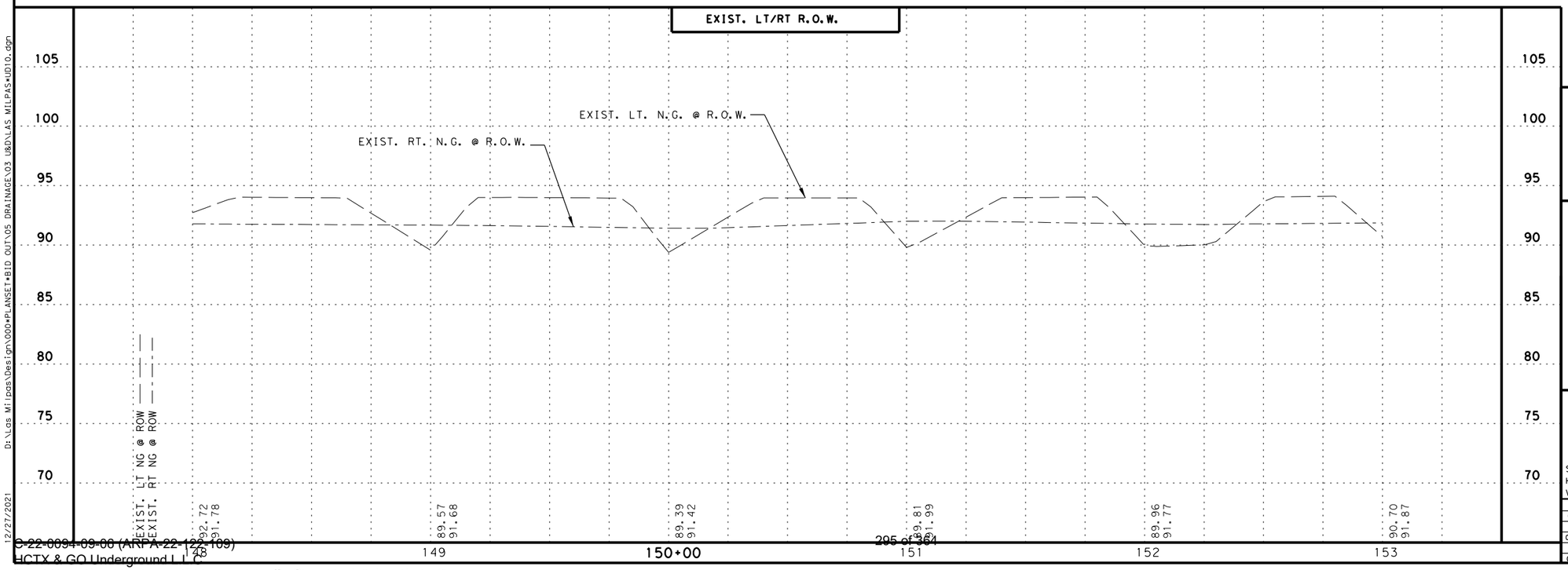
UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
, P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 148+00 TO STA. 153+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 10 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					111
DW:		STATE DIST. NO.	COUNTY	CONTROL	SECTION	JOB NO.		HIGHWAY NO.
CK DW:								
TR:		PHR	HIDALGO	-	-	-		MILPAS
CK TR:								

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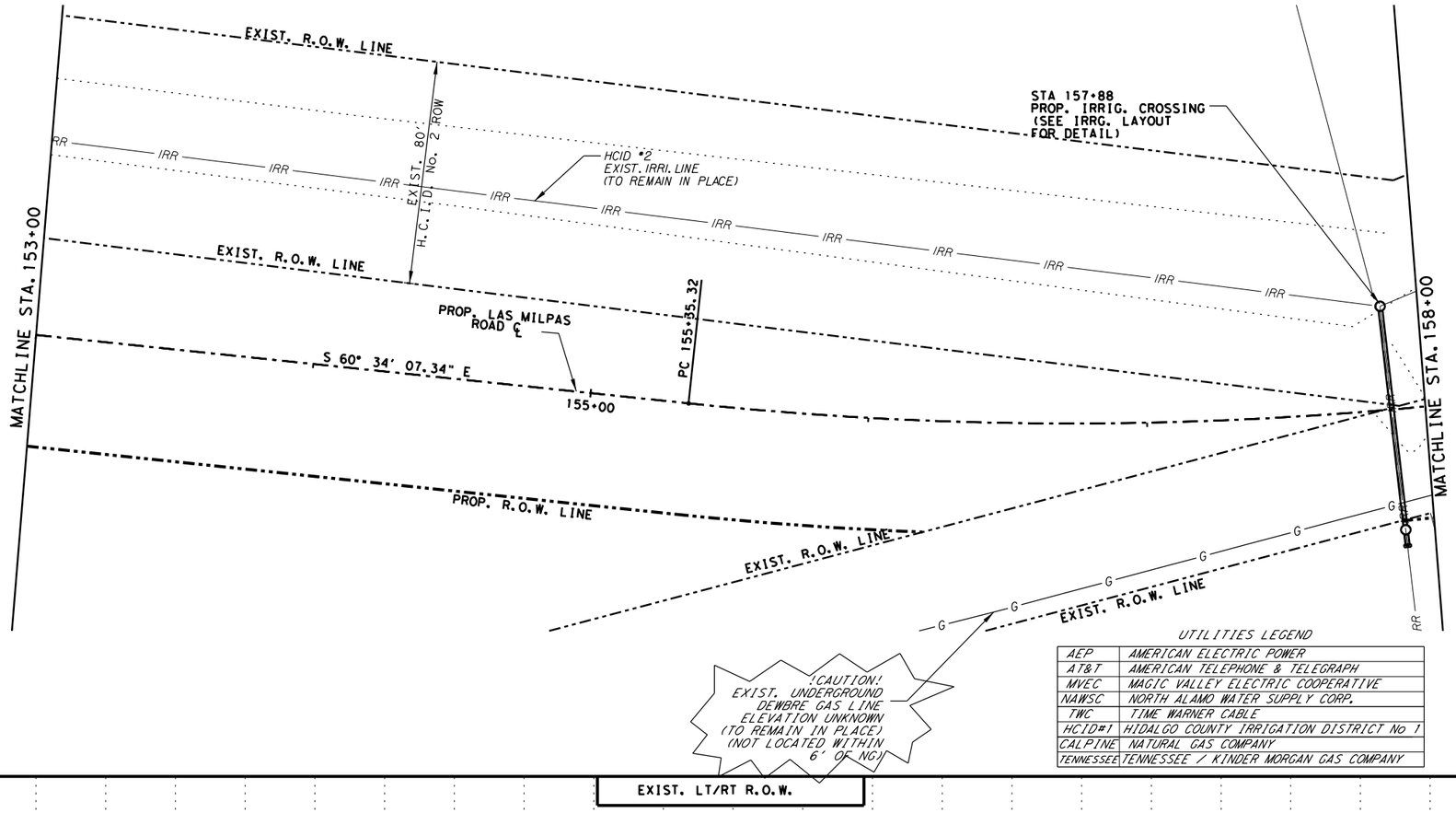
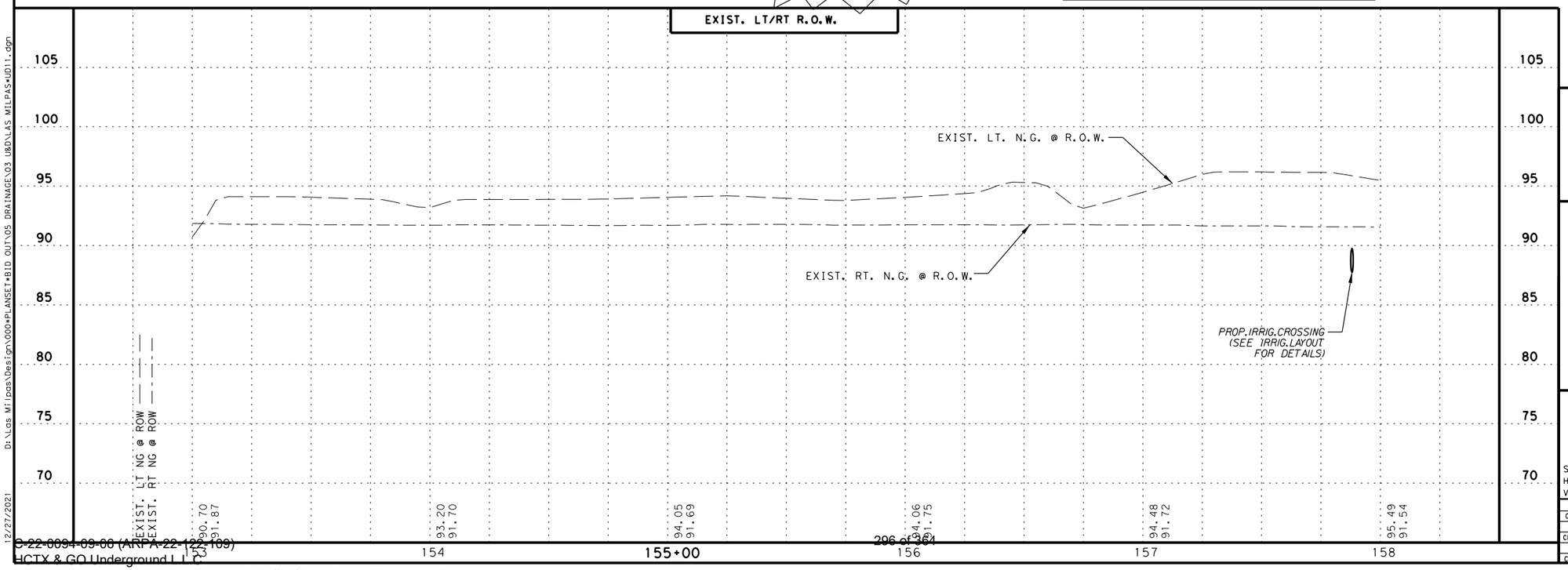
12/27/2021



UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

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STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL LICENSED ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 153+00 TO STA. 158+00

SCALE:
HOR: 1" = 50'
VER: 1" = 10'

SHEET 11 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:		6	TEXAS				112
DW:		STATE DIST. NO.	COUNTY	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:							
TR:		PHR	HIDALGO	-	-	-	MILPAS
CK TR:							

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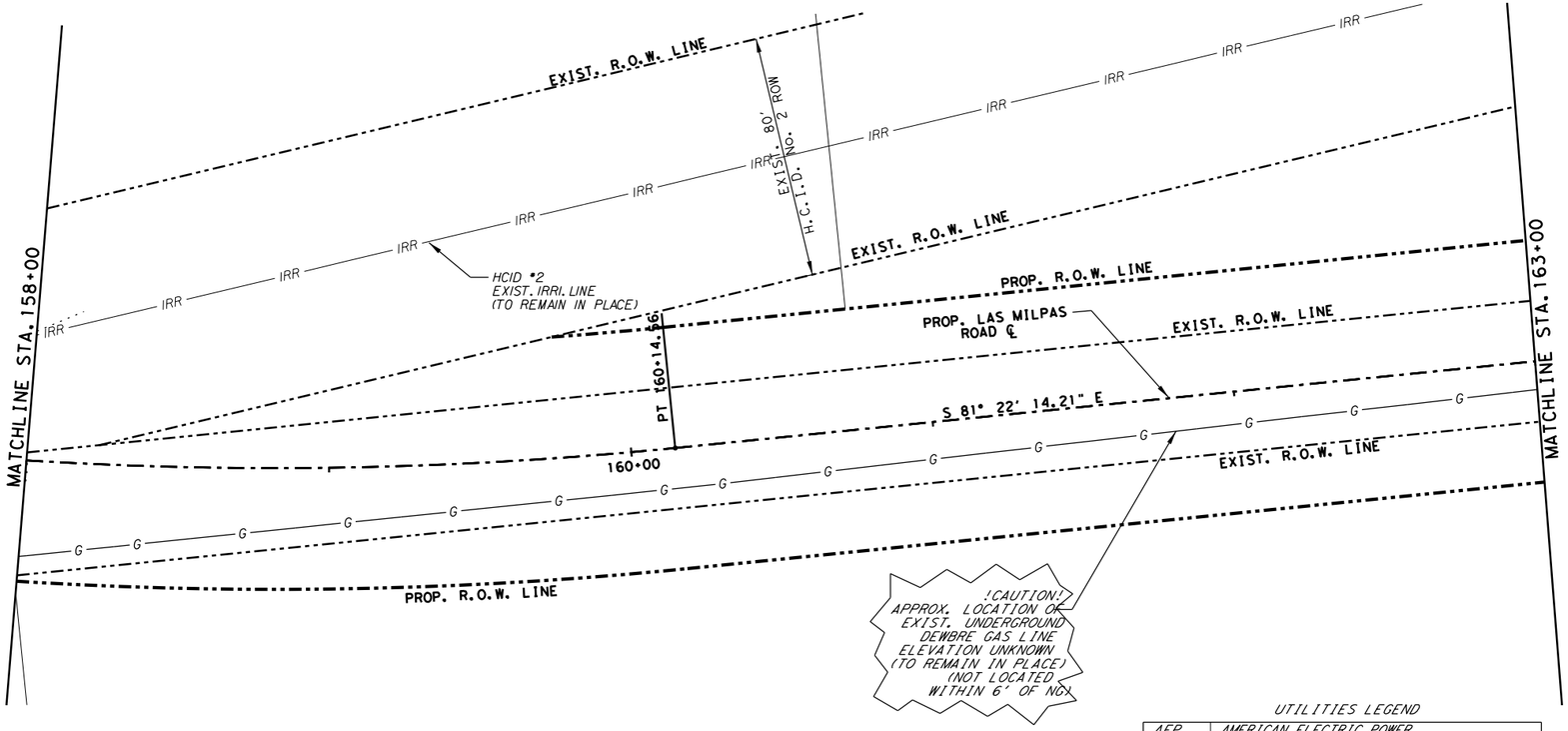
12/27/2021



UTILITIES LEGEND

AEP	*AMERICAN ELECTRIC POWER*
AT&T	*AMERICAN TELEPHONE & TELEGRAPH*
MVEC	*MAGIC VALLEY ELECTRIC COOPERATIVE*
NAWSC	*NORTH ALAMO WATER SUPPLY CORP.*
TWC	*TIME WARNER CABLE*
HCID#1	*HIDALGO COUNTY IRRIGATION DISTRICT No 1*
CALPINE	*NATURAL GAS COMPANY*
TENNESSEE	*TENNESSEE / KINDER MORGAN GAS COMPANY*

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY

LEGEND

- SEE P&P SHEETS FOR DETAILS
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- DIRECTION OF PROPOSED DITCH
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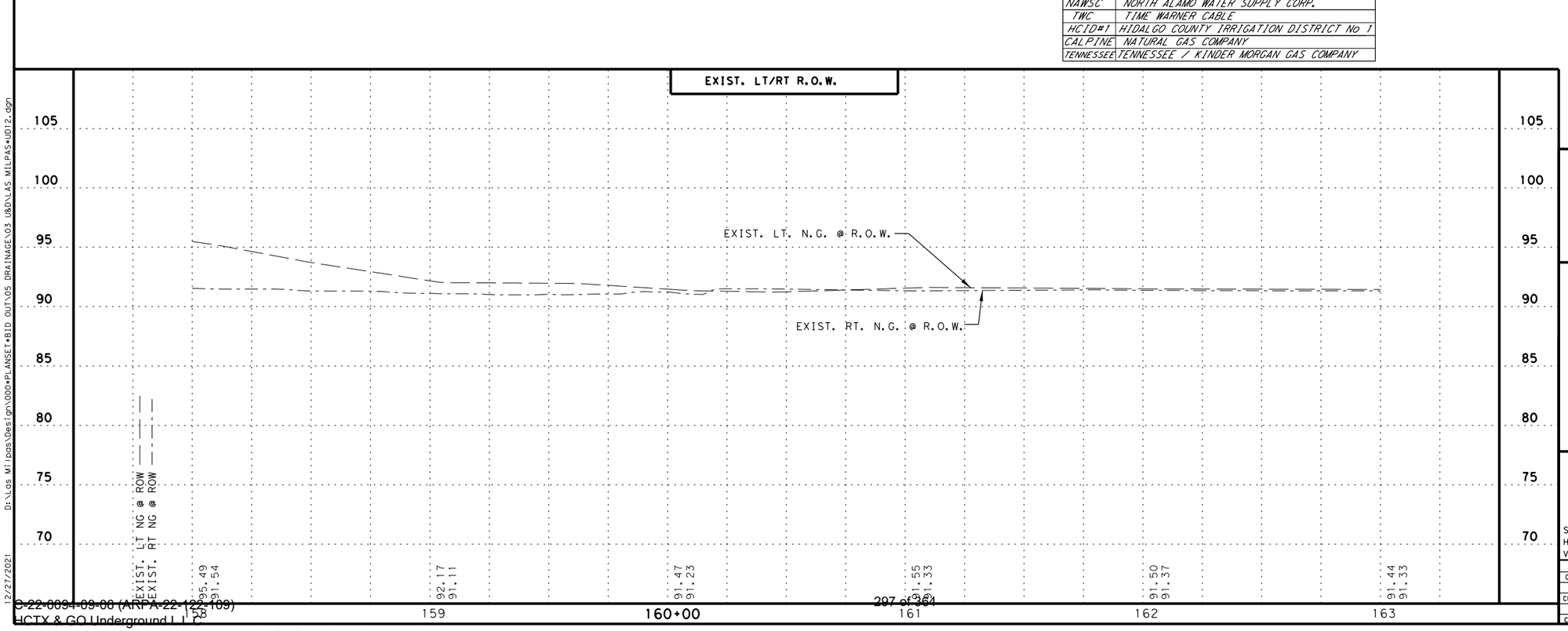
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.



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12/27/2021

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

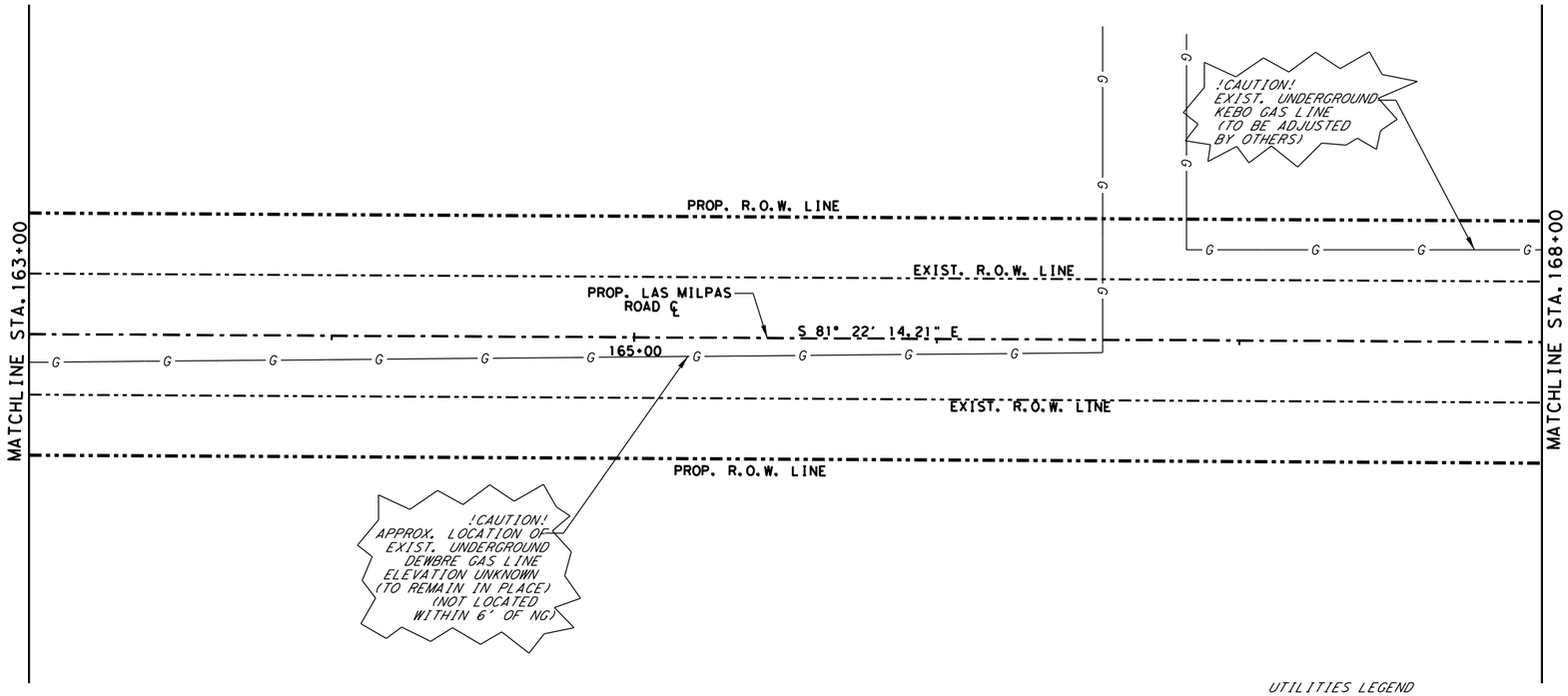
HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
UTILITIES AND DRAINAGE
STA. 158+00 TO STA. 163+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 12 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					113
DW:		STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-		MILPAS
TR:	
CK TR:	



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY

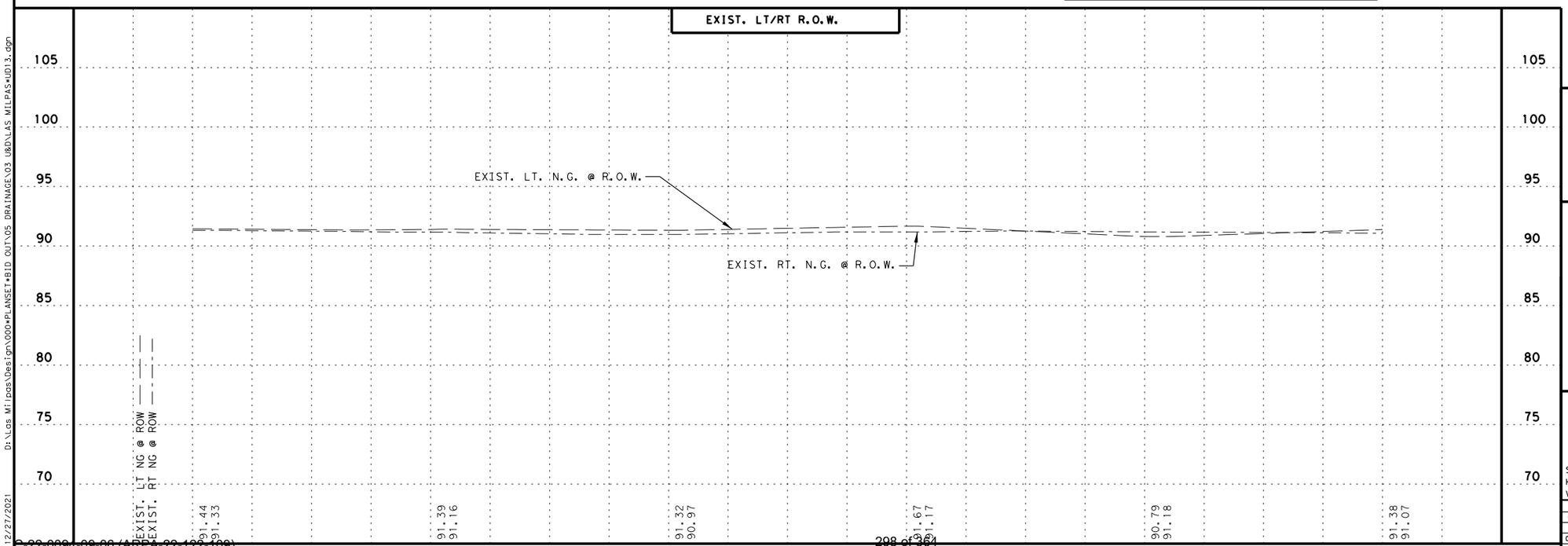
LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
2. ALL RCP SHALL BE CL III(SPL) UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.

UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 163+00 TO STA. 168+00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 13 OF 14

DN:	CK DN:	DW:	CK DW:	TR:	CK TR:

FED. RD. DIV. NO.	STATE	PROJECT NO.	SHEET NO.
6	TEXAS		114

STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
PHR	HIDALGO	-	-	-	MILPAS

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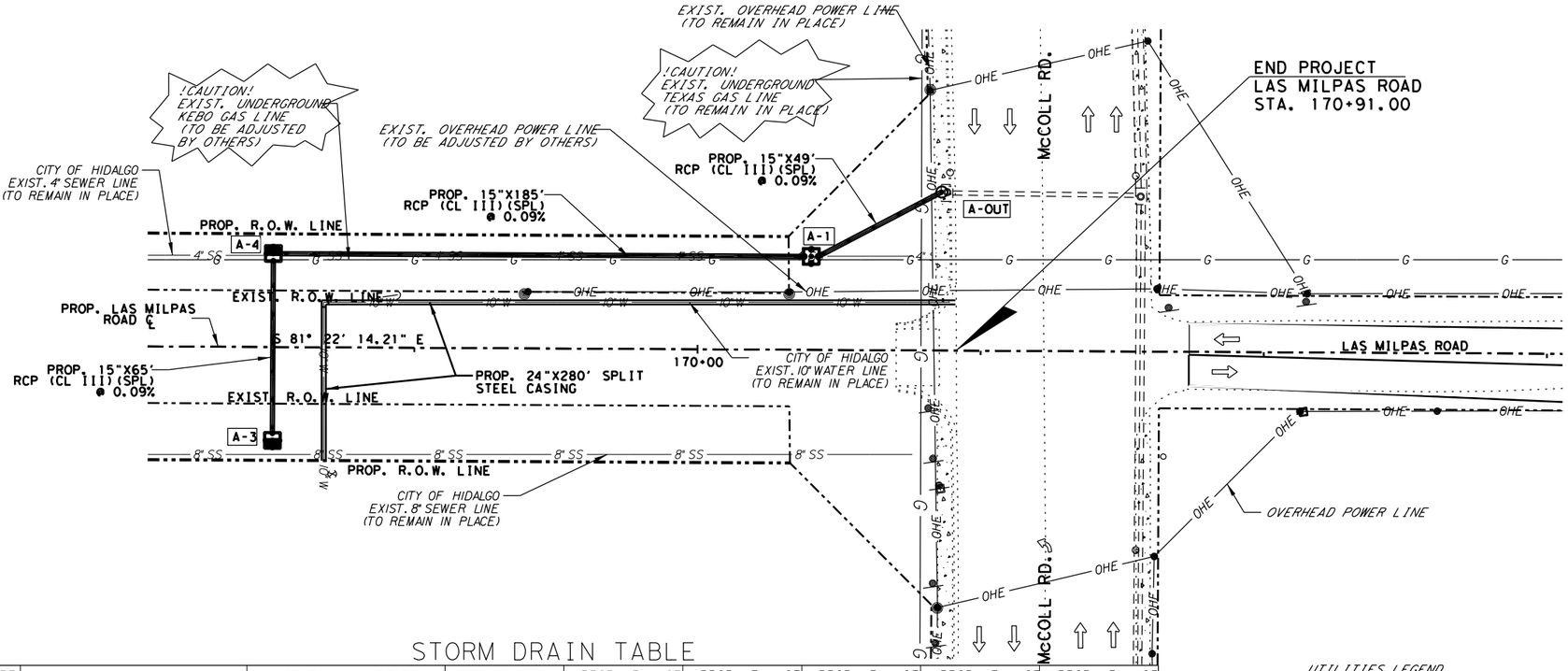
12/27/2021

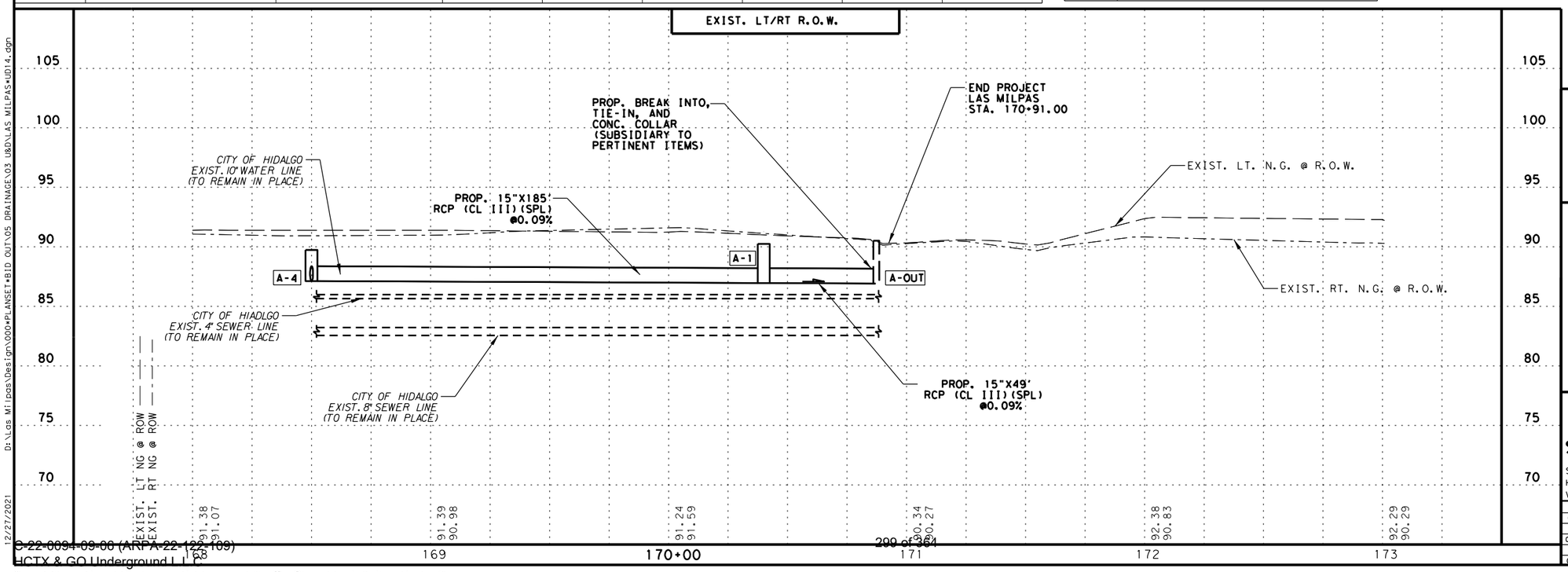


STORM DRAIN TABLE

STRUCTURE ID	DESCRIPTION	STATION / OFFSET TO FACE OF CURB	TOP OF STR. ELEVATION	PROP. FL. OF STRUCTURE	PROP. FL. OF PIPE (NORTH)	PROP. FL. OF PIPE (SOUTH)	PROP. FL. OF PIPE (EAST)	PROP. FL. OF PIPE (WEST)
A-1	JCT BOX 5X5	STA 170+40, 33.00' LT	90.25'	86.96'			86.96'	86.96'
A-4	PSL FG 3X5 W/ 3X5 GR	STA 168+50, 34.00' LT	89.73'	87.13'		87.13'	87.13'	
A-3	PSL FG 3X5 W/ 3X5 GR	STA 168+50, 34.00' RT	89.73'	87.19'	87.19'			
A-OUT	EXIST. INLET	STA 170+89, 56.00' LT	90.51'	86.91'				86.91'

UTILITIES LEGEND

AEP	AMERICAN ELECTRIC POWER
AT&T	AMERICAN TELEPHONE & TELEGRAPH
MVEC	MAGIC VALLEY ELECTRIC COOPERATIVE
NAWSC	NORTH ALAMO WATER SUPPLY CORP.
TWC	TIME WARNER CABLE
HCID#1	HIDALGO COUNTY IRRIGATION DISTRICT No 1
CALPINE	NATURAL GAS COMPANY
TENNESSEE	TENNESSEE / KINDER MORGAN GAS COMPANY



SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
400	SAND BACKFILL	CY	95
402	TRENCH PROTECTION	LF	299
464	RC PIPE (CL-III)(15IN)	LF	299
465	INLET (PSL)(FG)(3'X5') (W/ 3'X5' GR)	EA	2
465	JCTBX (PJB)(5'X5')	EA	1
7044	CASING (SPLIT STEEL)(24IN)(OPEN TRENCH)	LF	280

LEGEND

- SEE P&P SHEETS FOR DETAILS
- TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- DIRECTION OF PROPOSED DITCH
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTES:
1. SEE ALIGNMENT DATA SHEET FOR PROPOSED CENTERLINE DATA.
2. ALL RCP SHALL BE CL III(SPL) UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS , PRIOR TO ANY EXCAVATION, GRADING OR SCARIFYING OPERATIONS.

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD UTILITIES AND DRAINAGE STA. 168+00 TO STA. 170+91.00

SCALE:
HOR: 1"= 50'
VER: 1"= 10'

SHEET 14 OF 14

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					115
DW:		STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.	
CK DW:		PHR	HIDALGO	-	-	-	MILPAS	
TR:								
CK TR:								

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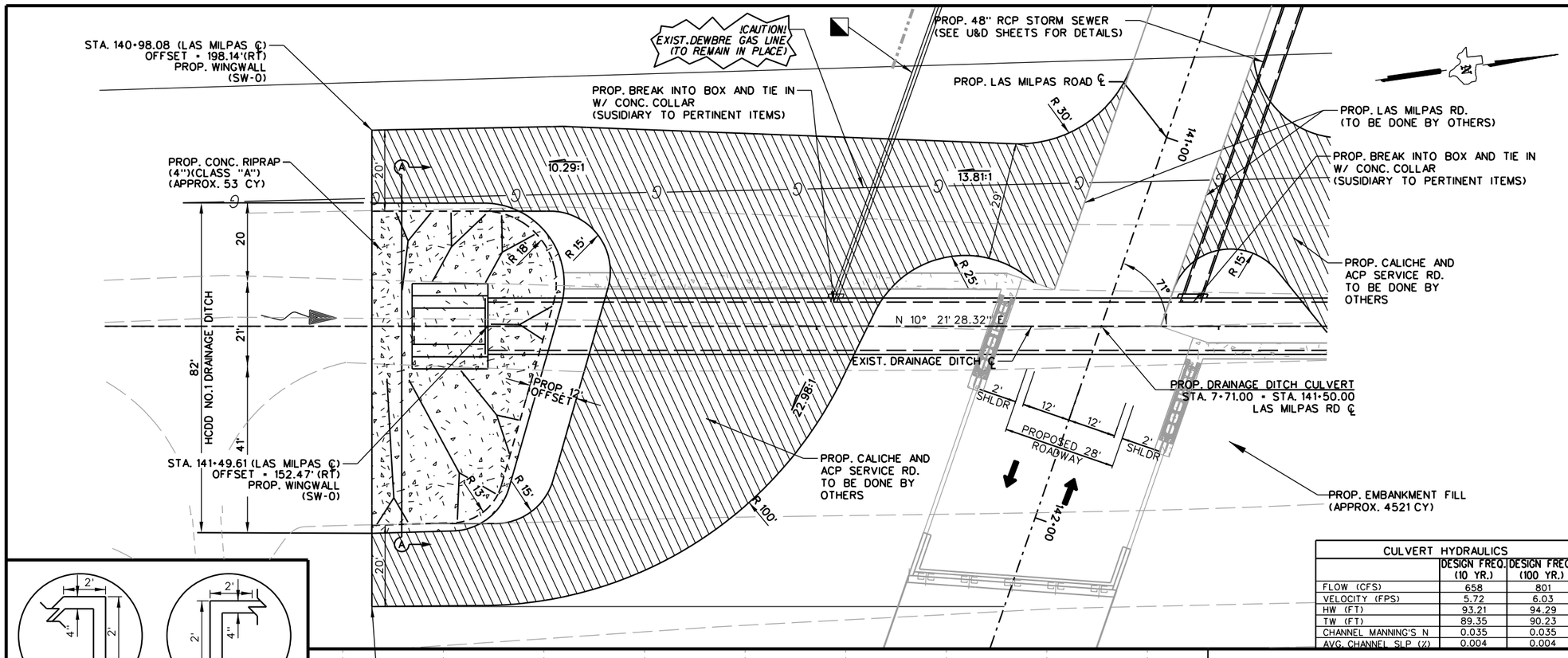
12/27/2021



SHEET SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
132	EMBANKMENT(FINAL)(DENS CONT)(TY C)	CY	8321
400	STRUCT. EXCAVATION (SPL)	CY	181
402	TRENCH EXCAVATION PROTECTION	LF	288
432	RIPRAP (CONC.)(4")	CY	97
462	CONC. BOX (12'X8')	LF	288
466	WINGWALL (SW-0)(HW=10')	EA	2

LEGEND:

DIRECTION OF FLOW

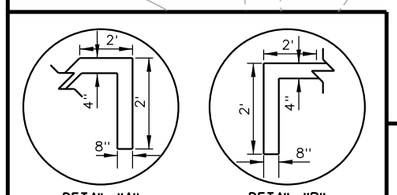
SEE U&D SHEETS FOR DETAILS

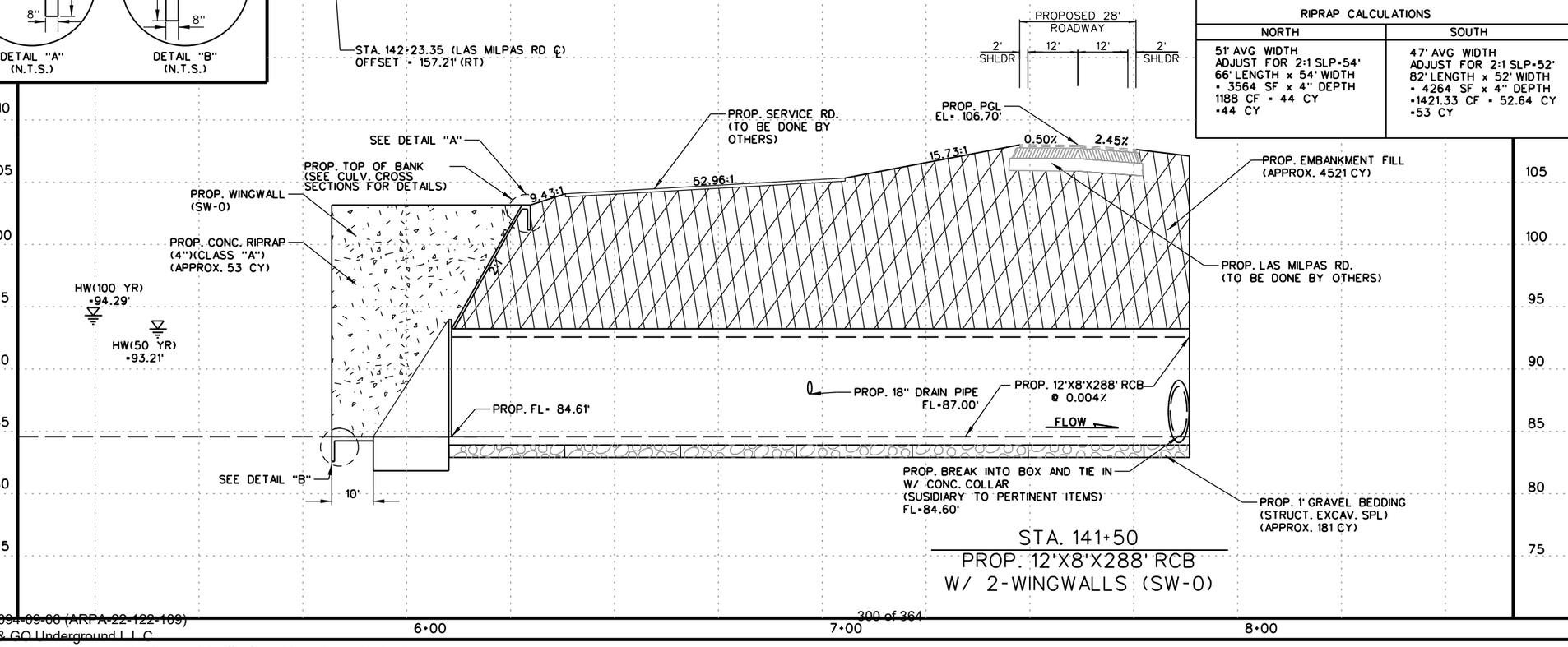
FOR CONTRACTORS INFOMATION ONLY, NON PAY

NOTES:

1. WHEN WORKING OUTSIDE THE ROW, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
2. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY HORIZONTAL AND VERTICAL INFORMATION.
3. CULVERT STRUCTURES TO BE DONE IN PHASE I. IF CONTRACTOR OPTS TO DO IT IN ANY OTHER PHASE, ANY SPECIAL SHORING REQUIRED WILL BE SUBSIDIARY TO CULVERT ITEMS.
4. SEE ALIGNMENT DATA SHEET FOR PROP. CENTERLINE DATA.
5. CULVERT WAS ANALYZED USING FEDERAL HIGHWAY ADMINISTRATION'S, FHWA, "HY-8" SOFTWARE.

CULVERT HYDRAULICS		
	DESIGN FREQ. (10 YR.)	DESIGN FREQ. (100 YR.)
FLOW (CFS)	658	801
VELOCITY (FPS)	5.72	6.03
HW (FT)	93.21	94.29
TW (FT)	89.35	90.23
CHANNEL MANNING'S N	0.035	0.035
AVG. CHANNEL SLP (Z)	0.004	0.004





STA. 141+50
PROP. 12'X8'X288' RCB
W/ 2-WINGWALLS (SW-0)

RIPRAP CALCULATIONS	
NORTH	SOUTH
51' AVG WIDTH ADJUST FOR 2:1 SLP=54' 66' LENGTH x 54' WIDTH = 3564 SF x 4" DEPTH 1188 CF = 44 CY =44 CY	47' AVG WIDTH ADJUST FOR 2:1 SLP=52' 82' LENGTH x 52' WIDTH = 4264 SF x 4" DEPTH =1421.33 CF = 52.64 CY =53 CY

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED
PROFESSIONAL ENGINEER
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
CULVERT 1 LAYOUT
STA. 141+50

HOR 1"=30'
VER 1"=10'

SHEET 1 OF 6

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.		SHEET NO.
CK DN:		6	TEXAS			116
DW:		STATE DIST. NO	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
CK DW:							
TR:		PHR	HIDALGO	-	-	-	MILPAS
CK TR:							

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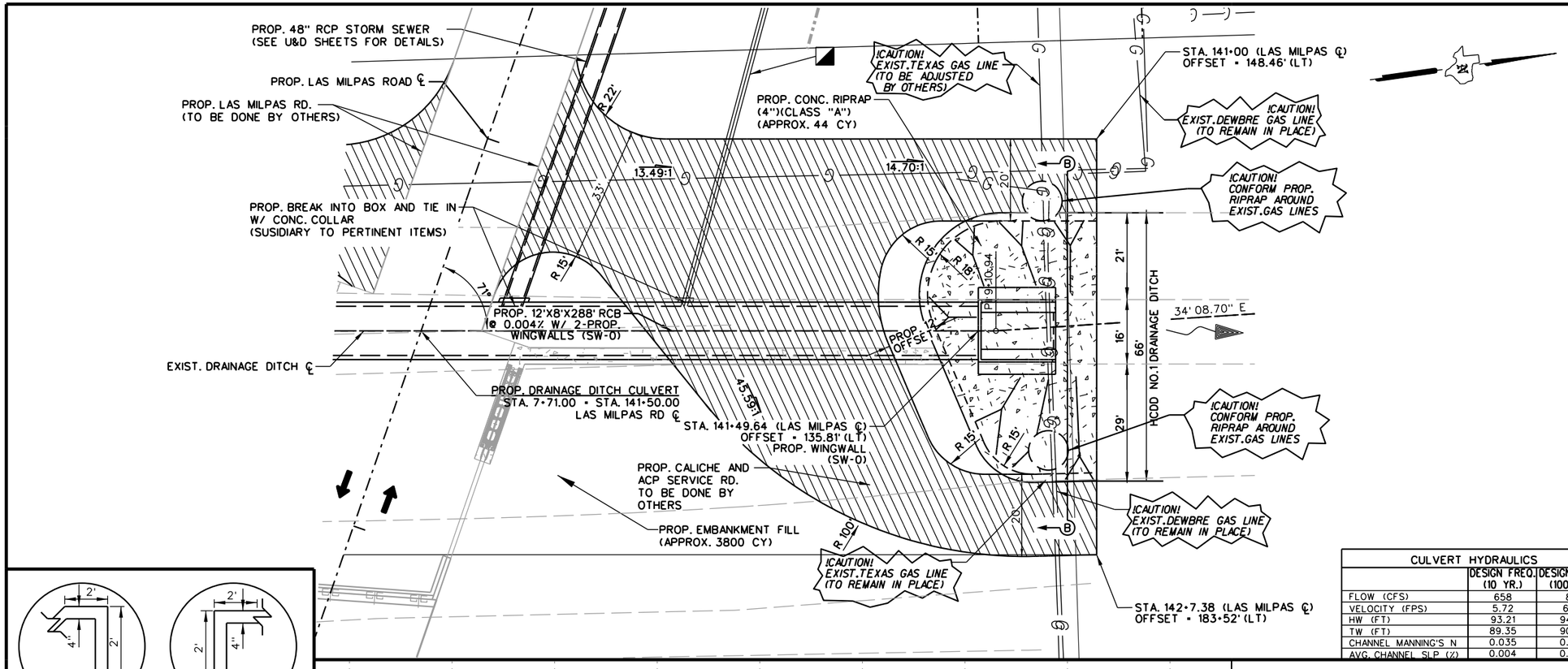
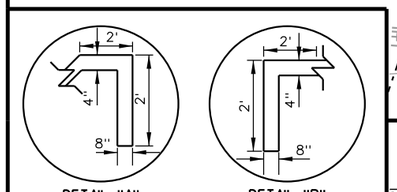
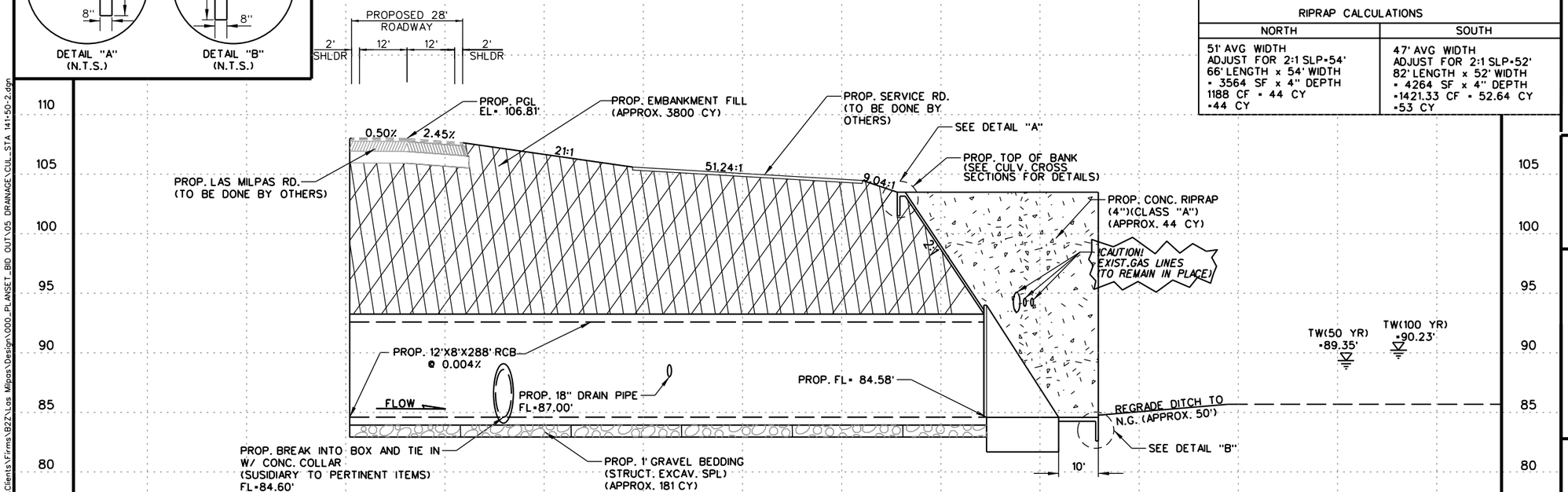
12/27/2021







STA. 141+50
PROP. 12'X8'X288' RCB
W/ 2-WINGWALLS (SW-0)

SHEET SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
USE CULV LAYOUT 1 OF 6 FOR QUANTITIES			

LEGEND:

DIRECTION OF FLOW

SEE U&D SHEETS FOR DETAILS

FOR CONTRACTORS INFOMATION ONLY, NON PAY

NOTES:

1. WHEN WORKING OUTSIDE THE ROW, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
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3. CULVERT STRUCTURES TO BE DONE IN PHASE I. IF CONTRACTOR OPTS TO DO IT IN ANY OTHER PHASE, ANY SPECIAL SHORING REQUIRED WILL BE SUBSIDIARY TO CULVERT ITEMS.
4. SEE ALIGNMENT DATA SHEET FOR PROP. CENTERLINE DATA.
5. CULVERT WAS ANALYZED USING FEDERAL HIGHWAY ADMINISTRATION'S, FHWA, "HY-8" SOFTWARE.

CULVERT HYDRAULICS		
	DESIGN FREQ. (10 YR.)	DESIGN FREQ. (100 YR.)
FLOW (CFS)	658	801
VELOCITY (FPS)	5.72	6.03
HW (FT)	93.21	94.29
TW (FT)	89.35	90.23
CHANNEL MANNING'S N	0.035	0.035
AVG. CHANNEL SLP (Z)	0.004	0.004

RIPRAP CALCULATIONS	
NORTH	SOUTH
51' AVG WIDTH ADJUST FOR 2:1 SLP=54' 66' LENGTH x 54' WIDTH = 3564 SF x 4" DEPTH 1188 CF = 44 CY =44 CY	47' AVG WIDTH ADJUST FOR 2:1 SLP=52' 82' LENGTH x 52' WIDTH = 4264 SF x 4" DEPTH =1421.33 CF = 52.64 CY =53 CY

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
CULVERT 1 LAYOUT
STA. 141+50

HOR 1"=30'
VER 1"=10'

SHEET 2 OF 6

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:		6	TEXAS				117
DW:		STATE DIST. NO	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-	MILPAS
TR:							
CK TR:							

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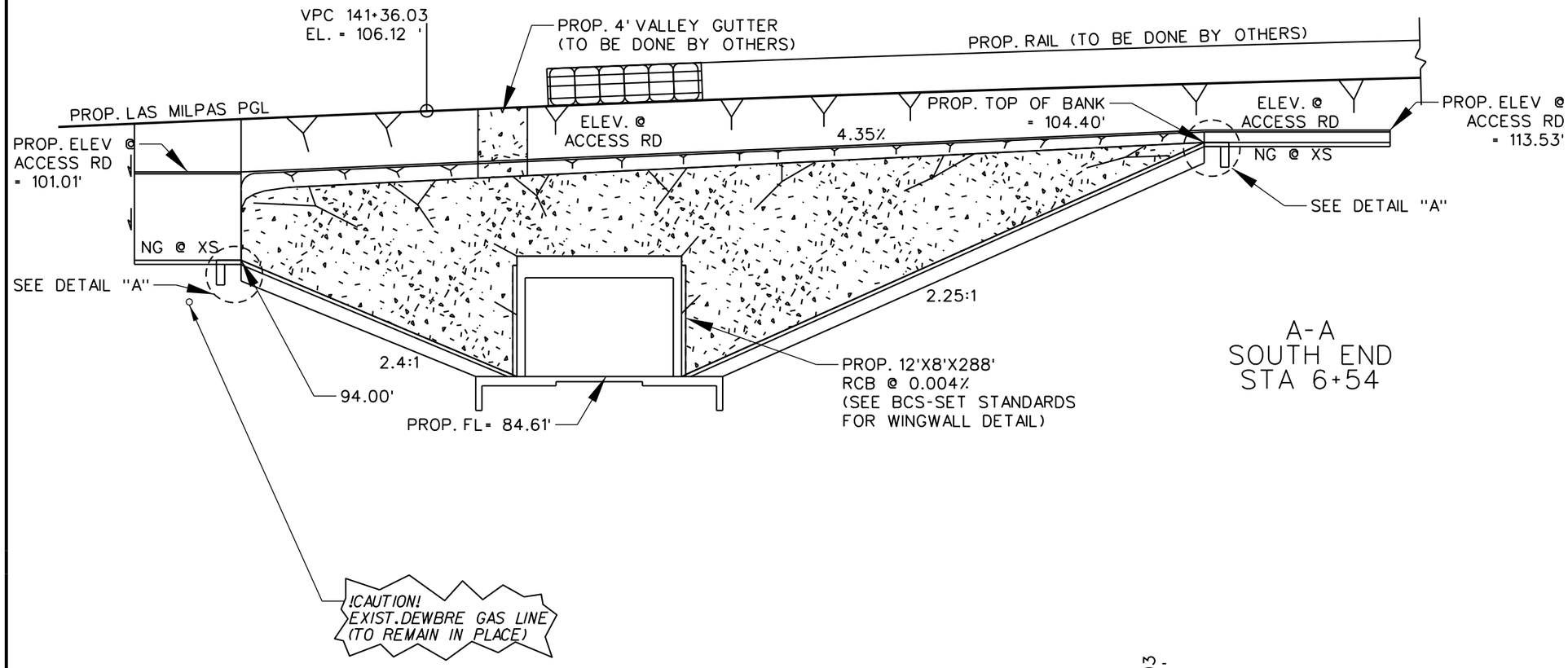
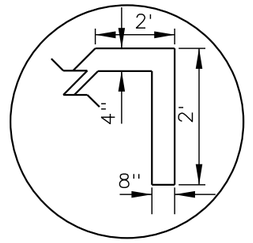
12/27/2021



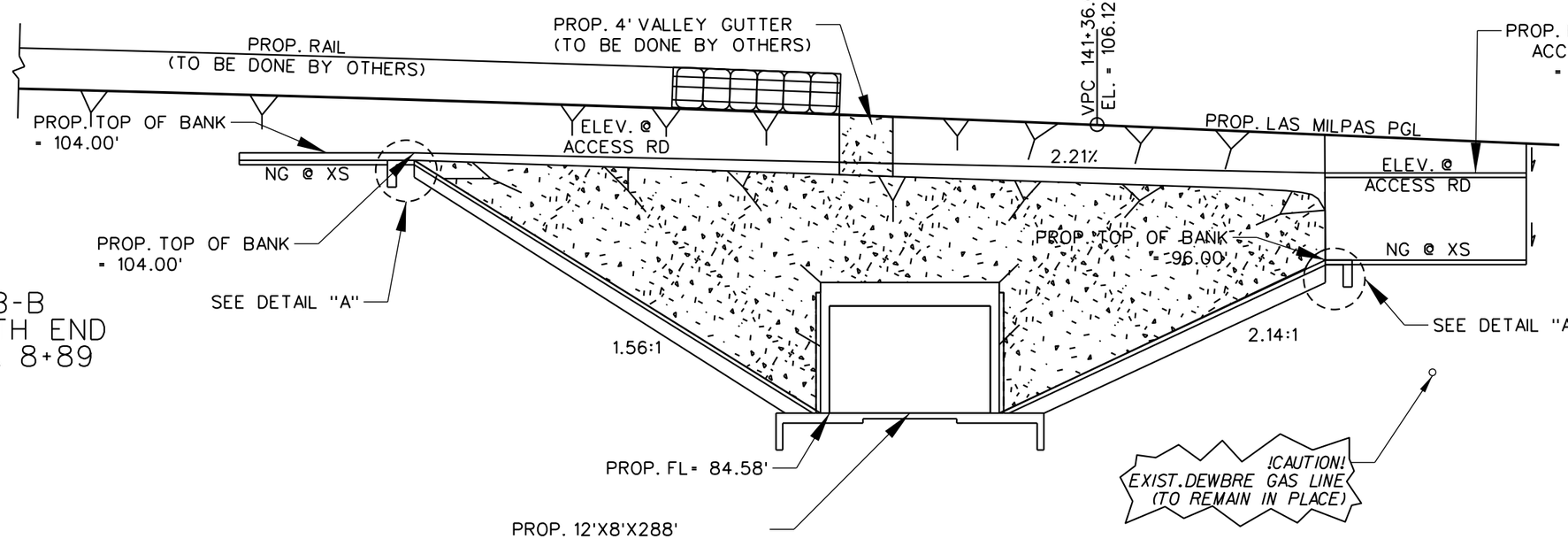
A-A
SOUTH END
STA 6+54

LEGEND

PROP. CONC. RIPRAP



DETAIL "A"
(N.T.S.)



B-B
NORTH END
STA 8+89

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
CULVERT 1 LAYOUT
STA. 141+50
(CROSS SECTION)

HOR 1"=10'
VER 1"=10'

SHEET 3 OF 6

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.			SHEET NO.
CK DN:		6	TEXAS				118
DW:		STATE DIST. NO	COUNTY	SECTION	JOB NO.		HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-	MILPAS
TR:							
CK TR:							

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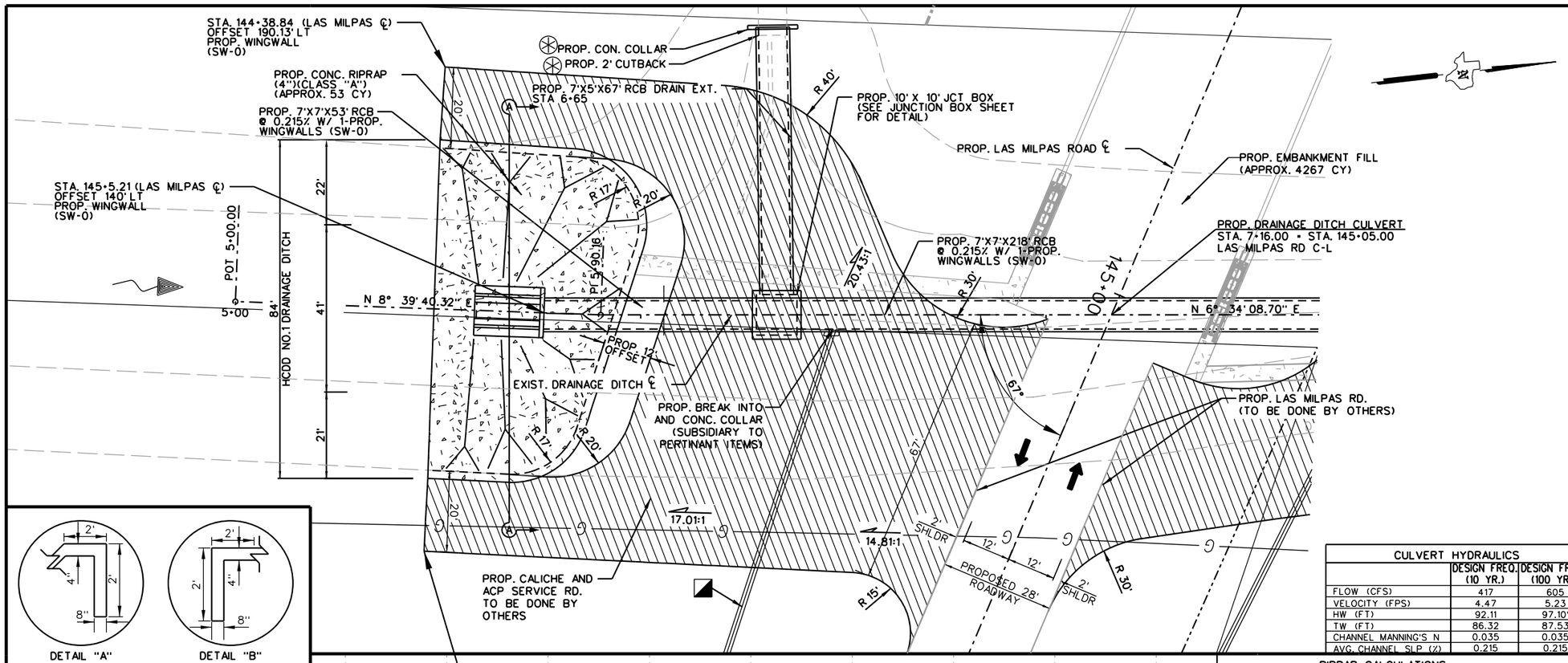

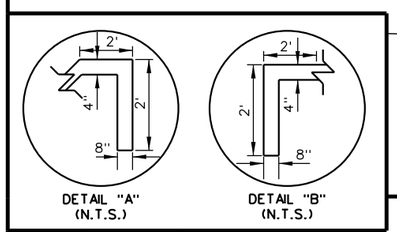

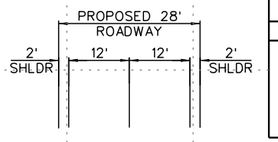

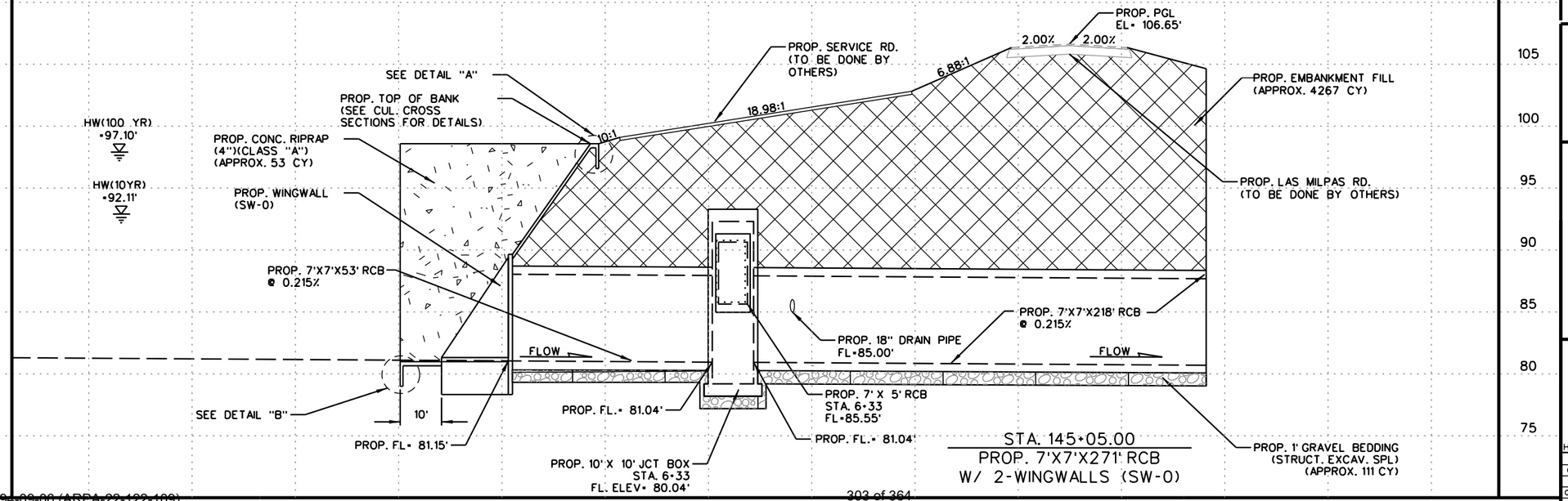

STA. 145+05.00
PROP. 7'X7'X271' RCB
W/ 2-WINGWALLS (SW-0)

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
132	EMBANKMENT(FINAL)(DENS CONT)(TY C)	CY	8137
400	STRUCT. EXCAVATION (SPL)	CY	111
402	TRENCH EXCAVATION PROTECTION	CY	271
432	RIPRAP (CONC.)(4")	CY	95
462	CONC. BOX (7'X5')	LF	67
462	CONC. BOX (7'X7')	LF	271
465	CONC. JCT BOX (10' X 10')	EA	1
466	WINGWALL (SW-0) (HW=9')	EA	2

LEGEND:

DIRECTION OF FLOW

SEE U&D SHEETS FOR DETAILS

FOR CONTRACTORS INFOMATION ONLY, NON PAY

NOTES:
1. WHEN WORKING OUTSIDE THE ROW, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
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3. CULVERT STRUCTURES TO BE DONE IN PHASE I. IF CONTRACTOR OPTS TO DO IT IN ANY OTHER PHASE, ANY SPECIAL SHORING REQUIRED WILL BE SUBSIDIARY TO CULVERT ITEMS.
4. SEE ALIGNMENT DATA SHEET FOR PROP. CENTERLINE DATA.
5. CULVERT WAS ANALYZED USING FEDERAL HIGHWAY ADMINISTRATION'S, FHWA, "HY-8" SOFTWARE.

CULVERT HYDRAULICS	DESIGN FREQ. (10 YR.)	DESIGN FREQ. (100 YR.)
FLOW (CFS)	417	605
VELOCITY (FPS)	4.47	5.23
HW (FT)	92.11	97.10'
TW (FT)	86.32	87.53
CHANNEL MANNING'S N	0.035	0.035
AVG. CHANNEL SLP (Z)	0.215	0.215

RIPRAP CALCULATIONS	
NORTH	SOUTH
40' AVG WIDTH ADJUST FOR 2:1 SLP=45' 60' LENGTH x 45' WIDTH = 2700 SF x 4" DEPTH =900 CF = 33.3 CY =34 CY	48' AVG WIDTH ADJUST FOR 2:1 SLP=51' 84' LENGTH x 51' WIDTH = 4284 SF x 4" DEPTH =1428 CF = 52.8 CY =53 CY

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
CULVERT LAYOUT 2
STA. 145+05.00

VERTICAL:1"=30'
HORIZONTAL:1"=10'

SHEET 4 OF 6

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.		SHEET NO.
CK DN:		6	TEXAS			119
DW:		STATE DIST. NO	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-	MILPAS
TR:							
CK TR:							

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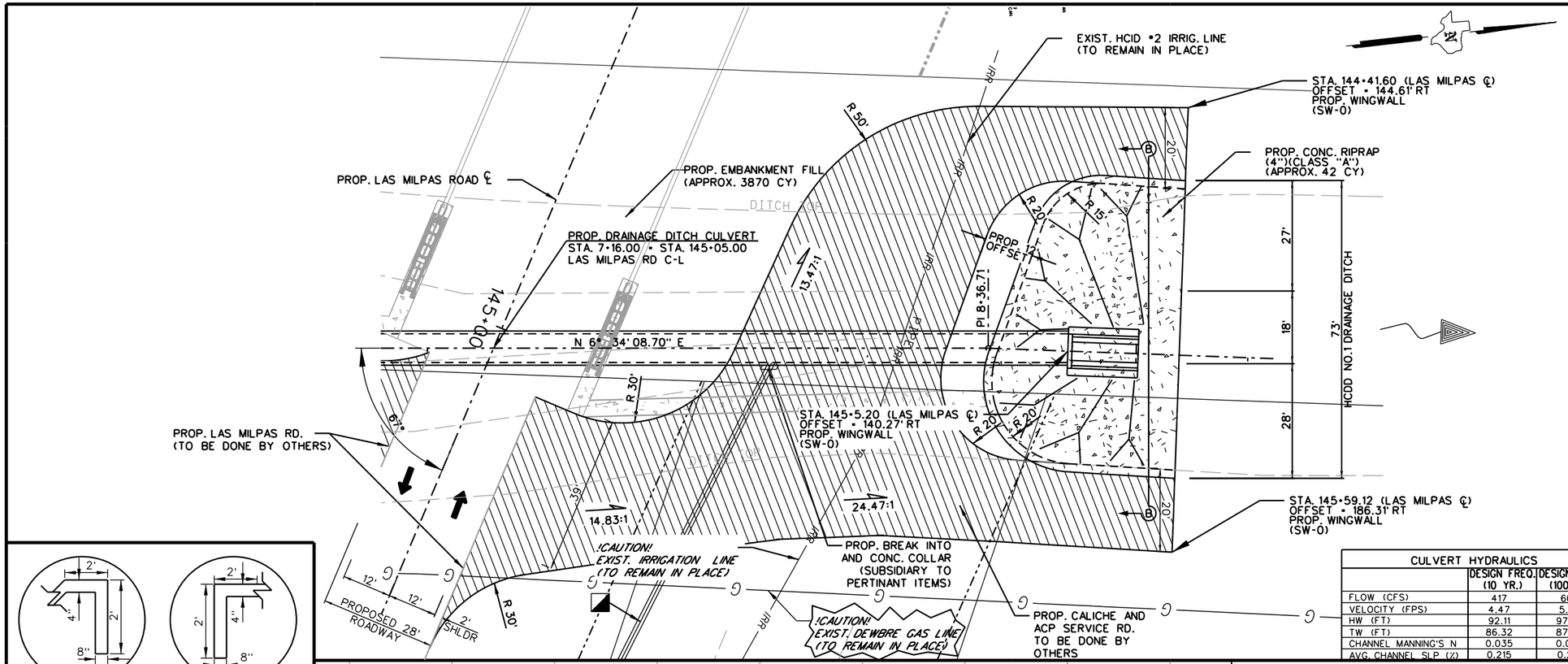
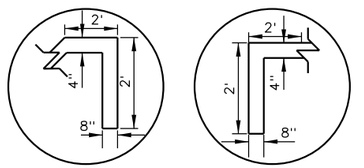
12/27/2021



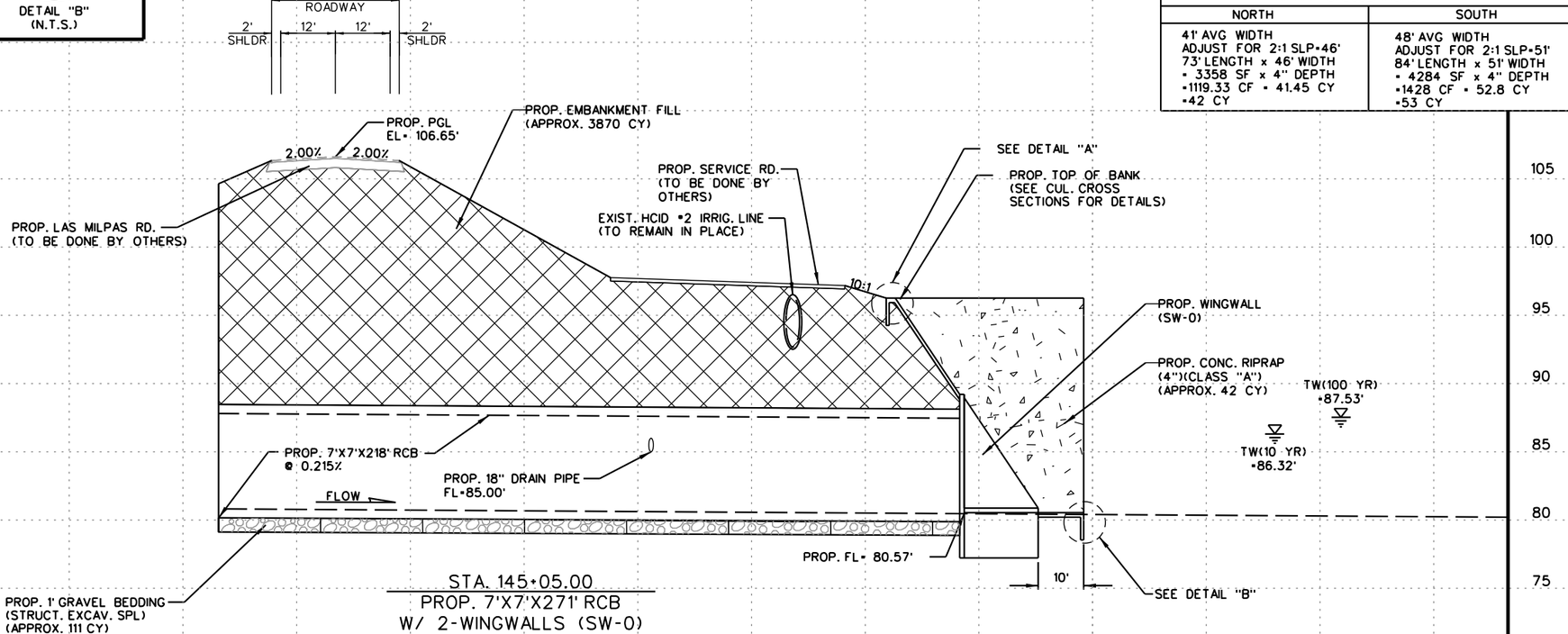


DETAIL "A"
(N.T.S.)

DETAIL "B"
(N.T.S.)

CULVERT HYDRAULICS		
	DESIGN FREQ. (10 YR.)	DESIGN FREQ. (100 YR.)
FLOW (CFS)	417	605
VELOCITY (FPS)	4.47	5.23
HW (FT)	92.11	97.10'
TW (FT)	86.32	87.53
CHANNEL MANNING'S N	0.035	0.035
AVG. CHANNEL SLP (Z)	0.215	0.215

RIPRAP CALCULATIONS	
NORTH	SOUTH
41' AVG WIDTH ADJUST FOR 2:1 SLP=46' 73' LENGTH x 46' WIDTH = 3358 SF x 4" DEPTH =1119.33 CF = 41.45 CY =42 CY	48' AVG WIDTH ADJUST FOR 2:1 SLP=51' 84' LENGTH x 51' WIDTH = 4284 SF x 4" DEPTH =1428 CF = 52.8 CY =53 CY



STA. 145+05.00
PROP. 7'X7'X271' RCB
W/ 2-WINGWALLS (SW-0)

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
USE CULV LAYOUT 4 OF 6 FOR QUANTITIES			

LEGEND:

DIRECTION OF FLOW

SEE U&D SHEETS FOR DETAILS

FOR CONTRACTORS INFOMATION ONLY, NON PAY

NOTES:

1. WHEN WORKING OUTSIDE THE ROW, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
2. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY HORIZONTAL AND VERTICAL INFORMATION.
3. CULVERT STRUCTURES TO BE DONE IN PHASE I. IF CONTRACTOR OPTS TO DO IT IN ANY OTHER PHASE, ANY SPECIAL SHORING REQUIRED WILL BE SUBSIDIARY TO CULVERT ITEMS.
4. SEE ALIGNMENT DATA SHEET FOR PROP. CENTERLINE DATA.
5. CULVERT WAS ANALYZED USING FEDERAL HIGHWAY ADMINISTRATION'S, FHWA, "HY-8" SOFTWARE.

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
LICENSED
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
CULVERT LAYOUT 2
STA. 145+05.00

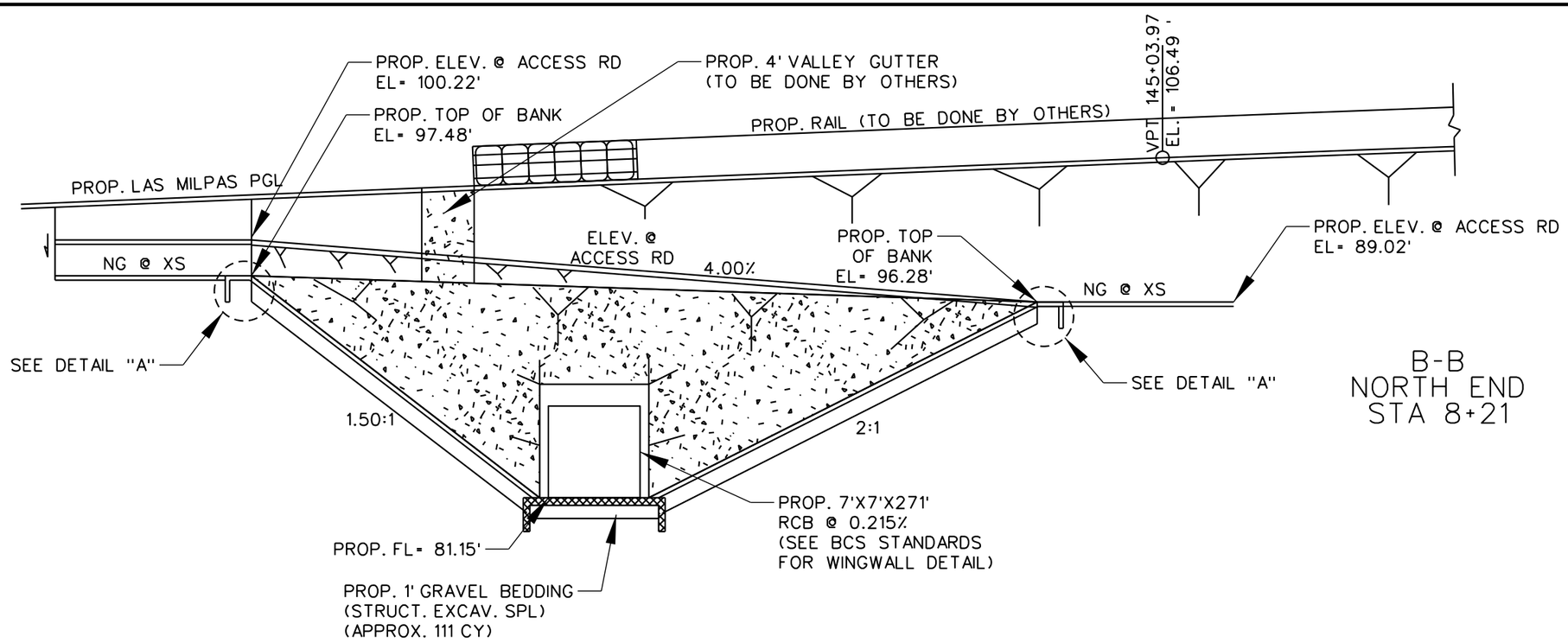
VERTICAL:1"=30'
HORIZONTAL:1"=10'

SHEET 5 OF 6

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.		SHEET NO.
CK DN:		6	TEXAS			120
DW:		STATE DIST. NO	COUNTY	CONTROL SECTION	JOB NO.	HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	MILPAS
TR:						
CK TR:						

12/27/2021

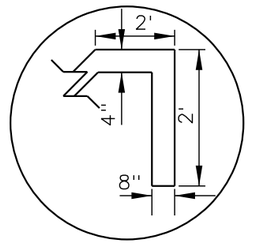
P:\Clients\Firms\B2Z\Las Milpas\Design\000_PLANSET_BID OUT\05 DRAINAGE\CUL_STA 145+05-2.dgn



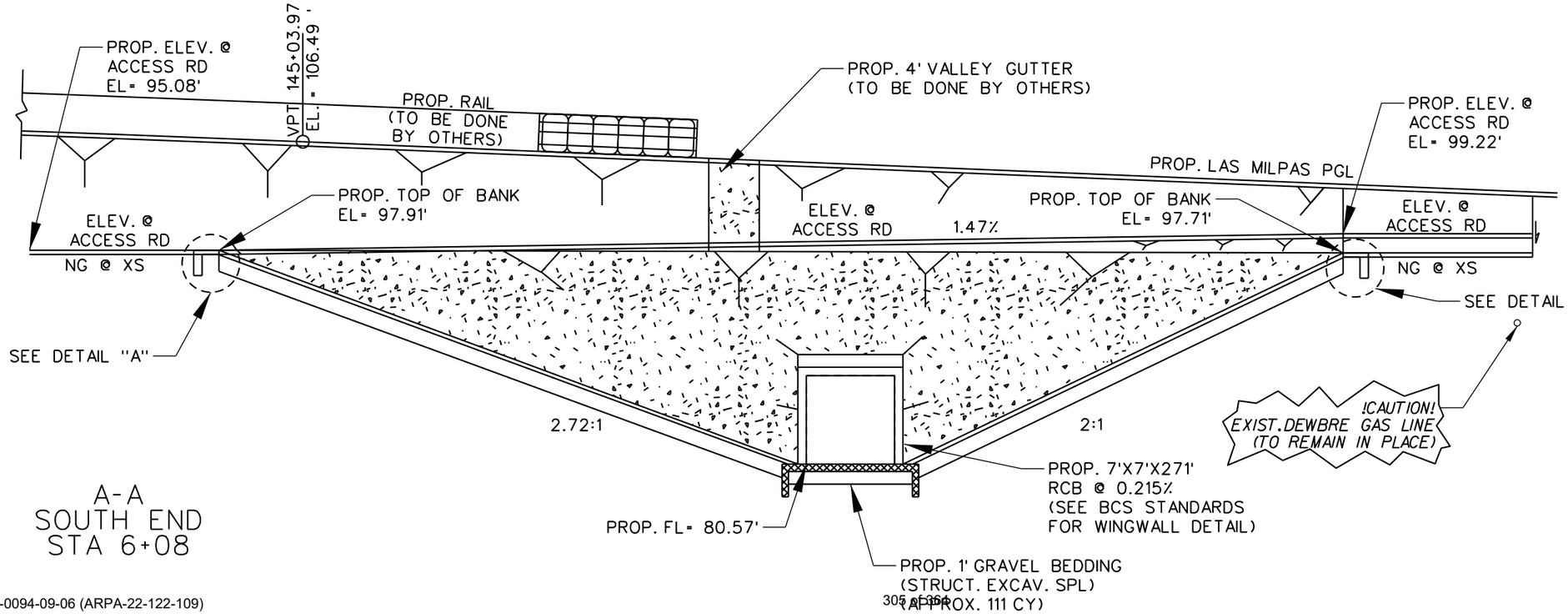
B-B
NORTH END
STA 8+21

LEGEND

PROP. CONC. RIPRAP



DETAIL "A"
(N.T.S.)



A-A
SOUTH END
STA 6+08

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY
PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
CULVERT 2
CROSS SECTIONS

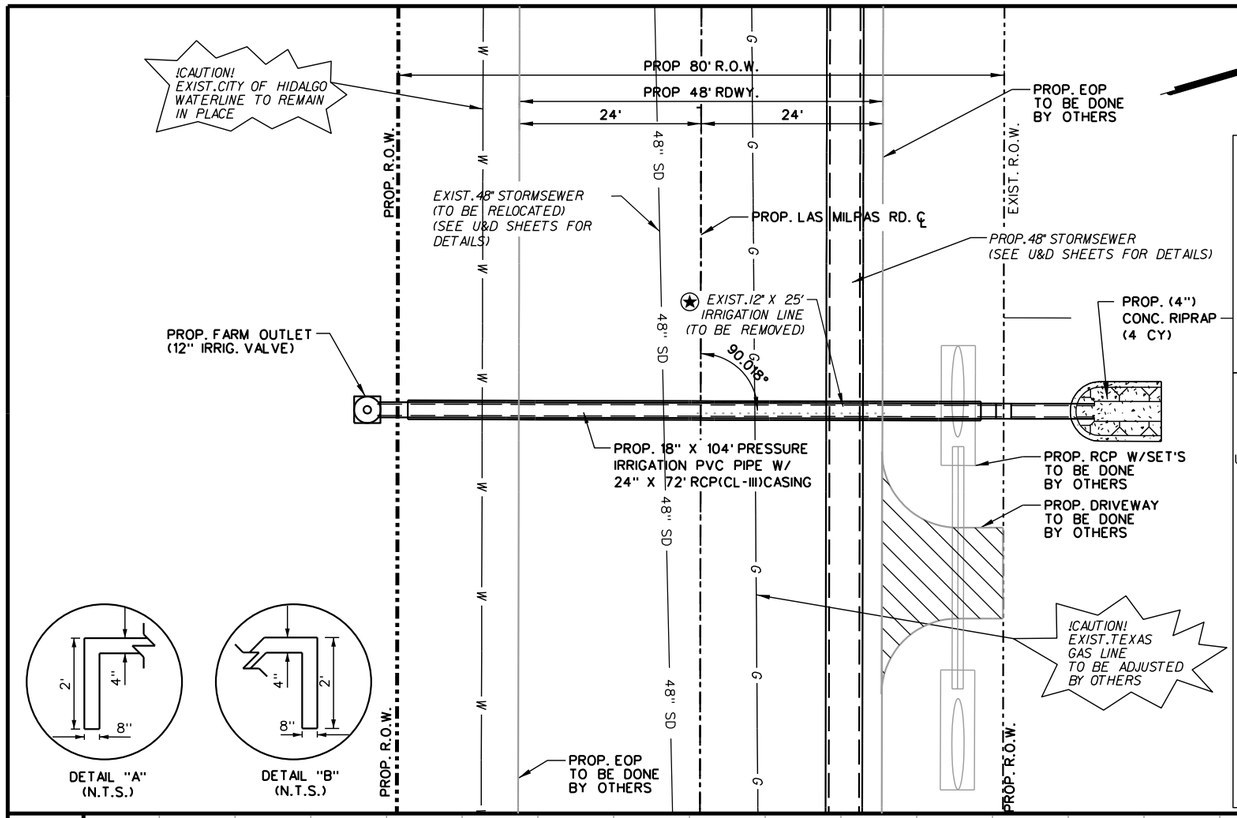
HOR 1"=10'
VER 1"=10'

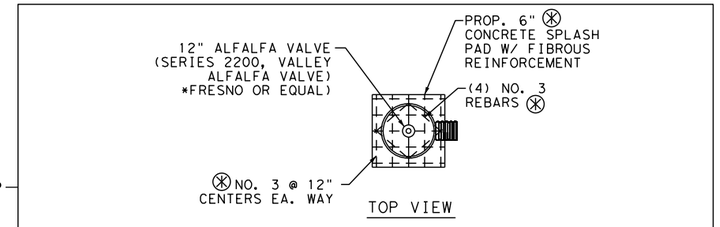
SHEET 6 OF 6

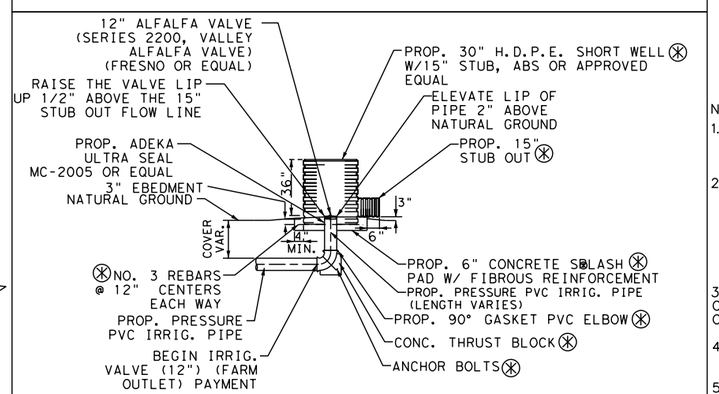
DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.		SHEET NO.
CK DN:		6	TEXAS			121
DW:		STATE DIST. NO	COUNTY	CONTROL SECTION JOB	JOB NO.	HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	MILPAS
TR:						
CK TR:						

P:\Clients\Firms\B2Z\Las Milpas\Design\000_PLANSET_BID OUT\05 DRAINAGE\LAS MILPAS_CUL_XS.dgn
12/27/2021

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"







TYPICAL FARM OUTLET
(TO BE PAID UNDER ITEM 1007 12" IRR VALVE)

SHEET SUMMARY

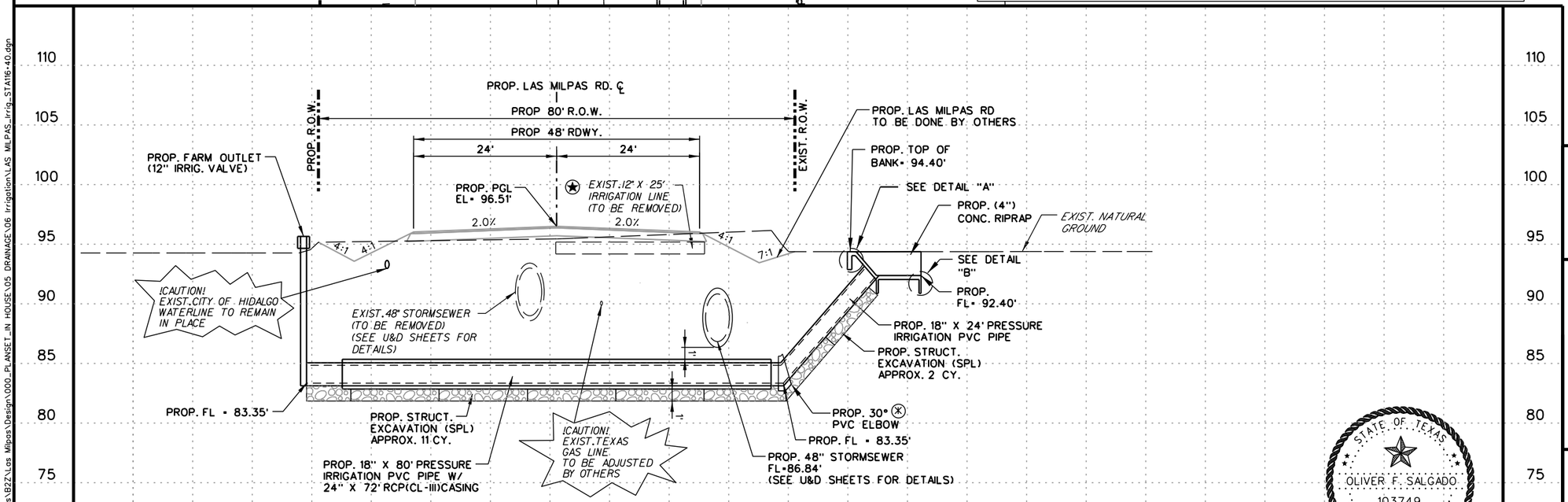
ITEM	DESCRIPTION	UNIT	QUANTITY
⊛ 400	STRUCTURAL EXCAVATION	CY	164
400	STRUCTURAL EXCAV. (SPL)	CY	13
400	SAND BACKFILL	CY	36
402	TRENCH EXCAV. PROTECTION	LF	104
432	RIPRAP CONC (4")	CY	4
464	RCP CL III (24") CASING	LF	72
496	REMOVE STRUCTURE (PIPE)	LF	25
1007	IRRIGATION VALVE (12")	EA	1
1008	PRESSURE PVC IRRIG. PIPE(18")	LF	104

LEGEND

- SEE P&P SHEETS FOR DETAILS
- ⊛ NON-PAY, SUBSIDIARY TO PERTINENT BID ITEMS.
- ⊕ TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- ★ TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTE:

1. THE CONTRACTOR WILL COORDINATE WITH HCID•2. 48 HOURS PRIOR TO ANY WORK DONE ON OR NEAR THE IRRIGATION STRUCTURES.
2. PRIOR TO WORKING OUTSIDE THE ROW THE CONTRACTOR SHALL CONTACT THE AREA ENGINEER, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
3. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO CONSTRUCTION.
4. ALL PVC ELBOWS, AND CONNECTIONS SHALL BE SUBSIDIARY TO PERTINENT BID ITEMS.
5. THE CONTRACTOR SHALL CONFIRM THAT THE TOP ELEVATION ON THE PROPOSED STANDPIPES IS AT AT THE SAME ELEVATION AS THE EXIST. STANDPIPE



STA. 116+40
PROP. 18" X 104' PRESSURE IRRIGATION PVC PIPE W/ 24" X 72' RCP (CL-III) CASING

12/27/2021

OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

B2Z ENGINEERING
TBPE FIRM NO. F-11187

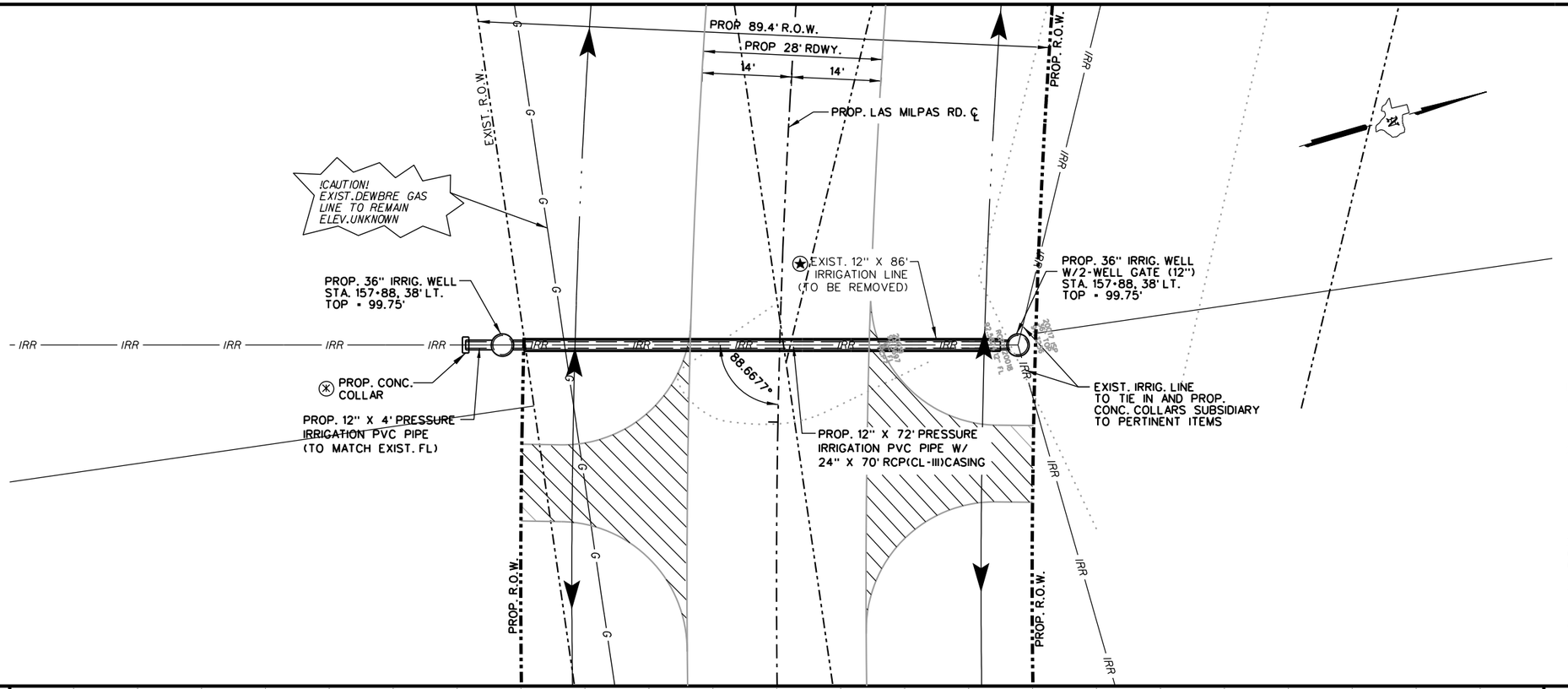
HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

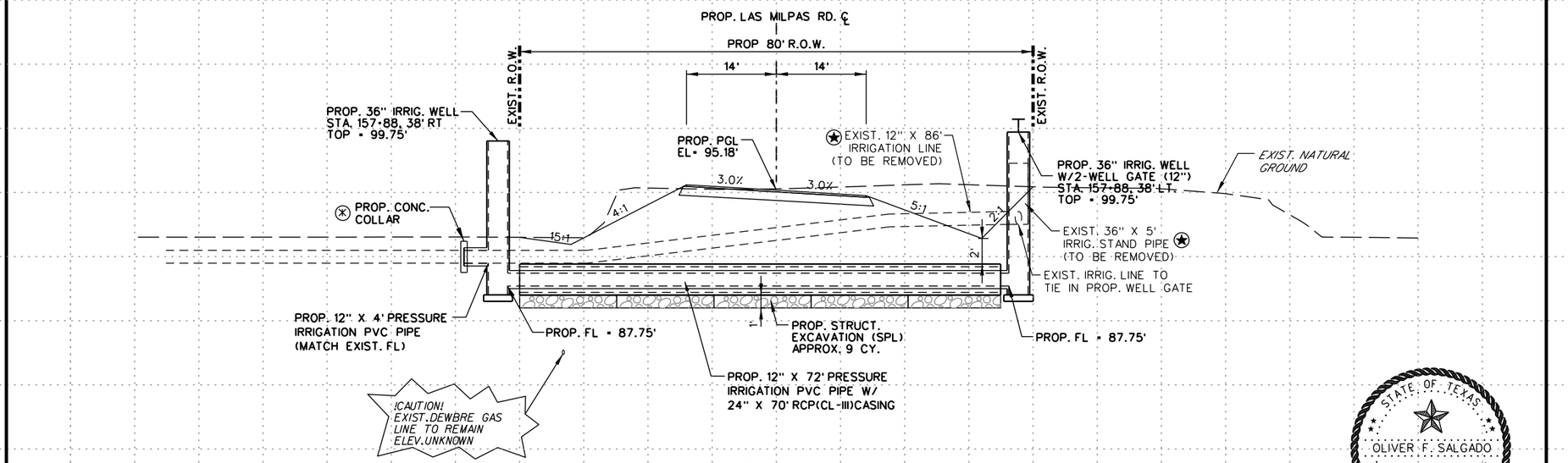
LAS MILPAS ROAD IRRIGATION LAYOUT STA. 116+40

SCALE: HOR:1"=20' VER:1"=10'

SHEET 1 OF 2

DN:	FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:	6	TEXAS					122
DW:	STATE DIST. NO	COUNTY	CONTROL	SECTION	JOB NO.		HIGHWAY NO.
CK DW:	PHR	HIDALGO	-	-	-		MILPAS
TR:							
CK TR:							





STA. 157+88
PROP. 12" X 76' PRESSURE
IRRIGATION PVC PIPE W/
24" X 70' RCP (CL-III) CASING

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
⊛ 400	STRUCTURAL EXCAVATION	CY	69
400	STRUCTURAL EXCAV. (SPL)	CY	9
400	SAND BACKFILL	CY	23
402	TRENCH EXCAV. PROTECTION	LF	76
464	RCP CL III (24") CASING	LF	70
496	REMOVE STRUCTURE (PIPE)	LF	91
1007	IRRIGATION WELL (36")	EA	2
1007	IRRIGATION GATE (12")	EA	2
1008	PRESSURE PVC IRRIG. PIPE(12")	LF	76

LEGEND

- SEE P&P SHEETS FOR DETAILS
- ⊛ NON-PAY, SUBSIDIARY TO PERTINENT BID ITEMS.
- ⊕ TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- ★ TO BE REMOVED UNDER ITEM 496. INCLUDES PAYMENT FOR REMOVAL OF ALL APPURTENANCES.
- LIMITS OF PROP. CUT & RESTORE (ITEM 400)

NOTE:

1. THE CONTRACTOR WILL COORDINATE WITH HCID#2. 48 HOURS PRIOR TO ANY WORK DONE ON OR NEAR THE IRRIGATION STRUCTURES.
2. PRIOR TO WORKING OUTSIDE THE ROW THE CONTRACTOR SHALL CONTACT THE AREA ENGINEER, CAUTION SHALL BE TAKEN NOT TO DAMAGE EXISTING FENCES, TREES, ETC. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS WHEN WORKING OUTSIDE THE ROW. ANY DAMAGES DONE TO THEIR PROPERTY SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
3. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY UTILITIES PRIOR TO CONSTRUCTION.
4. ALL PVC ELBOWS, AND CONNECTIONS SHALL BE SUBSIDIARY TO PERTINENT BID ITEMS.
5. THE CONTRACTOR SHALL CONFIRM THAT THE TOP ELEVATION ON THE PROPOSED STANDPIPES IS AT AT THE SAME ELEVATION AS THE EXIST. STANDPIPE

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

STATE OF TEXAS
OLIVER F. SALGADO
103749
PROFESSIONAL ENGINEER
12/27/2021

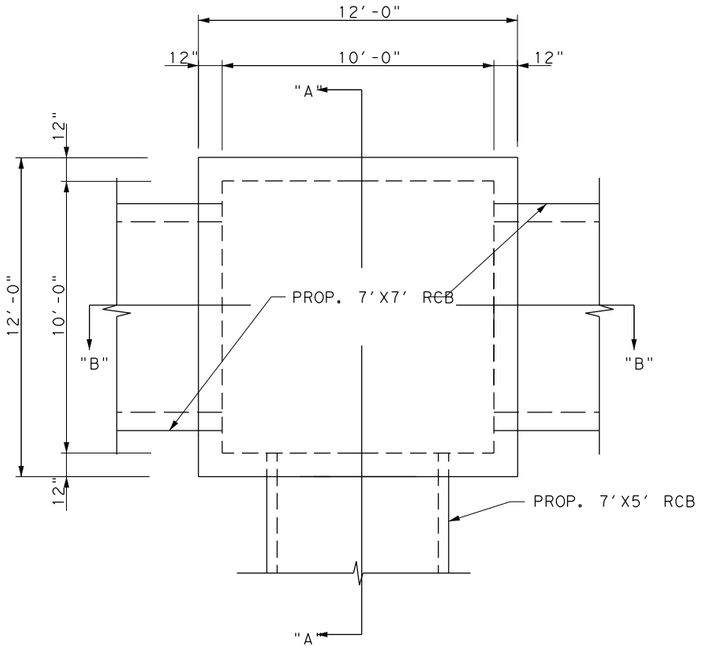
LAS MILPAS ROAD
IRRIGATION LAYOUT
STA. 157+88

SCALE:
HOR:1"=20'
VER:1"=10'

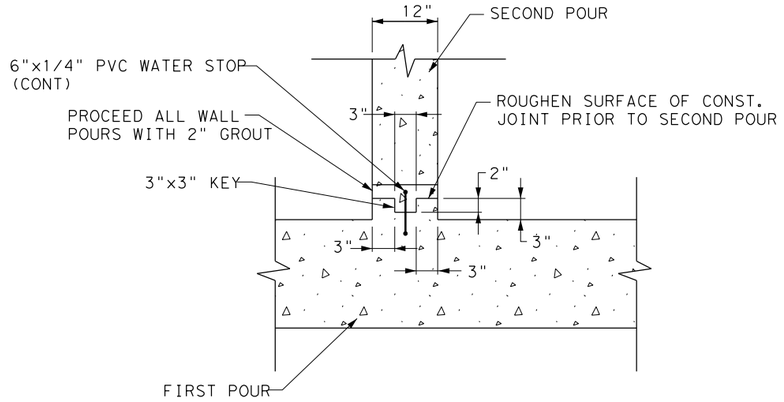
SHEET 2 OF 2

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					123
DW:		STATE DIST. NO	COUNTY	CONTROL	SECTION	JOB NO.		HIGHWAY NO.
CK DW:		PHR	HIDALGO	-	-	-		MILPAS
TR:								
CK TR:								

12/27/2021 P:\Clients\Firms\B2Z\Las Milpas\Design\000_PLANSET_IN HOUSE\05 DRAINAGE\06 Irrigation\LAS MILPAS_irrig.dgn



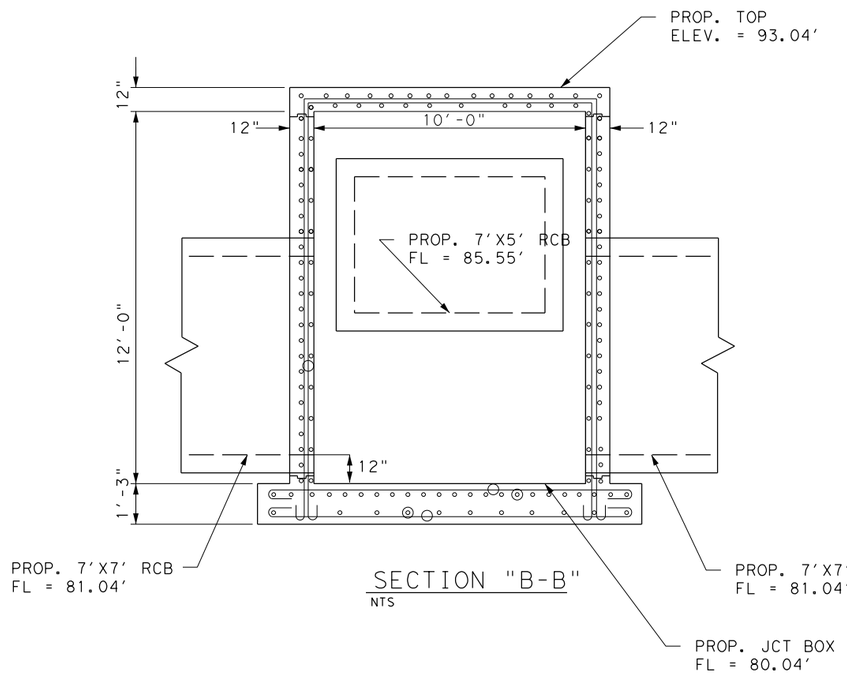
TOP VIEW
NTS



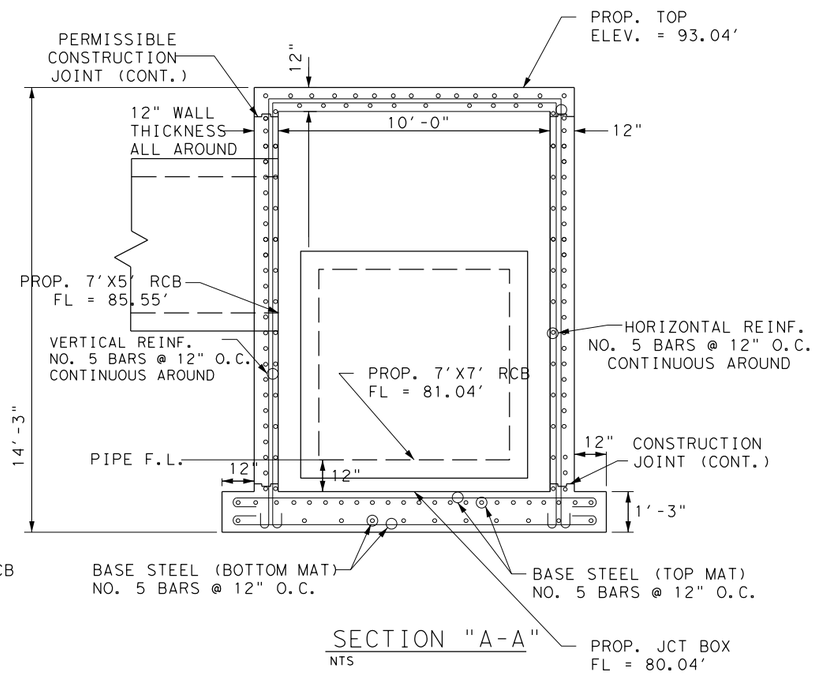
CONSTRUCTION JOINT & WATERSTOP DETAIL
NTS

STEEL NOTES

1. CHAMFER ALL EXPOSED CONC. CORNERS
2. REINFORCING STEEL CLEARANCES
   FACES EXPOSED TO WATER= 2-1/2"
   FACES EXPOSED TO EARTH= 3"
   FACES EXPOSED TO AIR= 2"
3. LAP OR ANCHOR ALL STEEL A MINIMUM OF 30 DIA.'S ALL HORZ. STEEL CONTINUOUS AROUND CORNERS.
4. ALL REINFORCING STEEL TO BE 60K
5. CONCRETE TO HAVE COMPRESSIVE STRENGTH OF 3000 P.S.I. AT 28 DAYS



SECTION "B-B"
NTS



SECTION "A-A"
NTS

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
10' X 10'
JUNCTION BOX DETAIL

NTS

DN:		FED. RD. DIV. NO.	STATE	PROJECT NO.				SHEET NO.
CK DN:		6	TEXAS					124
DW:		STATE DIST. NO.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.		HIGHWAY NO.
CK DW:								
TR:		PHR	HIDALGO	-	-	-		MILPAS
CK TR:								

TYPICAL 10' X 10' JUNCTION BOX DETAIL
NTS

12/27/2021 D:\Las Milpas\Design\000•PLANSET•BID OUT\05 DRAINAGE\05 Culvert\LAS MILPAS•CUL2•JCT BOX.dgn

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HODA 07-22-22)

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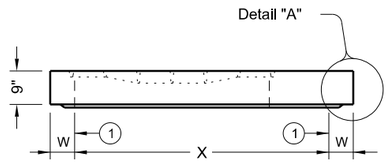
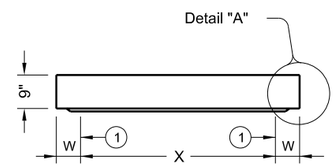
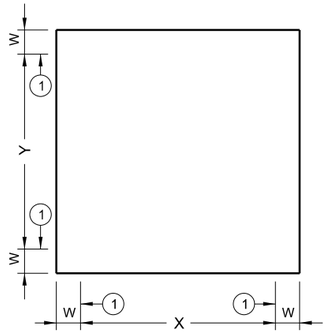


STYLE 'FG'



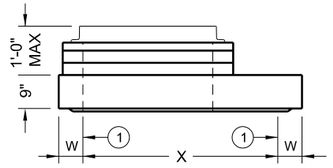
ELEVATION VIEW



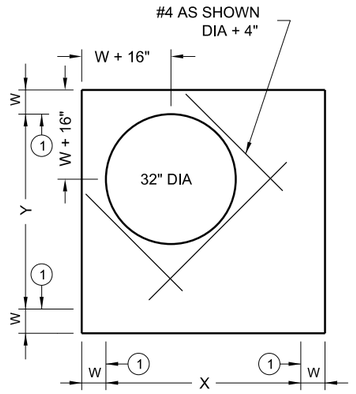
PLAN VIEW

NO OPENINGS

STYLE 'SL'



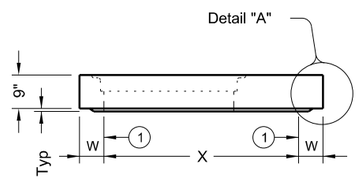
ELEVATION VIEW



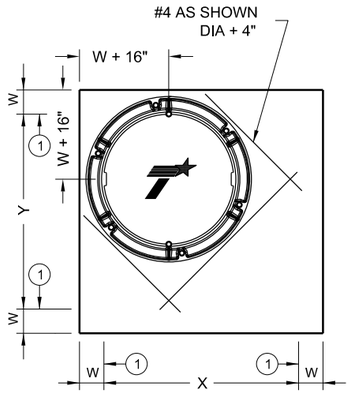
PLAN VIEW

SHIP LOOSE RING & COVER

STYLE 'RH'



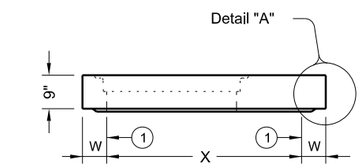
ELEVATION VIEW



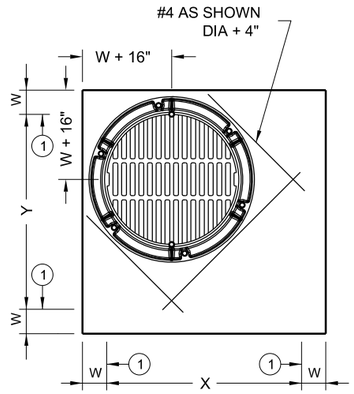
PLAN VIEW

32" DIA CAST-IN RING & COVER

STYLE 'RC'



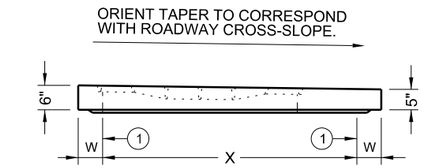
ELEVATION VIEW



PLAN VIEW

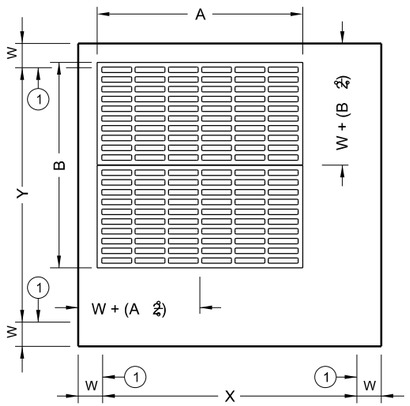
32" DIA CAST-IN RING & GRATE

STYLE 'RG'



STYLE 'SFG'

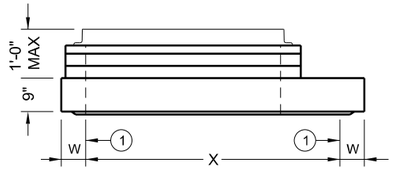
ELEVATION VIEW



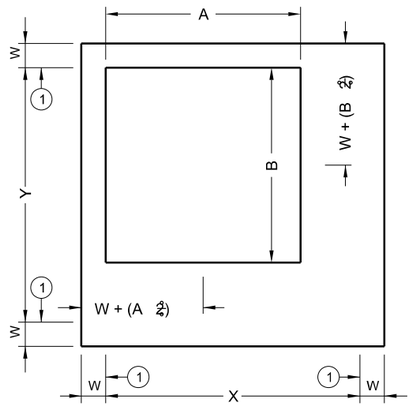
PLAN VIEW

CAST-IN FRAME & GRATE

STYLES 'FG' & 'SFG'



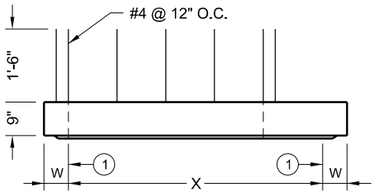
ELEVATION VIEW



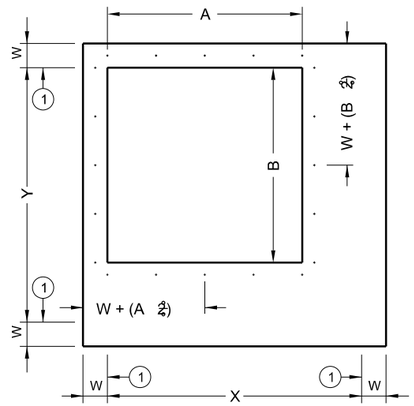
PLAN VIEW

SHIP LOOSE FRAME & GRATE

STYLE 'SH'



ELEVATION VIEW



PLAN VIEW

EXPOSED REBAR

STYLE 'S1'

(1) Matches inside face of wall of precast base or riser below inlet.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

PRECAST SLAB LID

PSL

FILE: presto05-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		125

DATE:
FILE:

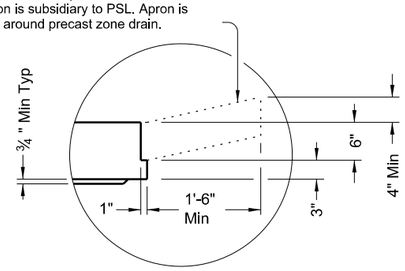
C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

HCDA 07-12-22

Style	Size (X x Y)	W (2)	A x B (nominal)	Short Span Reinf Steel Area	Long Span Reinf Steel Area
SL	3'x3'	6"	n/a	0.37 in□/ft	0.37 in□/ft
RH,RC,RG,SH,S1,FG	3'x3'	6"	3'x3' or 32" Dia	0.37 in□/ft	0.37 in□/ft
SFG	3'x3'	6"	3'x3'	0.32 in□/ft	0.32 in□/ft
SL	4'x4'	6"	n/a	0.34 in□/ft	0.34 in□/ft
RH,RC,RG,SH,S1,FG	4'x4'	6"	3'x3' or 32" Dia	0.41 in□/ft	0.41 in□/ft
SH,S1,FG	4'x4'	6"	4'x4'	0.41 in□/ft	0.41 in□/ft
SFG	4'x4'	6"	4'x4'	0.32 in□/ft	0.32 in□/ft
SL	3'x5'	6"	n/a	0.39 in□/ft	0.39 in□/ft
RH,RC,RG,SH,S1,FG	3'x5'	6"	3'x3' or 32" Dia	0.48 in□/ft	0.48 in□/ft
SH,S1,FG	3'x5'	6"	3'x5'	0.48 in□/ft	0.48 in□/ft
SFG	3'x5'	6"	3'x5'	0.32 in□/ft	0.32 in□/ft
SL	4'x5'	6"	n/a	0.42 in□/ft	0.42 in□/ft
RH,RC,RG,SH,S1,FG	4'x5'	6"	3'x3' or 32" Dia	0.42 in□/ft	0.42 in□/ft
SH,S1,FG	4'x5'	6"	4'x4'	0.63 in□/ft	0.63 in□/ft
SH,S1,FG	4'x5'	6"	3'x5'	0.66 in□/ft	0.66 in□/ft
SL	5'x5'	6"	n/a	0.36 in□/ft	0.36 in□/ft
RH,RC,RG,SH,S1,FG	5'x5'	6"	3'x3' or 32" Dia	0.43 in□/ft	0.43 in□/ft
SH,S1,FG	5'x5'	6"	4'x4'	0.63 in□/ft	0.63 in□/ft
SH,S1,FG	5'x5'	6"	3'x5'	0.63 in□/ft	0.63 in□/ft
SL	5'x6'	6"/8"	n/a	0.48 in□/ft	0.48 in□/ft
RH,RC,RG,SH,S1,FG	5'x6'	6"/8"	3'x3' or 32" Dia	0.48 in□/ft	0.48 in□/ft
SH,S1,FG	5'x6'	6"/8"	4'x4'	0.60 in□/ft	0.60 in□/ft
SH,S1,FG	5'x6'	6"/8"	3'x5'	0.60 in□/ft	0.60 in□/ft
SL	6'x6'	6"/8"	n/a	0.43 in□/ft	0.43 in□/ft
RH,RC,RG,SH,S1,FG	6'x6'	6"/8"	3'x3' or 32" Dia	0.56 in□/ft	0.56 in□/ft
SH,S1,FG	6'x6'	6"/8"	4'x4'	0.56 in□/ft	0.56 in□/ft
SH,S1,FG	6'x6'	6"/8"	3'x5'	0.59 in□/ft	0.59 in□/ft
SL	8'x8'	8"/10"	n/a	0.45 in□/ft	0.45 in□/ft
RH,RC,RG,SH,S1,FG	8'x8'	8"/10"	3'x3' or 32" Dia	0.45 in□/ft	0.45 in□/ft
SH,S1,FG	8'x8'	8"/10"	4'x4'	0.45 in□/ft	0.45 in□/ft
SH,S1,FG	8'x8'	8"/10"	3'x5'	0.45 in□/ft	0.45 in□/ft

(2) See sheet PDD for corresponding wall thickness (W) of base unit or riser.

Construct cast-in-place reinforced concrete apron, when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PSL. Apron is 1'-6" Min width around precast zone drain.



DETAIL "A"

(Reinforcing not shown for clarity)

When an apron is to be cast around PSL, use detail above to create an apron ledge on all 4 sides.

FABRICATION NOTES:

1. Locate penetration (Style 'RH'), ring and cover (Style 'RC'), ring and grate (Style 'RG'), and frame and grate (Style 'FG') in a corner. Only one penetration is allowed per slab lid.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of ¾" to reinforcing from lower outside shoulder of slab for structural reinforcement, and 2" from top of slab for shrinkage and temperature reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in²/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.

INSTALLATION NOTES:

1. Precast slab lids are intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. Initial installation of grade adjustment rings for Styles 'RH' and 'SH' is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles 'RH' and 'SH' may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments can be made up to Max depth shown on sheet PDD. Structure must be evaluated if Max depth will be exceeded.
6. Orient long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans

GENERAL NOTES:

1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

PRECAST SLAB LID

PSL

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DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

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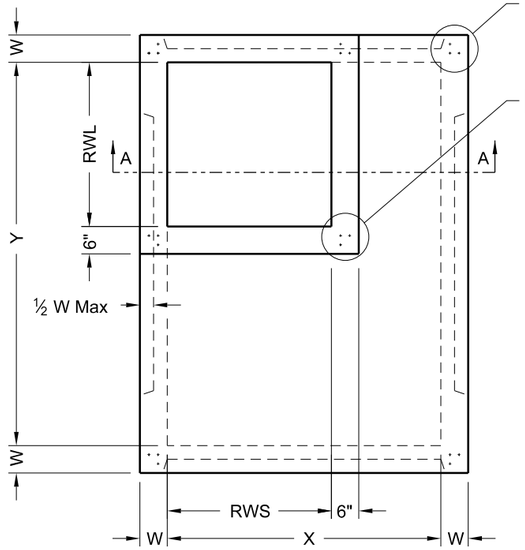
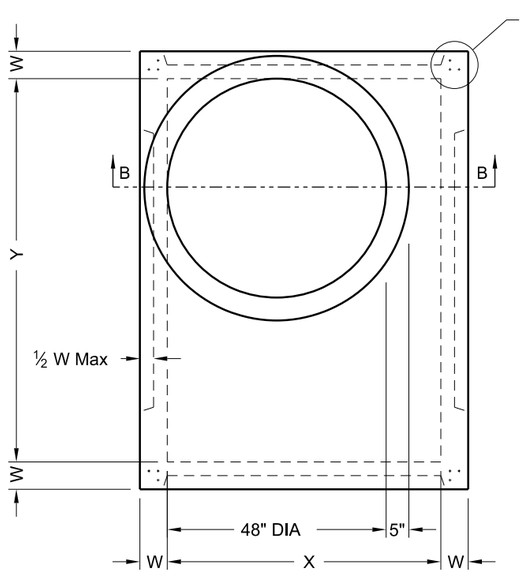


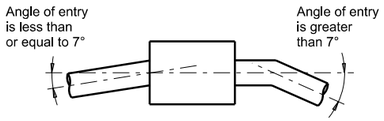
PLAN VIEW "A"

SQUARE REDUCED RISER OPTION



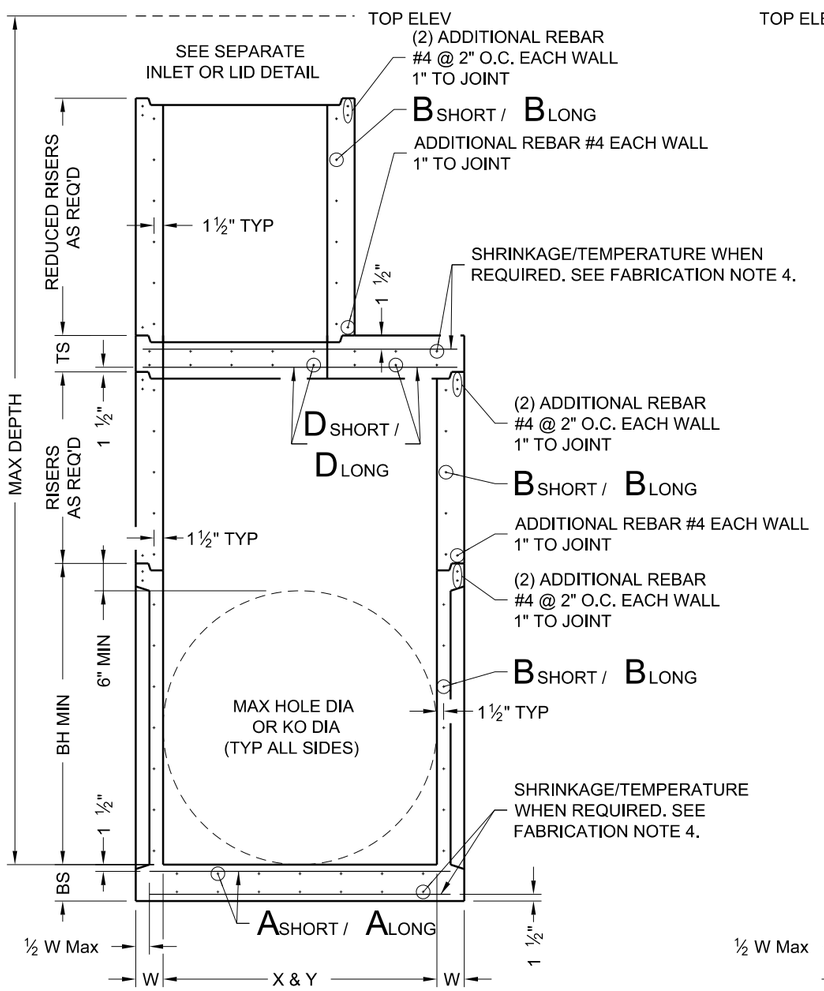
PLAN VIEW "B"

ROUND REDUCED RISER OPTION



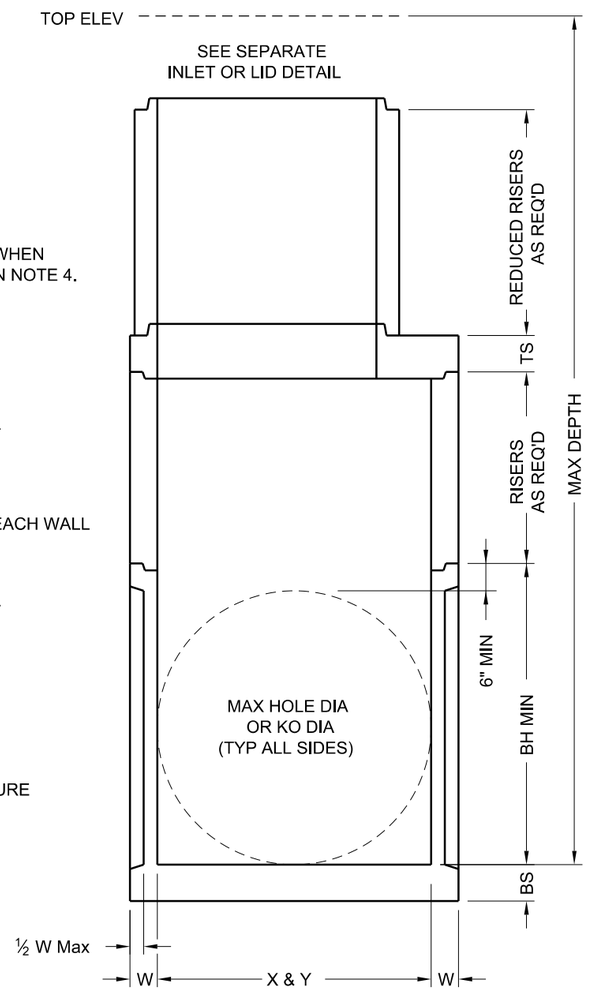
PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PB wall.
If necessary, use pipe elbow or curved approach alignment to stay within this limit.



SECTION A-A

SQUARE REDUCED RISER OPTION



SECTION B-B

ROUND REDUCED RISER OPTION

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 ½" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

INSTALLATION NOTES:

1. If required elsewhere. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

PRECAST BASE

PB

FILE:	prestd01-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS		-	-	-	MILPAS
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO	(HCDA 07-12-22	127

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground I, LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

	Size	MAX DEPTH = 15 ft. to top of BASE SLAB										MAX DEPTH = 25 ft. to top of BASE SLAB										Min Height (See Gen Note 3)	Max HOLE DIA (See Fab Note 2)	Max KO DIA (See Fab Note 2)
		Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)				Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)						
		Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness			
	X x Y	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	BH MIN	HOLE DIA	KO DIA
	ft.	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	ft. **	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	ft. **	in^2/ft	in^2/ft	in.	ft.	in.	in.
Precast Junction Box (PJB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	0.37	0.37	9	0.29	0.29	6	0.24	0.24	6	N/A	0.37	0.37	9	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	0.41	0.41	9	0.47	0.47	6	0.38	0.38	6	N/A	0.41	0.41	9	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	N/A	0.48	0.48	9	0.39	0.18	6	0.23	0.59	6	N/A	0.48	0.48	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	N/A	0.42	0.42	9	0.53	0.26	6	0.39	0.59	6	N/A	0.42	0.42	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	N/A	0.43	0.43	9	0.62	0.62	6	0.59	0.59	6	N/A	0.43	0.43	9	5.5	60	60
	5x6	0.27	0.27	9	0.34	0.45	6	N/A	0.48	0.48	9	0.47	0.45	9	0.38	0.54	8	N/A	0.48	0.48	9	5.5	60/72	60/72
	6x6	0.27	0.27	9	0.45	0.45	6	N/A	0.56	0.56	9	0.52	0.52	9	0.54	0.54	8	N/A	0.56	0.56	9	6.5	72	72
	8x8	0.46	0.46	9	0.51	0.51	8	N/A	0.45	0.45	12	0.87	0.87	9	0.59	0.59	10	N/A	0.45	0.45	12	8.5	96	72
Precast Base (PB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	N/A	N/A	N/A	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	0.47	0.47	6	0.38	0.38	6	N/A	N/A	N/A	N/A	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	3x3	0.30	0.34	9	0.39	0.18	6	0.23	0.59	6	3x3	0.40	0.40	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x3	0.30	0.30	9	0.53	0.26	6	0.39	0.59	6	3x3	0.46	0.37	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	4x4	0.30	0.30	9	0.53	0.26	6	0.39	0.59	6	4x4	0.39	0.39	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	48"	0.39	0.39	9	0.53	0.26	6	0.39	0.59	6	48"	0.47	0.47	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x5	0.33	0.40	9	0.53	0.26	6	0.39	0.59	6	3x5	0.48	0.48	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	3x3	0.34	0.34	9	0.62	0.62	6	0.59	0.59	6	3x3	0.53	0.53	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	4x4	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	4x4	0.64	0.64	9	5.5	60	60
	5x5	0.38	0.38	6	0.34	0.34	6	48"	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	48"	0.64	0.64	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	3x5	0.34	0.40	9	0.62	0.62	6	0.59	0.59	6	3x5	0.53	0.53	9	5.5	60	60
	5x6	0.31	0.31	9	0.34	0.45	6	3x3	0.34	0.34	9	0.47	0.45	9	0.38	0.54	8	3x3	0.61	0.50	9	5.5	60/72	60/72
	5x6	0.27	0.27	9	0.34	0.45	6	4x4	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	4x4	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	48"	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	48"	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	3x5	0.45	0.45	9	0.47	0.45	9	0.38	0.54	8	3x5	0.61	0.61	9	5.5	60/72	60/72
	6x6	0.29	0.29	9	0.45	0.45	6	3x3	0.41	0.41	9	0.52	0.52	9	0.54	0.54	8	3x3	0.74	0.74	9	6.5	72	72
	6x6	0.27	0.27	9	0.45	0.45	6	4x4	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	4x4	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	48"	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	48"	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	3x5	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	3x5	0.87	0.87	9	6.5	72	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x3	0.61	0.61	12	0.91	0.91	9	0.70	0.70	10	3x3	0.85	0.85	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	4x4	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	4x4	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	48"	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	48"	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x5	0.70	0.85	12	0.87	0.87	9	0.70	0.70	10	3x5	1.01	1.01	12	8.5	96	72

** Unless otherwise indicated.

FABRICATION NOTES:
1. Maximum spacing of reinforcement is 8".
2. At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.

GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
2. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
3. Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-6".

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

PDD

FILE: prestd10-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		128

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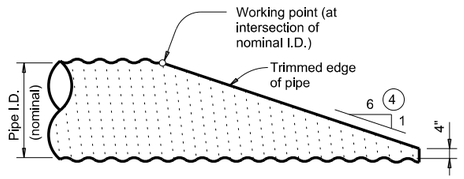
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

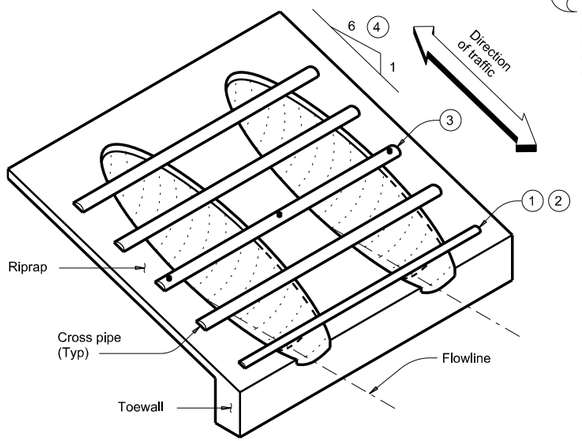
(HCDA 07-12-22



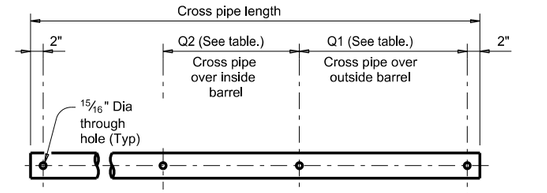
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

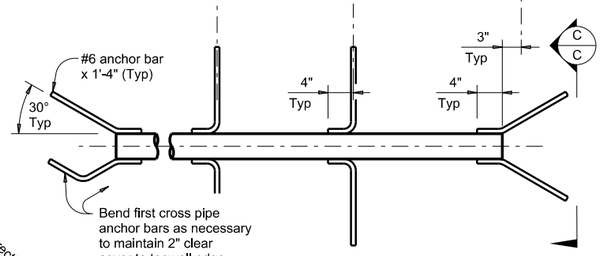
(Showing corrugated metal pipe (CMP) culvert Details at reinforced concrete pipe (RCP) culvert are similar.)



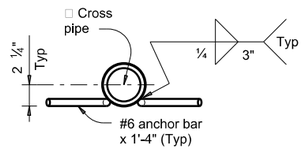
ISOMETRIC VIEW OF TYPICAL INSTALLATION



PIPE WITH BOLTED ANCHOR

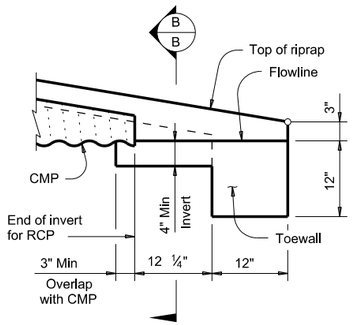


PIPE WITH ANCHOR BARS



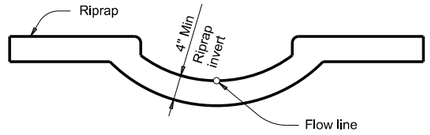
SECTION C-C

CROSS PIPE DETAILS



DETAIL "A"

(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



SECTION B-B

(Cross pipes not shown for clarity.)

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' - 9"	N/A	2' - 1"	1' - 9"	3 or more pipe culverts	3" Std (3.500" O.D.)
15"	0.7	0' - 11"	N/A	2' - 5"	2' - 2"		
18"	0.8	1' - 2"	N/A	2' - 10"	2' - 8"		
21"	0.9	1' - 4"	N/A	3' - 2"	3' - 1"		
24"	0.9	1' - 7"	N/A	3' - 6"	3' - 7"		
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"	3 or more pipe culverts	3 ½" Std (4.000" O.D.)
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"	2 or more pipe culverts	
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	All pipe culverts	
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All pipe culverts	4" Std (4.500" O.D.)
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"		
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"	All pipe culverts	5" Std (5.563" O.D.)
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"		
60"	2.2	3' - 3"	6' - 5"	7' - 4"	8' - 3"		
66"	2.4	3' - 3"	6' - 11"	7' - 10"	8' - 9"		
72"	2.7	3' - 4"	7' - 5"	8' - 5"	9' - 4"		

(1) The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.

(2) Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.

(3) Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.

(4) Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.

(5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

(6) Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52.

Provide ASTM A307 bolts and nuts.

Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

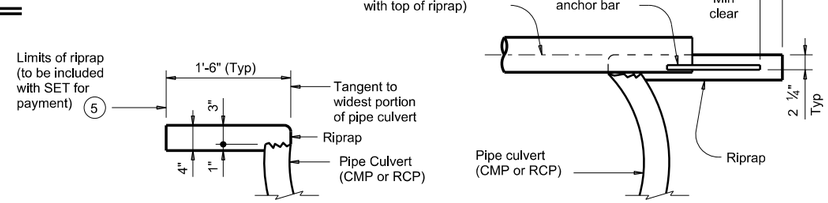
GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.

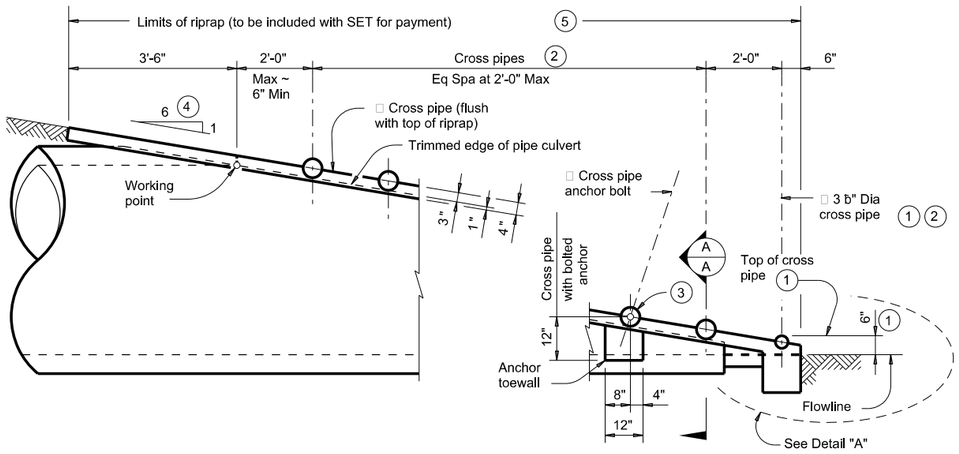
Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.



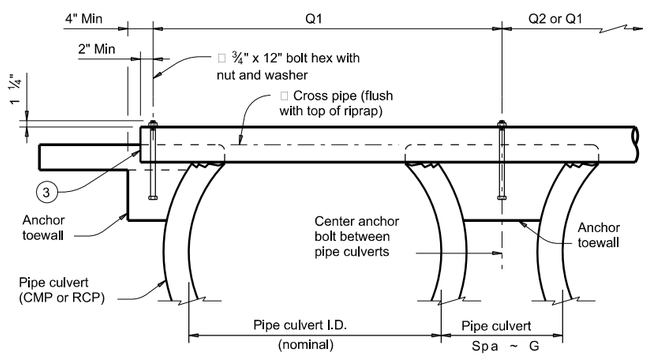
SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA
PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE

SETP-PD

FILE: setppdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		129

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HCDA 07-12-22

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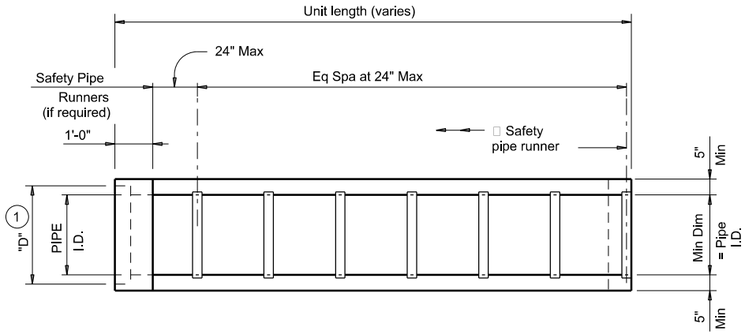
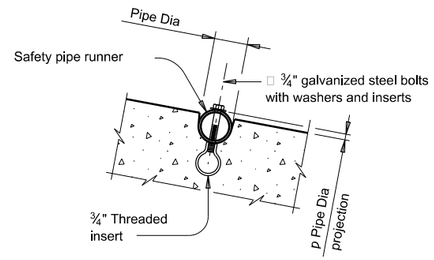


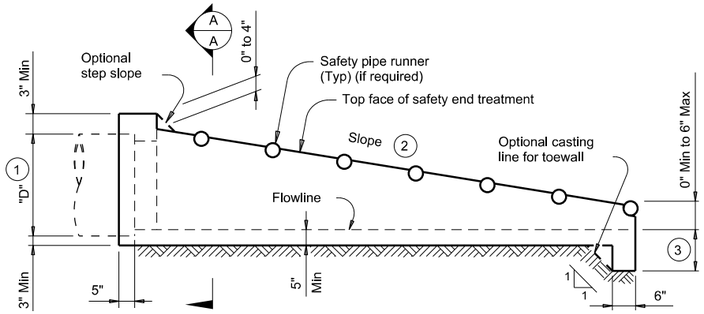
PLAN

(Showing bell end connection.)



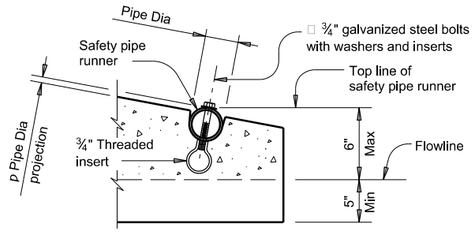
INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)

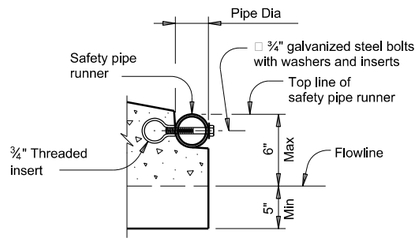


LONGITUDINAL ELEVATION

(Showing bell end connection.)



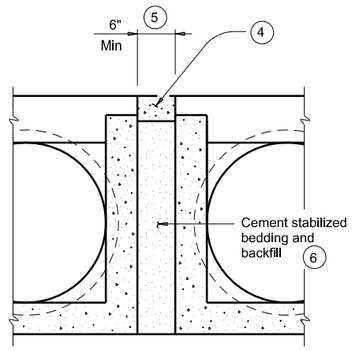
OPTION A



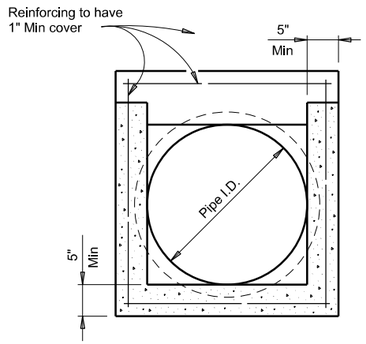
OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

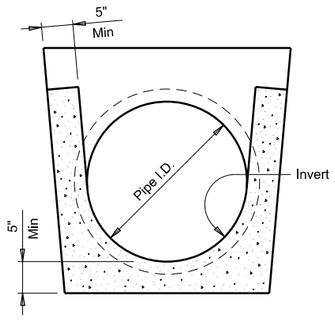
(If required)



MULTIPLE PIPE INSTALLATION

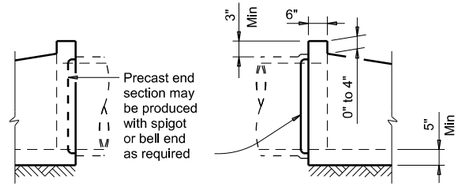


OPTION WITH SQUARE BOTTOM



OPTION WITH INVERT BOTTOM

SECTION A-A



OPTIONAL JOINT FOR RCP

(Showing joint between RCP and precast safety end treatment.)

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness (7)	"D" (1)	Slope	Min Length	Pipe Runners Required		Required Pipe Runner Size		
						Single Pipe	Multiple Pipe	Nominal Dia.	O.D.	I.D.
12"	2"	1.15"	17.00"	6:1	4' - 9"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
15"	2 ¼"	1.30"	20.50"	6:1	6' - 5"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
18"	2 ½"	1.60"	24.00"	6:1	8' - 0"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31.00"	6:1	11' - 3"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
30"	3 ½"	2.65"	38.50"	6:1	14' - 8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17' - 11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 ½"	N/A	52.50"	6:1	21' - 2"	Yes	Yes	4" STD	4.500"	4.026"

(1) Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C-76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for grouted connections.

(2) Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

(3) Toewall to be used only when dimension is shown elsewhere in the plans.

(4) Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment".

(5) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

(6) Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

(7) Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment".

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Manufacture this product in accordance with Item 467, "Safety End Treatment" except as noted below :

A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" - D12 x D12 or 5"x5" - D10 x D10 welded wire reinforcement (WWR).

B. For precast (steel formed) sections, provide Class "C" concrete (f'c = 3,600 psi).

At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464, "Reinforced Concrete Pipe". Connect TP by grouting. See PBGC standard for grouted connections with TP and precast safety end treatment.

Texas Department of Transportation

Bridge Division Standard

PRECAST SAFETY END TREATMENT

TYPE II ~ PARALLEL DRAINAGE

PSET-SP

FILE: psetspss-20.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		130

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground LLC
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

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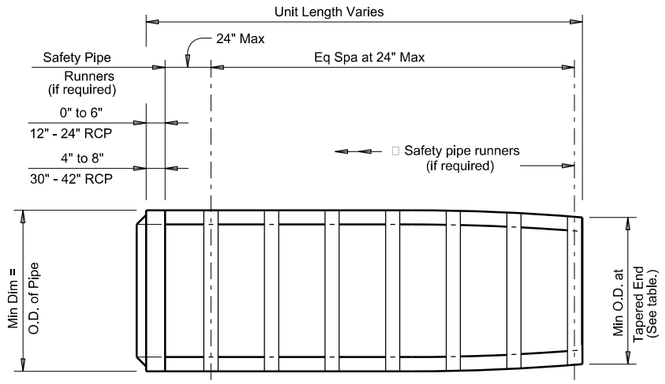
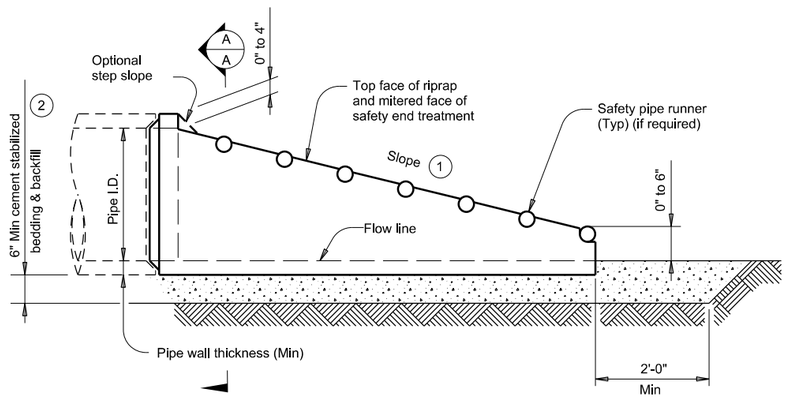


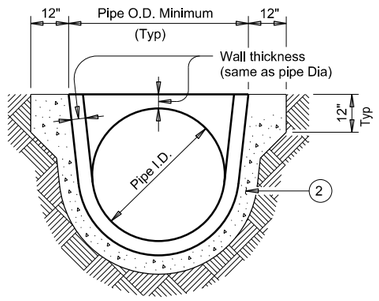
PLAN VIEW - 12" THRU 24"

(Showing spigot end connection.)

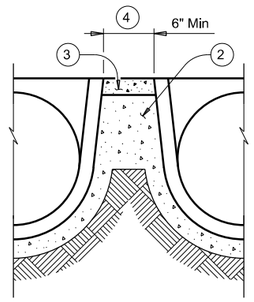


LONGITUDINAL ELEVATION - 12" THRU 24"

(Showing spigot end connection.)



SECTION A-A



MULTIPLE PIPE INSTALLATION

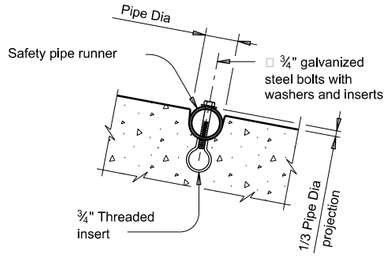
1. Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

   Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

3. Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment".

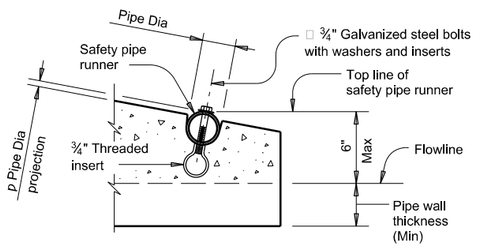
4. Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

5. Safety pipe runners are required for multiple pipe culverts with more than two pipes.

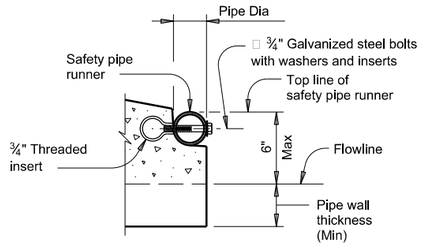


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



OPTION A



OPTION B

END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	Min Wall Thickness	Min O.D.	Min O.D. at Tapered End	Min Reinf Requirements (sq. in. per ft. of Pipe)	Max Slope	Min Length of Unit	Pipe Runner Requirements		Required Pipe Runner Sizes		
							Single Pipe	Multiple Pipe	Nominal Dia	O.D.	I.D.
12"	2"	16"	16"	0.07 Circ.	6:1	4' - 0"	No	(5)	3" STD	3.500"	3.068"
15"	2 ¼"	19 ½"	19"	0.07 Circ.	6:1	5' - 8"	No	(5)	3" STD	3.500"	3.068"
18"	2 ½"	23"	21 ½"	0.07 Circ.	6:1	7' - 3"	No	(5)	3" STD	3.500"	3.068"
24"	3"	30"	27"	0.07 Circ.	6:1	10' - 6"	No	(5)	3" STD	3.500"	3.068"
30"	3 ½"	37"	31"	0.18 Circ.	6:1	12' - 1"	No	Yes	4" STD	4.500"	4.026"
36"	4"	44"	36"	0.19 Ellip.	6:1	15' - 4"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 ½"	51"	41 ½"	0.23 Ellip.	6:1	18' - 7"	Yes	Yes	4" STD	4.500"	4.026"

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.

Galvanize steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP) may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment".

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Manufacture precast concrete end sections in accordance with Item 464, "Reinforced Concrete Pipe" and in accordance with ASTM Specification C-76, Class III, Wall B for circular pipe.

Provide precast concrete end sections with a spigot or bell end for compatibility to upstream or downstream end conditions with sufficient annular space to allow for grout, mortar, cold applied asphalt joint compound or pre-formed plastic gasket material.

Methods of lifting shall be provided by the manufacturer for ease of loading, unloading and installation.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Texas Department of Transportation

Bridge Division Standard

PRECAST SAFETY END TREATMENT

TYPE II ~ PARALLEL DRAINAGE

PSET-RP

FILE: psetrpss-20.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		131

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DATE:
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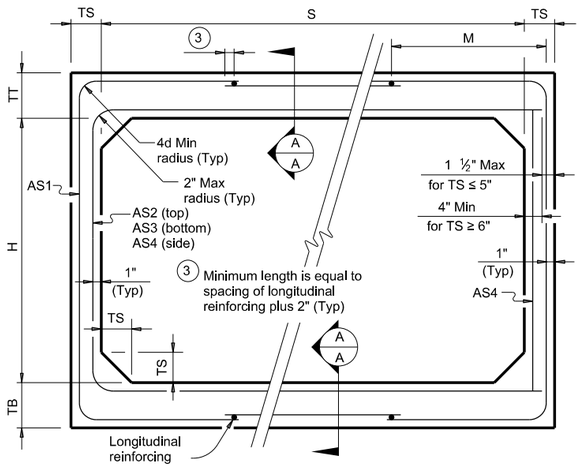
C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground I, L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"
(HCDA 07-12-22

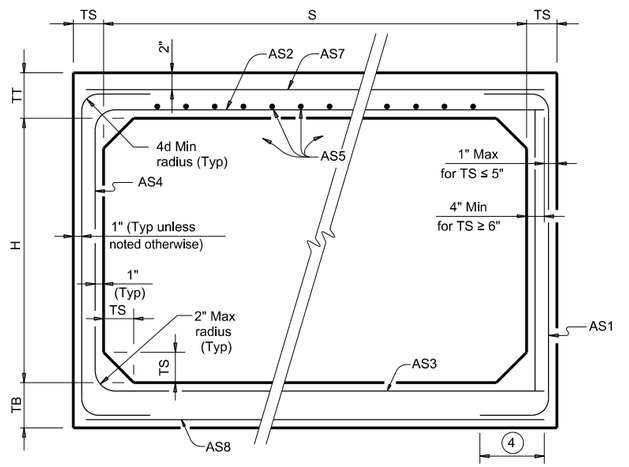
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
7	3	8	8	8	< 2	-	0.23	0.31	0.22	0.19	0.19	0.19	0.19	9.6
7	3	8	8	8	2 < 3	47	0.27	0.25	0.24	0.19	-	-	-	9.6
7	3	8	8	8	3 - 5	43	0.19	0.19	0.19	0.19	-	-	-	9.6
7	3	8	8	8	10	43	0.21	0.20	0.21	0.19	-	-	-	9.6
7	3	8	8	8	15	43	0.28	0.26	0.27	0.19	-	-	-	9.6
7	3	8	8	8	20	43	0.36	0.34	0.35	0.19	-	-	-	9.6
7	3	8	8	8	25	43	0.45	0.42	0.43	0.19	-	-	-	9.6
7	3	8	8	8	30	43	0.54	0.50	0.51	0.19	-	-	-	9.6
7	4	8	8	8	< 2	-	0.21	0.34	0.25	0.19	0.19	0.19	0.19	10.4
7	4	8	8	8	2 < 3	43	0.23	0.28	0.28	0.19	-	-	-	10.4
7	4	8	8	8	3 - 5	43	0.19	0.22	0.19	0.19	-	-	-	10.4
7	4	8	8	8	10	43	0.19	0.23	0.23	0.19	-	-	-	10.4
7	4	8	8	8	15	41	0.24	0.30	0.30	0.19	-	-	-	10.4
7	4	8	8	8	20	41	0.31	0.38	0.39	0.19	-	-	-	10.4
7	4	8	8	8	25	41	0.38	0.47	0.48	0.19	-	-	-	10.4
7	4	8	8	8	30	41	0.46	0.57	0.57	0.19	-	-	-	10.4
7	5	8	8	8	< 2	-	0.19	0.36	0.27	0.19	0.19	0.19	0.19	11.2
7	5	8	8	8	2 < 3	47	0.21	0.31	0.31	0.19	-	-	-	11.2
7	5	8	8	8	3 - 5	43	0.19	0.24	0.21	0.19	-	-	-	11.2
7	5	8	8	8	10	43	0.19	0.25	0.26	0.19	-	-	-	11.2
7	5	8	8	8	15	41	0.21	0.32	0.33	0.19	-	-	-	11.2
7	5	8	8	8	20	41	0.27	0.41	0.42	0.19	-	-	-	11.2
7	5	8	8	8	25	41	0.33	0.51	0.52	0.19	-	-	-	11.2
7	5	8	8	8	30	41	0.40	0.61	0.62	0.19	-	-	-	11.2
7	6	8	8	8	< 2	-	0.19	0.38	0.30	0.19	0.19	0.19	0.19	12.0
7	6	8	8	8	2 < 3	59	0.19	0.33	0.34	0.19	-	-	-	12.0
7	6	8	8	8	3 - 5	47	0.19	0.25	0.23	0.19	-	-	-	12.0
7	6	8	8	8	10	43	0.19	0.26	0.27	0.19	-	-	-	12.0
7	6	8	8	8	15	41	0.19	0.34	0.35	0.19	-	-	-	12.0
7	6	8	8	8	20	41	0.24	0.43	0.45	0.19	-	-	-	12.0
7	6	8	8	8	25	41	0.29	0.53	0.55	0.19	-	-	-	12.0
7	6	8	8	8	30	41	0.35	0.64	0.65	0.19	-	-	-	12.0
7	7	8	8	8	< 2	-	0.19	0.40	0.33	0.19	0.19	0.19	0.19	12.8
7	7	8	8	8	2 < 3	59	0.19	0.36	0.37	0.19	-	-	-	12.8
7	7	8	8	8	3 - 5	59	0.19	0.27	0.25	0.19	-	-	-	12.8
7	7	8	8	8	10	47	0.19	0.27	0.29	0.19	-	-	-	12.8
7	7	8	8	8	15	43	0.19	0.35	0.37	0.19	-	-	-	12.8
7	7	8	8	8	20	43	0.22	0.44	0.46	0.19	-	-	-	12.8
7	7	8	8	8	25	43	0.27	0.54	0.57	0.19	-	-	-	12.8
7	7	8	8	8	30	41	0.32	0.65	0.67	0.19	-	-	-	12.8



CORNER OPTION "A" CORNER OPTION "B"

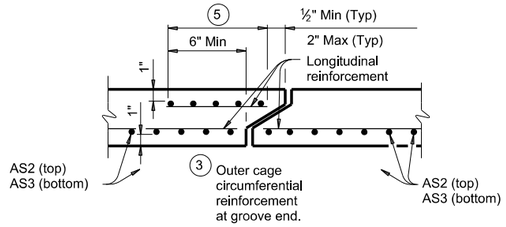
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete ($f'c$ = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

7'-0" SPAN

SCP-7

FILE: scp07sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		132

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HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"
(HCDA 07-12-22

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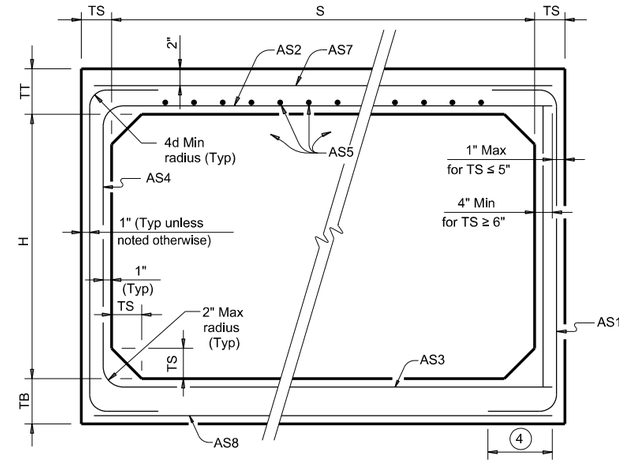
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							Lift Weight ①
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
12	4	12	12	12	< 2	-	0.38	0.31	0.29	0.29	0.29	0.29	0.29	22.8
12	4	12	12	12	2 < 3	73	0.44	0.37	0.30	0.29	-	-	-	22.8
12	4	12	12	12	3 - 5	66	0.37	0.30	0.29	0.29	-	-	-	22.8
12	4	12	12	12	10	66	0.44	0.34	0.35	0.29	-	-	-	22.8
12	4	12	12	12	15	59	0.60	0.46	0.48	0.29	-	-	-	22.8
12	4	12	12	12	20	59	0.78	0.60	0.61	0.29	-	-	-	22.8
12	4	12	12	12	25	59	0.97	0.74	0.75	0.29	-	-	-	22.8
12	5	12	12	12	< 2	-	0.34	0.33	0.29	0.29	0.29	0.29	0.29	24.0
12	5	12	12	12	2 < 3	66	0.41	0.40	0.33	0.29	-	-	-	24.0
12	5	12	12	12	3 - 5	61	0.34	0.33	0.30	0.29	-	-	-	24.0
12	5	12	12	12	10	59	0.41	0.38	0.39	0.29	-	-	-	24.0
12	5	12	12	12	15	59	0.55	0.51	0.52	0.29	-	-	-	24.0
12	5	12	12	12	20	59	0.71	0.66	0.67	0.29	-	-	-	24.0
12	5	12	12	12	25	59	0.88	0.81	0.82	0.29	-	-	-	24.0
12	6	12	12	12	< 2	-	0.32	0.36	0.32	0.29	0.29	0.29	0.29	25.2
12	6	12	12	12	2 < 3	66	0.38	0.43	0.36	0.29	-	-	-	25.2
12	6	12	12	12	3 - 5	59	0.32	0.36	0.33	0.29	-	-	-	25.2
12	6	12	12	12	10	59	0.38	0.41	0.42	0.29	-	-	-	25.2
12	6	12	12	12	15	53	0.51	0.55	0.57	0.29	-	-	-	25.2
12	6	12	12	12	20	53	0.65	0.71	0.72	0.29	-	-	-	25.2
12	6	12	12	12	25	53	0.81	0.87	0.89	0.29	-	-	-	25.2
12	7	12	12	12	< 2	-	0.30	0.39	0.35	0.29	0.29	0.29	0.29	26.4
12	7	12	12	12	2 < 3	66	0.35	0.46	0.39	0.29	-	-	-	26.4
12	7	12	12	12	3 - 5	59	0.29	0.38	0.36	0.29	-	-	-	26.4
12	7	12	12	12	10	59	0.36	0.43	0.45	0.29	-	-	-	26.4
12	7	12	12	12	15	53	0.47	0.58	0.61	0.29	-	-	-	26.4
12	7	12	12	12	20	53	0.61	0.75	0.77	0.29	-	-	-	26.4
12	8	12	12	12	< 2	-	0.29	0.41	0.38	0.29	0.29	0.29	0.29	27.6
12	8	12	12	12	2 < 3	66	0.33	0.49	0.42	0.29	-	-	-	27.6
12	8	12	12	12	3 - 5	59	0.29	0.41	0.38	0.29	-	-	-	27.6
12	8	12	12	12	10	59	0.34	0.46	0.48	0.29	-	-	-	27.6
12	8	12	12	12	15	53	0.44	0.61	0.64	0.29	-	-	-	27.6
12	8	12	12	12	20	53	0.57	0.78	0.81	0.29	-	-	-	27.6
12	8	12	12	12	25	53	0.69	0.96	0.99	0.29	-	-	-	27.6

BOX DATA

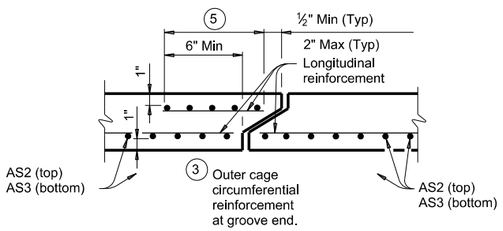
SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							Lift Weight ①
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
12	9	12	12	12	< 2	-	0.29	0.43	0.40	0.29	0.29	0.29	0.29	28.8
12	9	12	12	12	2 < 3	66	0.30	0.51	0.45	0.29	-	-	-	28.8
12	9	12	12	12	3 - 5	66	0.29	0.43	0.41	0.29	-	-	-	28.8
12	9	12	12	12	10	59	0.32	0.47	0.51	0.29	-	-	-	28.8
12	9	12	12	12	15	53	0.42	0.63	0.67	0.29	-	-	-	28.8
12	9	12	12	12	20	53	0.53	0.81	0.85	0.29	-	-	-	28.8
12	9	12	12	12	25	53	0.69	0.96	0.99	0.29	-	-	-	28.8
12	10	12	12	12	< 2	-	0.29	0.45	0.43	0.29	0.29	0.29	0.29	30.0
12	10	12	12	12	2 < 3	73	0.29	0.54	0.48	0.29	-	-	-	30.0
12	10	12	12	12	3 - 5	66	0.29	0.45	0.43	0.29	-	-	-	30.0
12	10	12	12	12	10	59	0.31	0.49	0.53	0.29	-	-	-	30.0
12	10	12	12	12	15	53	0.40	0.65	0.70	0.29	-	-	-	30.0
12	10	12	12	12	20	53	0.51	0.84	0.88	0.29	-	-	-	30.0
12	10	12	12	12	25	53	0.62	1.03	1.07	0.29	-	-	-	30.0
12	11	12	12	12	< 2	-	0.29	0.47	0.45	0.29	0.29	0.29	0.29	31.2
12	11	12	12	12	2 < 3	80	0.29	0.56	0.51	0.29	-	-	-	31.2
12	11	12	12	12	3 - 5	73	0.29	0.47	0.46	0.29	-	-	-	31.2
12	11	12	12	12	10	66	0.29	0.51	0.55	0.29	-	-	-	31.2
12	11	12	12	12	15	59	0.38	0.67	0.72	0.29	-	-	-	31.2
12	11	12	12	12	20	53	0.48	0.85	0.91	0.29	-	-	-	31.2
12	11	12	12	12	25	53	0.59	1.05	1.10	0.29	-	-	-	31.2
12	12	12	12	12	< 2	-	0.29	0.49	0.48	0.33	0.29	0.29	0.29	32.4
12	12	12	12	12	2 < 3	93	0.29	0.59	0.53	0.29	-	-	-	32.4
12	12	12	12	12	3 - 5	80	0.29	0.49	0.48	0.29	-	-	-	32.4
12	12	12	12	12	10	73	0.29	0.52	0.58	0.29	-	-	-	32.4
12	12	12	12	12	15	59	0.37	0.69	0.74	0.29	-	-	-	32.4
12	12	12	12	12	20	59	0.46	0.87	0.93	0.29	-	-	-	32.4



CORNER OPTION "A" CORNER OPTION "B"

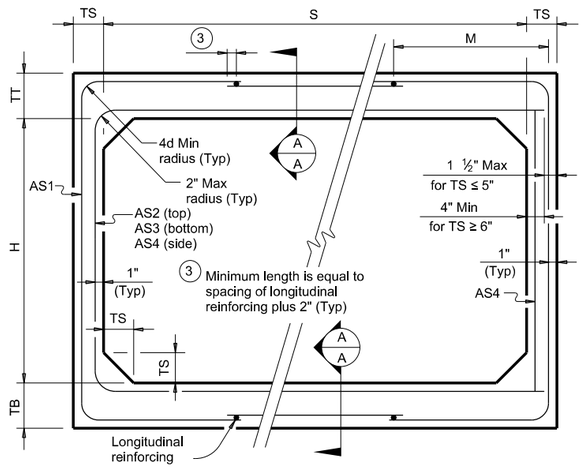
FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER

① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

12'-0" SPAN

SCP-12

FILE: scp12sts-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		133

DATE:
FILE: C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L L C (HCDA 07-12-22)
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

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TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Dimensions					Variable Reinforcing				Estimated Quantities per ft of wing length (2~wings) ③	
					Bars J1		Bars J2			
Maximum Wingwall Height Hw	W	X	Y	Z	Size	Spa	Size	Spa	Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2~wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

Hw = H + T + C - 0.250'
A = (Hw - 0.333') (SL)
B = (A) tangent (30°)
Lw = (A) ÷ cosine (30°)

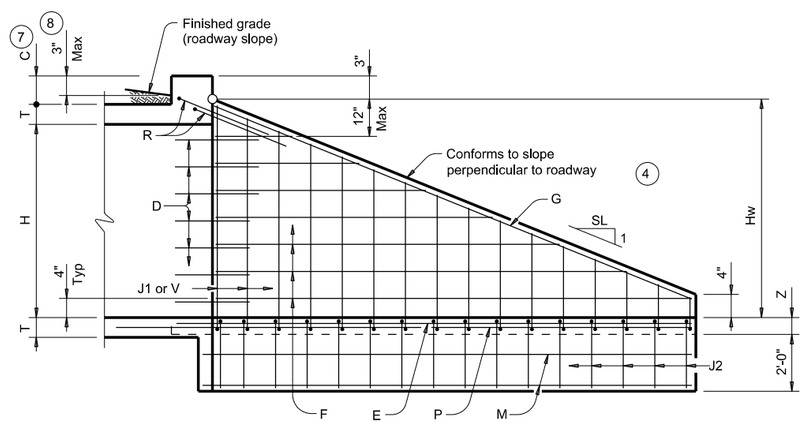
For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N - 1) (0.5')

Total Wingwall Area (two wings ~ SF) = (Hw + 0.333') (Lw)

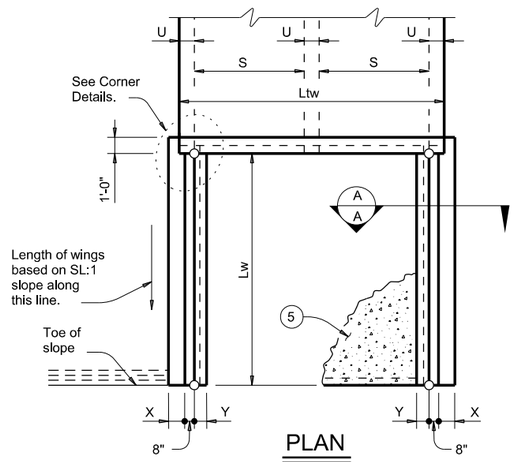
Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.



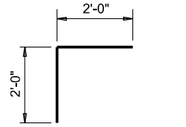
INSIDE ELEVATION

(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

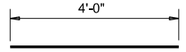


PLAN

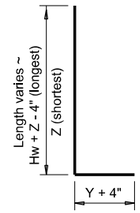
(Showing dimensions.)



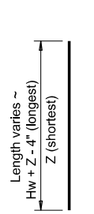
BARS R



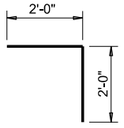
BARS D



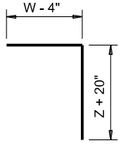
BARS J1



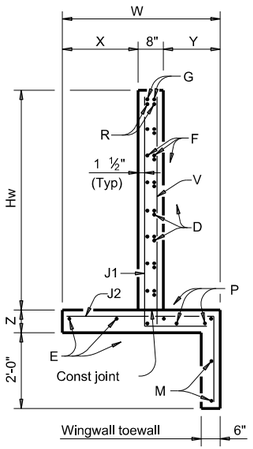
BARS V



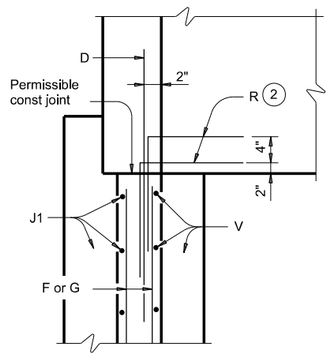
BARS L



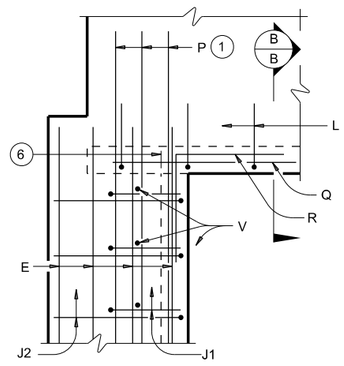
BARS J2



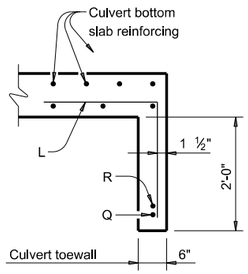
SECTION A-A



WINGWALL



FOOTING AND TOEWALL



SECTION B-B
5

CORNER DETAILS

1. Extend Bars P 3'-0" minimum into bottom slab of box culvert.
2. Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.
4. Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.
5. When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
6. At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.
7. 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
8. For vehicle safety, the following requirements must be met:
   - For structures without bridge rail, construct curbs no more than 3" above finished grade.
   - For structures with bridge rail, construct curbs flush with finished grade.

   Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation

Bridge Division Standard

CONCRETE WINGWALLS
WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

SW-0

FILE:	sw-0stde-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS		-	-	-	MILPAS
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		134

DATE:
FILE:

C-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground I, L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"
(HCDA 07-12-22

Culvert Station and/or Creek Name followed by applicable end (Lt, Rt or Both)	Description of Box Culvert No. Spans ~ Span X Height	Max Fill Height (Ft)	Applicable Box Culvert Standard (4)	Applicable Wingwall or End Treatment Standard	Skew Angle (0°,15°, 30° or 45°)	Side Slope or Channel Slope Ratio (SL:1)	T Culvert Top Slab Thickness (In)	U Culvert Wall Thickness (In)	C Estimated Curb Height (Ft)	Hw (1) Height of Wingwall (Ft)	A Curb to End of Wingwall (Ft)	B Offset of End of Wingwall (Ft)	Lw Length of Longest Wingwall (Ft)	Ltw Culvert Toewall Length (Ft)	Atw Anchor Toewall Length (Ft)	Riprap Apron (CY)	Class "C" Conc (Curb) (2) (CY)	Class "C" Conc (Wingwall) (3) (CY)	Total Wingwall Area (SF)
STA. 141+50	1-12'X8'	8'	SCP-12	SW-0	0°	2:1	12	12	1	9.750	N/A	N/A	18.833	N/A	N/A	5.0	1.0	22.0	380
STA. 145+05	1-7'X7'	8'	SCP-7	SW-0	0°	2:1	8	8	1	8.417	N/A	N/A	16.167	N/A	N/A	1.8	0.6	17.2	282

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

NOTES:
Skew = 0° on SW-0, FW-0, SETB-CD, SETB-SW-0, and SETB-FW-0 standard sheets;
30° maximum for safety end treatment

SL:1 = Horizontal : 1 Vertical
· Side slope at culvert for flared or straight wingwalls.
· Channel slope for parallel wingwalls.
· Slope must be 3:1 or flatter for safety end treatments.

T = Box culvert top slab thickness. Dimension can be found on the applicable box culvert standard sheet.

U = Box culvert wall thickness. Dimension can be found on the applicable box culvert standard sheet.

C = Curb height

See applicable wing or end treatment standard sheets for calculations of Hw, A, B, Lw, Ltw, Atw, and Total Wingwall Area.

Hw = Height of wingwall

A = Distance from face of curb to end of wingwall (not applicable to parallel or straight wingwalls)

B = Offset of end of wingwall (not applicable to parallel or straight wingwalls)

Lw = Length of longest wingwall.

Ltw = Length of culvert toewall (not applicable when using riprap apron)

Atw = Length of anchor toewall (applicable to safety end treatment only)
Total Wingwall Area = Wingwall area in sq. ft. for two wingwalls (one structure end) if Lt or Rt.
Area for four wingwalls (two structure ends) if Both.

(1) Round the wall heights shown to the nearest foot for bidding purposes.

(2) Concrete volume shown is for box culvert curb only. For curbs using the Box Culvert Rail Mounting Details (RAC) standard sheet quantities shown must be increased by a factor of 2.25. If Class S concrete is required for the top slab of the culvert, also provide Class S concrete for the curb. Curb concrete is considered part of the Box Culvert for payment.

(3) Concrete volume shown is total of wings, footings, culvert toewall (if any), anchor toewalls (if any) and wingwall toewalls. Riprap aprons, culverts, and curb quantities are not included.

(4) Regardless of the type of culvert shown on this sheet, the Contractor has the option of furnishing cast-in-place or precast culverts unless otherwise shown elsewhere on the plans. If the Contractor elects to provide culverts of a different type than those shown on this sheet, it is the Contractor's responsibility to make the necessary adjustments to the dimensions and quantities shown.

SPECIAL NOTE:

This sheet is a supplement to the box culvert standards. It is to be filled out by the culvert specifier and provides dimensions for the construction of the box culvert wingwalls and safety end treatments.

An Excel 2010 spreadsheet to assist in completing this table can be downloaded from the Bridge Standards (English) web page on the TxDOT web site. The completed sheet must be signed, sealed, and dated by a licensed Professional Engineer.

Texas Department of Transportation

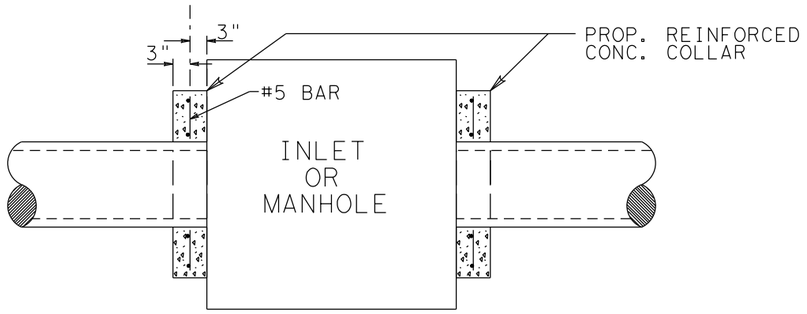
Bridge Division Standard

BOX CULVERT SUPPLEMENT
WINGS AND END TREATMENTS

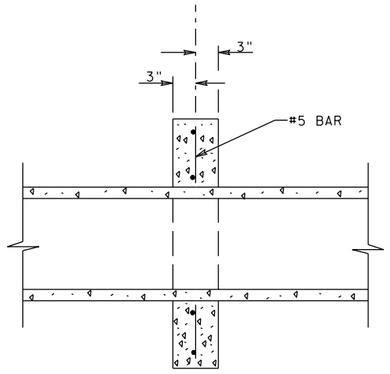
BCS

FILE:	bcsstde1-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS		-	-	-	MILPAS
		DIST	COUNTY		SHEET NO.
		PHR	HIDALGO		135

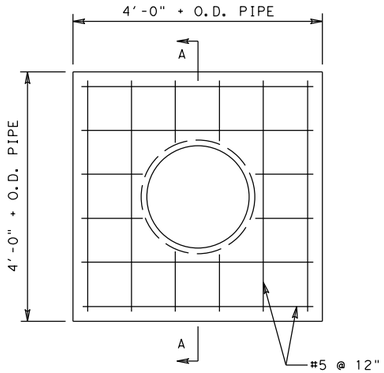
DATE:
FILE:



INLET OR MANHOLE CONNECTION
PLAN VIEW

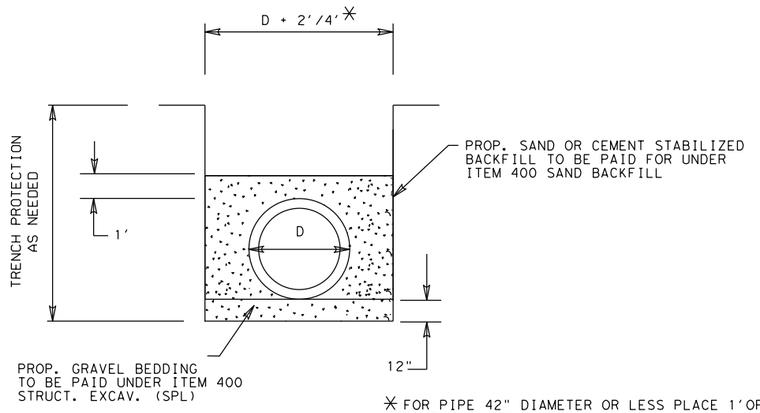


SECTION A-A



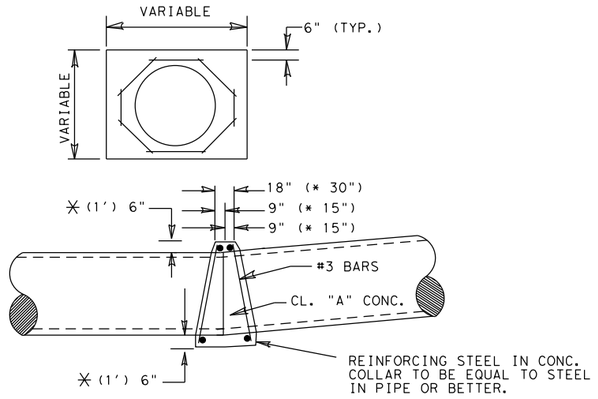
FRONT ELEVATION

CONCRETE PIPE COLLAR



✳ FOR PIPE 42" DIAMETER OR LESS PLACE 1'OF FILL
ON EACH SIDE OF THE PIPE.
FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL
ON EACH SIDE OF THE PIPE.

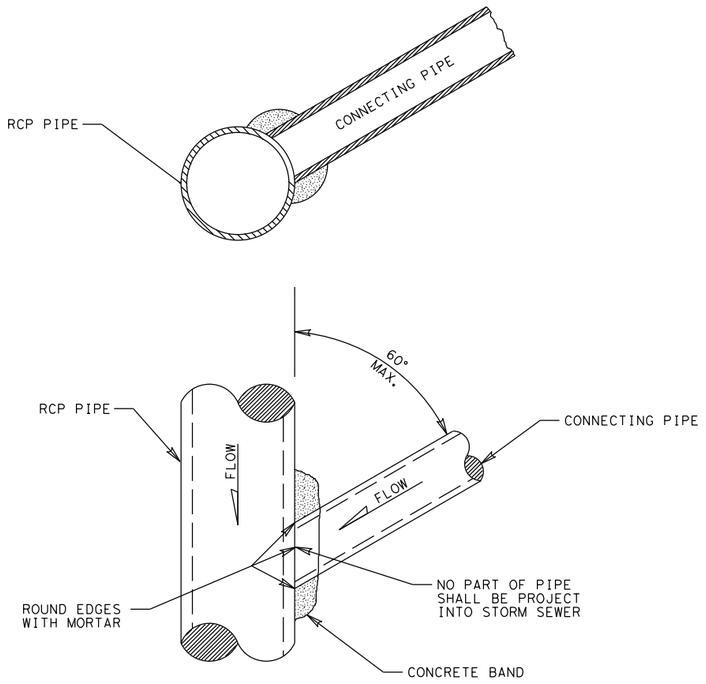
SPIRAL RIB CMP
TYPICAL BACKFILL DETAIL
GRAVEL & SAND



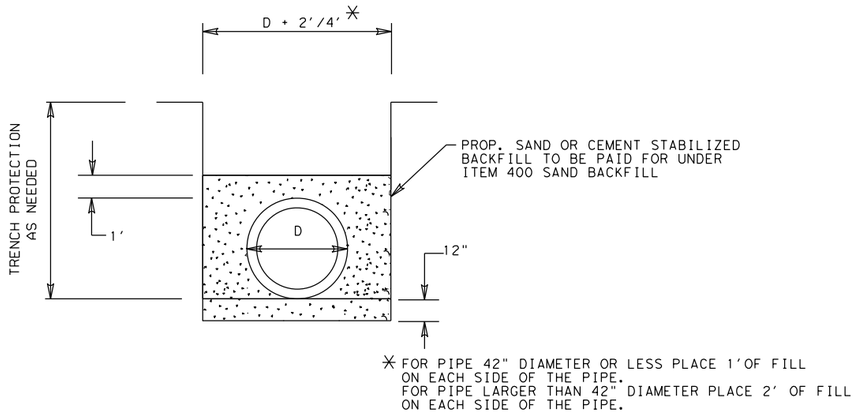
DETAIL FOR CONC. COLLARS
DRAINAGE STRUCTURES AND PIPE
SIPHONS (HORIZ. & VERT. BENDS)

NOTE: PROP. CONC. COLLAR WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE BIDS ITEMS INVOLVED.

✳ FOR 42" DIAMETER AND LARGER PIPE



TYPICAL REINFORCED CONC. PIPE
CONNECTION WITHOUT MANHOLE



✳ FOR PIPE 42" DIAMETER OR LESS PLACE 1'OF FILL
ON EACH SIDE OF THE PIPE.
FOR PIPE LARGER THAN 42" DIAMETER PLACE 2' OF FILL
ON EACH SIDE OF THE PIPE.

REINFORCED CONCRETE PIPE
TYPICAL BACKFILL DETAIL-GRAVEL & SAND

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PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS
PIPE STANDARD

REV. 2/19

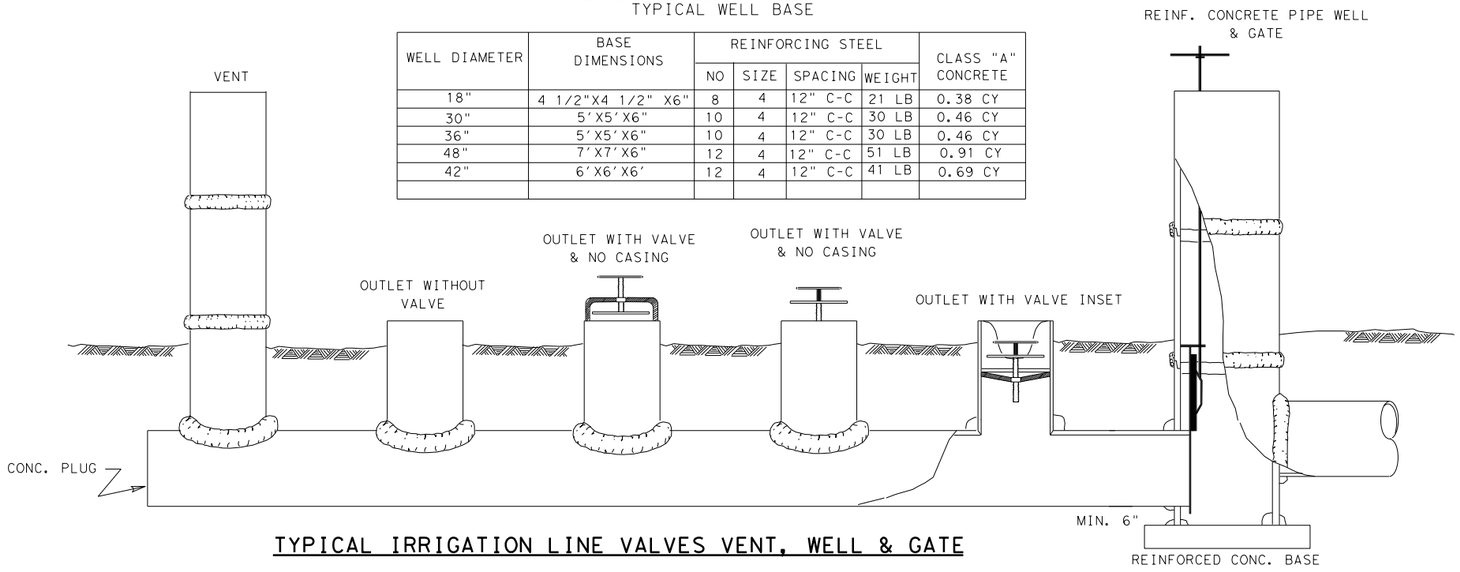
MISC.PIPE.DGN

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		FILE NO.			SHEET NO.
6						136
STATE	STATE DIST.NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TEXAS	PHR	HIDALGO	-	-	-	MILPAS

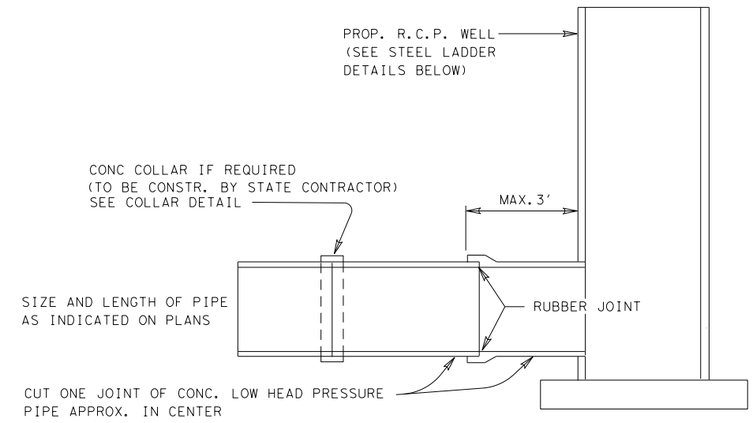
FILE: D:\Las Milpas\Design\000*PLANSET*BID OUT\10 STANDARDS\04 Drainage\136*MISC. PIPE.dgn
DATE: 12/27/2021 4:46:43 AM

ESTIMATED QUANTITIES FOR
TYPICAL WELL BASE

WELL DIAMETER	BASE DIMENSIONS	REINFORCING STEEL				CLASS "A" CONCRETE
		NO	SIZE	SPACING	WEIGHT	
18"	4 1/2"X4 1/2" X6"	8	4	12" C-C	21 LB	0.38 CY
30"	5'X5'X6"	10	4	12" C-C	30 LB	0.46 CY
36"	5'X5'X6"	10	4	12" C-C	30 LB	0.46 CY
48"	7'X7'X6"	12	4	12" C-C	51 LB	0.91 CY
42"	6'X6'X6'	12	4	12" C-C	41 LB	0.69 CY



TYPICAL IRRIGATION LINE VALVES VENT, WELL & GATE



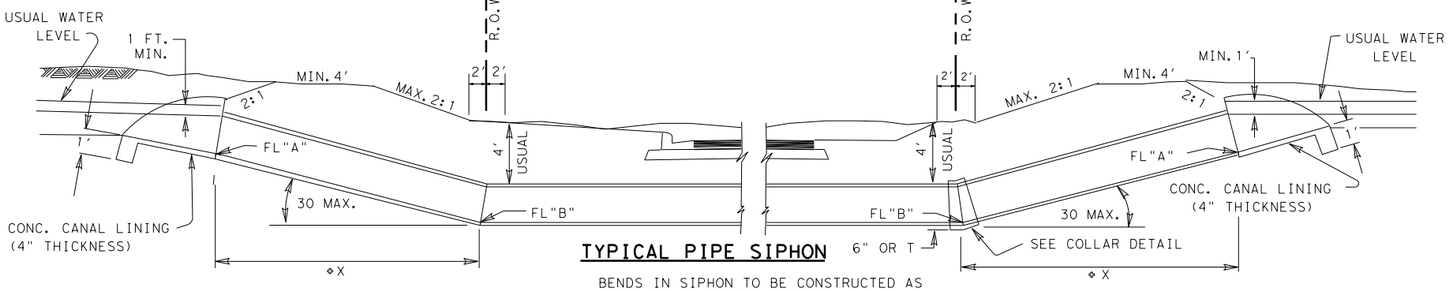
TYPICAL CONC. PIPE WELL DETAILS FOR CONNECTING CONC. LOW HEAD PRESSURE PIPE

GENERAL NOTES

HEIGHT OF RELOCATED WELLS AND VENTS TO BE EQUIVALENT TO THAT OF EXISTING STRUCTURES OR AS REQUIREDFOR PROPER OPERATION.

CONCRETE REQUIRED FOR BASE, PLUGS, OR CAPS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED AS SUB-SIDIARY TO THE VARIOUS BID ITEMS OF THIS CONTRACT.

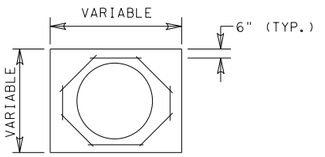
IN GENERAL THE PARTICULAR TYPE OR DESIGN OF THE EXISTING FACILITY TO BE EXTENDED OR RELOCATED SHALL BE DUPLICATED.

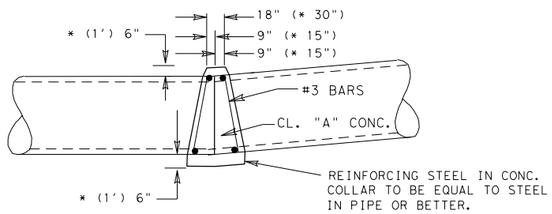


TYPICAL PIPE SIPHON

BENDS IN SIPHON TO BE CONSTRUCTED AS PROVIDED IN SPECIFICATIONS

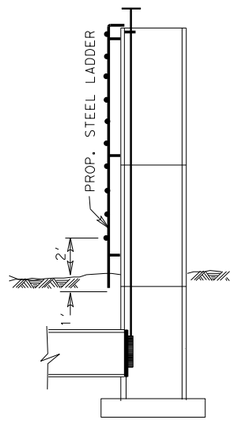
◇X AND FL "A" AS SHOWN ON PLANS ARE NOMINAL DESIGN DIMENSIONS AND MAY BE VARIED IN FIELD TO FIT EXISTING CONDITIONS.





DETAIL FOR CONC. COLLARS DRAINAGE STRUCTURES AND PIPE SIPHONS (HORIZ. & VERT. BENDS)

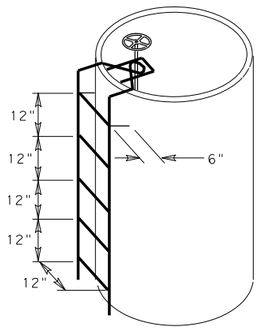
NOTE: PROP. CONC. COLLAR WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE BIDS ITEMS INVOLVED.



LADDER TO BE CONSTRUCTED OF ¾" DIA. REINF. STEEL. THE PARALLEL SIDEPIECES SPACED 12" APART TO BE HOOKED OVER TOP OF WELL AND STAND-OFFS WELDED AT TOP RUNG, AT THEIR MID-POINT AND BOTTOM. RUNGS TO BE WELDED TO SIDEPIECES AT 12" INTERVALS THE FIRST RUNG TO BE 2' FROM NATURAL GROUND.

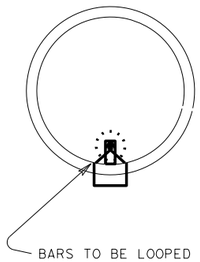
STEEL LADDER TO BE PAID FOR AS SUBSIDIARY TO PRICE OF WELL.

NOTE: COMMERCIAL FABRICATED OR CAST METAL STEPS MAY BE USED IF APPROVED BY THE ENGINEER AND/OR THE WATER DISTRICT INVOLVED.



STEEL LADDER DETAILS

TO BE USED ON ALL WELLS WITH GATES WHEN THE DISTANCE FROM NATURAL GROUND TO TOP OF WELL IS 6 FT. OR MORE.



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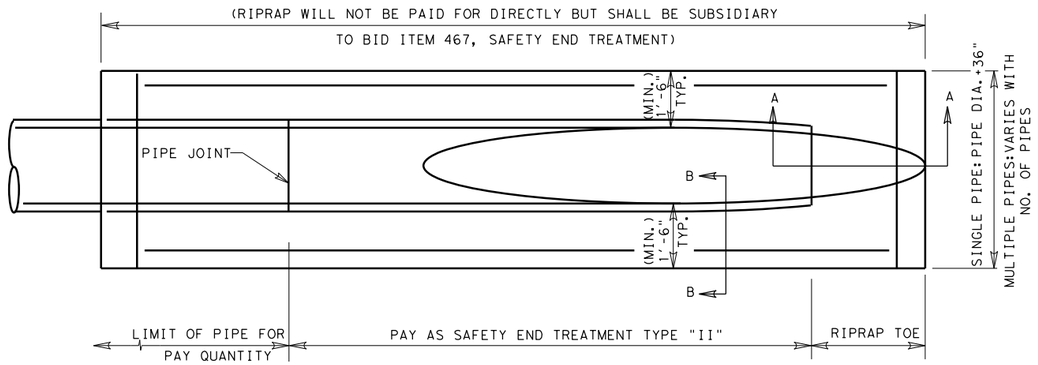
PHARR DISTRICT STANDARD

TEXAS DEPARTMENT OF TRANSPORTATION

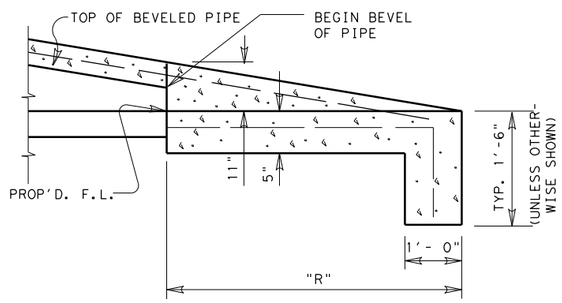
IRRIGATION CROSSING DETAIL

REV. 4/15 IRRIG1.DGN

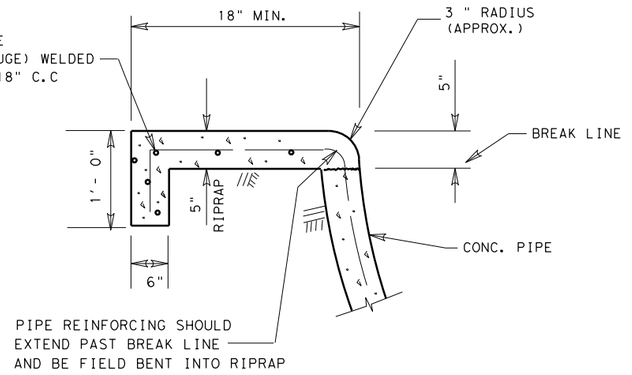
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.			FILE NO.			SHEET NO.
6							137
STATE	STATE DIST. NO.	COUNTY	CONTROL	SECT	JOB		HIGHWAY NO.
TEXAS	PHR	HIDALGO	-	-	-		MILPAS



PLAN VIEW



SEC. A-A



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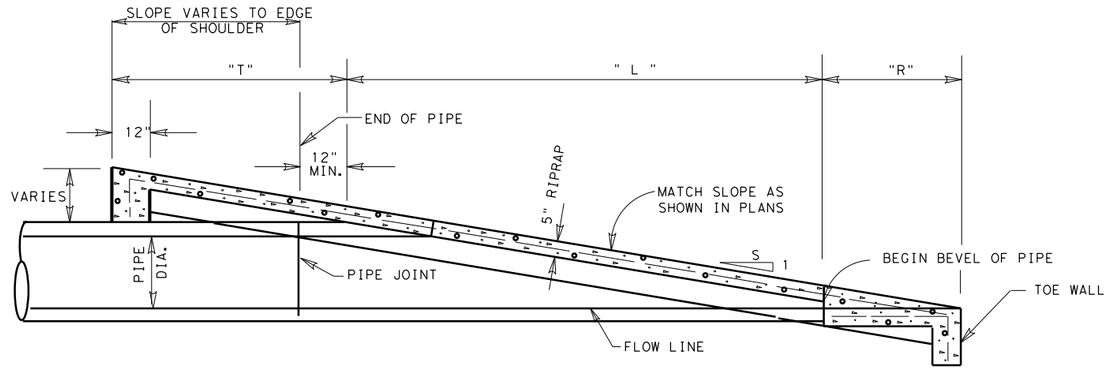


ELEVATION
SAFETY END TREATMENT

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"

⊗ DRIVEWAYS & TURNOUTS ARE 6:1 ONLY

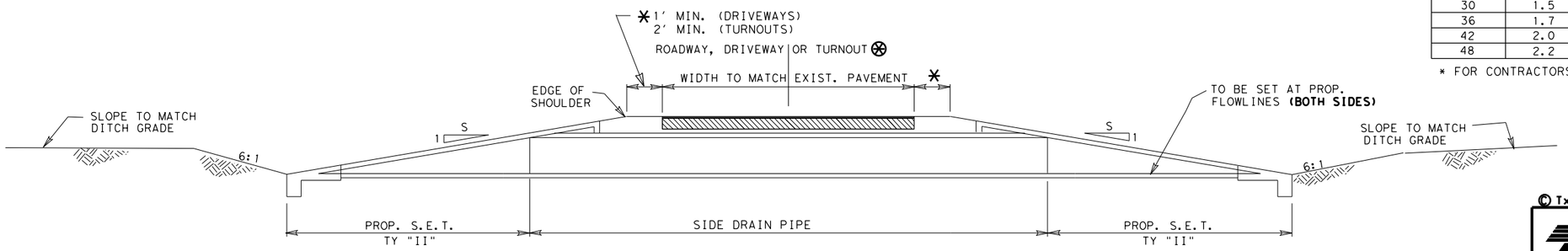
RIPRAP TOE LENGTHS

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. 9/16 SET.DGN

FED.RD. DIV.NO.	STATE AID PROJECT NO.	FILE NO.	SHEET NO.
6			138

STATE	STATE DIST. NO.	COUNTY	CONTROL	SECT	JOB	HIGHWAY NO.
TEXAS	PHR	HIDALGO	-	-	-	MILPAS

SITE DESCRIPTION

PROJECT LIMITS: LAS MILPAS HIGHWAY: FROM 0.17 MI. WEST OF SH 336 TO McCOLL ROAD

PROJECT SITE MAPS:
- Project Location Map: Title Sheet
- Drainage Patterns: Drainage Area Maps, Culvert Layouts, and Utility and Drainage Sheets
- Approx. Slopes Anticipated After Major Gradings and Areas of Soil Distrubance: Typ Sects
- Major Controls and Locations of Stabilization Practices: SW3P Sheets
- Project Specific Locations: To be specified by Project Field Office and located in the Project SW3P File
- Surface Waters and Discharge Locations: Utility and Drainage and Culvert Layout Sheets

PROJECT DESCRIPTION: Construct a new bridge in a new location, drainage culverts and stormsewer, irrigation structures, and traffic signals.

MAJOR SOIL DISTURBING ACTIVITIES: Soil disturbing activities will include preparing the right-of-way; excavation and embankment for installation of proposed drainage, irrigation, and bridge structures.

Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume and do whithin 21 days. Final seeding should be accomplished on all areas as soon as construction stage is complete.

TOTAL PROJECT AREA: 5.40 Acres

TOTAL AREA TO BE DISTURBED: 5.40 Acres (100%)

WEIGHTED RUNOFF COEFFICIENT:
Before Construction = 0.18
After Construction = 0.18

EXISTING CONDITION OF SOIL & VEGETATIVE Existing soil conditions are:
Harlingen Clay; soil characteristics include very deep, moderately well drained, sloped 0 ot 1 percent. Not considered prime farmland.
Runn Silty Clay; soil characteristics include deep, moderately well drained, sloped 0 to 1 percent. Soil is considered prime farmland

NAME OF RECEIVING WATERS:
All runoff drains into H.C.D.D. #1's drainage ditches that drain into the Main Floodwater Channel and ultimatley into the Laguna Madre.
The Laguna Madre is approximately 5 miles south of Port Mansfield (Stream Segment No. 2491)

ENDANGERED SPECIES, DESIGNATED CRITICAL HABITAT AND HISTORICAL PROPERTY:
No endangered species, designated critical habitats, or historical properties have been found on this project.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- ___ TEMPORARY SEEDING
- ___ MULCHING (Hay or Straw)
- ___ BUFFER ZONES
- ___ PLANTING
- ___ SEEDING
- ___ SODDING
- ___ OTHER: (Specify Practice)
- ___ PRESERVATION OF NATURAL RESOURCES
- ___ FLEXIBLE CHANNEL LINER
- ___ RIGID CHANNEL LINER
- ___ SOIL RETENTION BLANKET
- ___ COMPOST MANUFACTURED COMPOST
- T BIODEGRADABLE EROSION CONTROL SOCKS

STRUCTURAL PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- ___ SILT FENCES
- T BIODEGRADABLE EROSION CONTROL SOCKS
- ___ HAY BALES
- T ROCK FILTER DAMS
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ___ DIVERSION DIKE AND SWALE COMBINATIONS
- ___ PIPE SLOPE DRAINS
- ___ PAVED FLUMES
- ___ ROCK BEDDING AT CONSTRUCTION EXIT
- T TIMBER MATTING AT CONSTRUCTION EXIT
- ___ CHANNEL LINERS
- ___ SEDIMENT TRAPS
- ___ SEDIMENT BASINS
- T STORM INLET SEDIMENT TRAP
- ___ STONE OUTLET STRUCTURES
- ___ CURBS AND GUTTERS
- P STORM SEWERS
- ___ VELOCITY CONTROL DEVICES
- ___ OTHER: (Specify Practice)

STORM WATER MANAGEMENT: Drainage runoff will continue to drain following the natural contour of the land and new down drains, culverts, and storm sewer pipes will be installed to receive the existing runoff and outfall into HCDD #1's drainage ditches.

STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction)

The order of activities will be as follows:
1.- Install perimeter controls, advance warning signs, and make required utility adjustments
2. Install Proposed drainage box culverts, irrigation structures, and bridge structure.
3. Install traffic signal and flashing beacon.

NON-STORM WATER MANAGEMENT DISCHARGES:
Non-storm water discharges should be filtered, or held in retention basins, before being allowed to mix with storm water. These discharges consist of non-polluted ground water, spring water, foundation and/or footing drain water; and water used for dust control, pavement washing and vehicle wastewater containing no detergents.

OTHER REQUIREMENTS & PRACTICES

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: An inspection will be performed by a County Inspector every 14 calendar days as well as after every half inch or more of rain (as recorded on a non-freezing rain guage to be located at the Project Site). An inspection and Maintenance Report will be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report.

WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all state and local solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulation and the trash will be hauled to a local dump. No construction waste material will be buried on site.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories to be hazardous: Paints, Acids for cleaning masonry surfaces, Cleaning Solvents, Asphalt products, Chemical additives for soil stabilization, or Concrete curing compounds and additives. In the event of a spill which may be hazardous, the spill Coordinator should be contacted immediately. Emptying of excess concrete should not be allowed on site. Likewise, washout of concrete trucks should not be performed on site. These discharges are considered non-allowable non-storm water discharges. Concrete trucks should never be allowed to dump into storm drains or sanitary sewers.

SANITARY WASTE: All sanitary waste will be collected from the portable units as necessary or as required by local regulation by a licensed sanitary waste management contractor.

OFFSITE VEHICLE TRACKING: The Contractor shall be required, on a regular basis or as may be directed by the county, to dampen haul roads for dust control, stabilize construction entrances and to remove excess dirt from the roadway.

MANAGEMENT PRACTICES:
1. Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wet land, water body or stream bed.
2. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants.
3. All waterways shall be cleared, as soon as practical, of temporary embankment, temporary bridges, matting, false work, piling, or debris or other obstructions placed during construction operations that are not a part of the finished work.
4. This plan is a working document, and must be kept current in order to comply with EPA standards.

OTHER:

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

SW3P.DGN

FED.RD. DIV.NO.	PROJECT NO.	SHEET NO.
6		139

STATE	DIST.	COUNTY	
TEXAS	PHARR	HIDALGO	
CONT.	SECT.	JOB	HIGHWAY NO.
-	-	-	MILPAS

(HCDA 07-12-22

BEGIN PROJECT
LAS MILPAS ROAD
STA. 103+09.00

PC 103+09.23

105+00

DL-ST 3-15'

3-15' DL-ST

EXIST. R.O.W.

PROP. LAS MILPAS ROAD ℄

PT 110+29.35

110+00

PRC 109+99.29

DI-ST 30'

PROP. R.O.W.

CONSTRUCTION EXIT (INSTALL) (TY 2) 78 SY

SH 336

SH 336

CONSTRUCTION EXIT (INSTALL) (TY 2) 78 SY

RFD4 50'

50' RFD4

DL-ST 3-15'

3-15' DL-ST

S 60° 34' 07.34" E

CAMINO

140+00

PT 140+03.54

145+00

3-15' DL-ST

DL-ST 3-15'

50' RFD4

RFD4 50'

END PROJECT
LAS MILPAS ROAD
STA. 170+91.00

McCOLL RD

McCOLL RD

DI-ST 30'

S 81° 22' 14.21" E

165+00

170+00

DI-ST 30'

CONSTRUCTION EXIT (INSTALL) (TY 2) 78 SY

SHEET SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
160	FURNISHING AND PLACING TOPSOIL	CY	
164	CELL FBR MLCH SEED (TEMP)(WARM)	AC	
164	CELL FBR MLCH SEED (PERM)(RURAL)(SANDY)	AC	
166	FERTILIZER ***NON-PAY***	TON	
168	VEGETATIVE WATERING	MG	
506	CONSTRUCTION EXITS (INSTALL)(TY 2)	SY	234
506	CONSTRUCTION EXITS (REMOVE)	SY	234
506	ROCK FILTER DAM (INSTALL)(TY 4)	HR	200
506	ROCK FILTER DAM (REMOVE)	LF	200
506	BIOGRD EROSN CONT LOGS (12" DIA) INSTALL	LF	360
506	BIOGRD EROSN CONT LOGS REMOVE	LF	360

LEGEND

- PROP. LT. SEEDING AREA
- PROP. RT. SEEDING AREA
- PROP. CONSTRUCTION EXIT (TY 2)
- RFD4 XX' — PROP. ROCK FILTER DAM TY 4 AND LENGHT (LF)
- DI-ST XX' — PROP. DROP INLET SEDIMENT TRAP AND LENGTH (LF)
- DL-ST XX' — PROP. DITCH LINE SEDIMENT TRAP (LOG) AND LENGTH (LF)

STATE OF TEXAS
OLIVER F. SALGADO
103749
LICENSED PROFESSIONAL ENGINEER
12/27/2021
P.E.

B2Z ENGINEERING
TBPE FIRM NO. F-11187

HIDALGO COUNTY PRECINCT 2
COMMISSIONER
EDUARDO "EDDIE" CANTU

LAS MILPAS ROAD
SW3P LAYOUT
STA. 103+09.00 TO 107+91.00

SCALE: 1" = 100' SHEET 1 OF 1

FED.RD. DIV.NO.	STATE AID PROJECT NO.	FILE NO.	SHEET NO.
6			140

STATE	STATE DIST.NO.	COUNTY	CONT.	SECT.	JOB	HIGHWAY NO.
TX	PHR	HIDALGO	-	-	-	MILPAS

P:\Clients\Firms\B2Z\Las Milpas\Design\000_PLANSET_BID OUT\08 ENVIRONMENTAL\LAS MILPAS_SW3P01.dgn
12/27/2021

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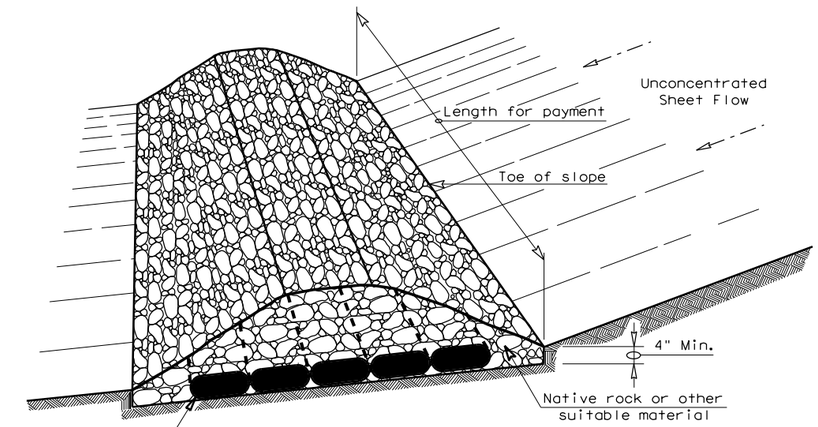
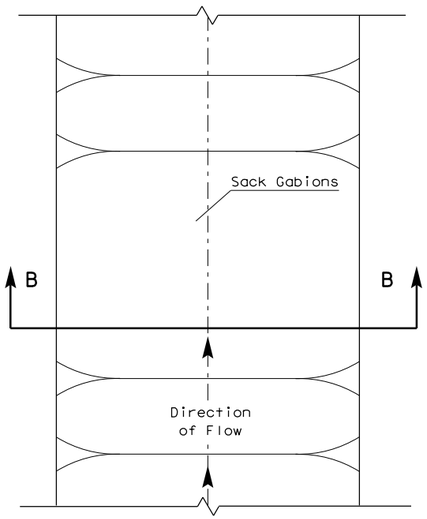
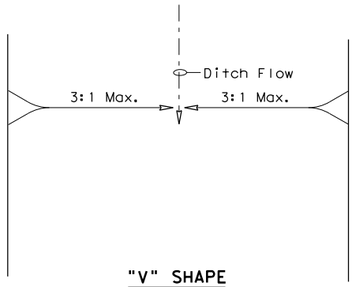


FILTER DAM AT TOE OF SLOPE

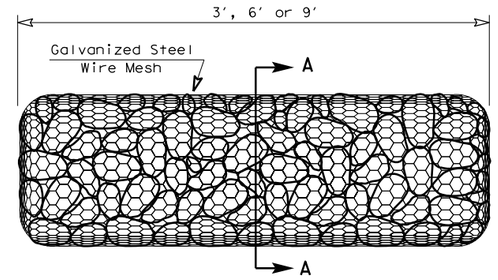
RFD1



PLAN VIEW

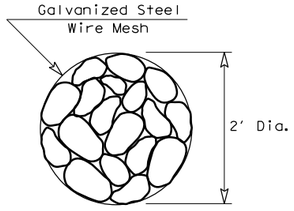


"V" SHAPE
PLAN VIEW



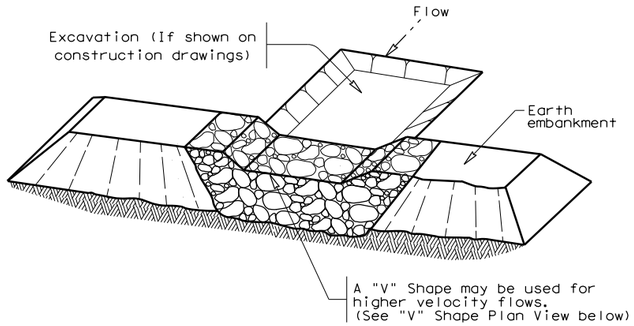
TYPE 4 (SACK GABIONS)

RFD4



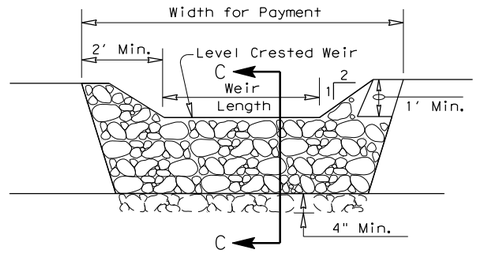
SECTION A-A

SECTION B-B

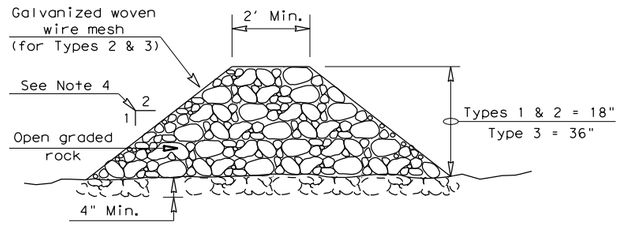


FILTER DAM AT SEDIMENT TRAP

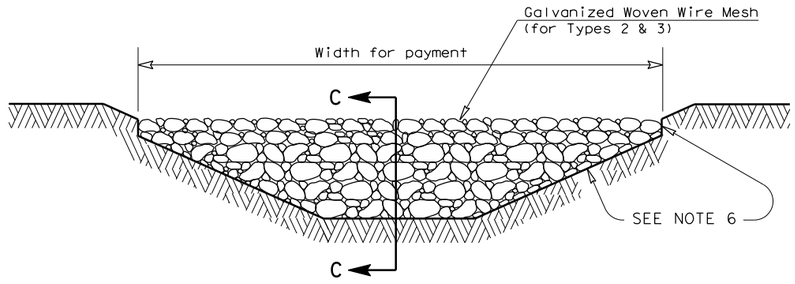
RFD1 OR RFD2



PROFILE



SECTION C-C



FILTER DAM AT CHANNEL SECTIONS

RFD1 OR RFD2 OR RFD3

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼"
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam	RFD1
Type 2 Rock Filter Dam	RFD2
Type 3 Rock Filter Dam	RFD3
Type 4 Rock Filter Dam	RFD4

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT^2 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

Texas Department of Transportation — Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

EC(2)-16

FILE: ec216	DN: TxDOT	CK: HEJ	DW: BD	CK:
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		141

DATE:
FILE: EC-22-0094-09-06 (ARPA-22-122-109)
HCTX & GO Underground L.L.C.
"Las Milpas Road Drainage, Bridge, and Traffic Signal Installation Project"

(HCDA 07-22-22

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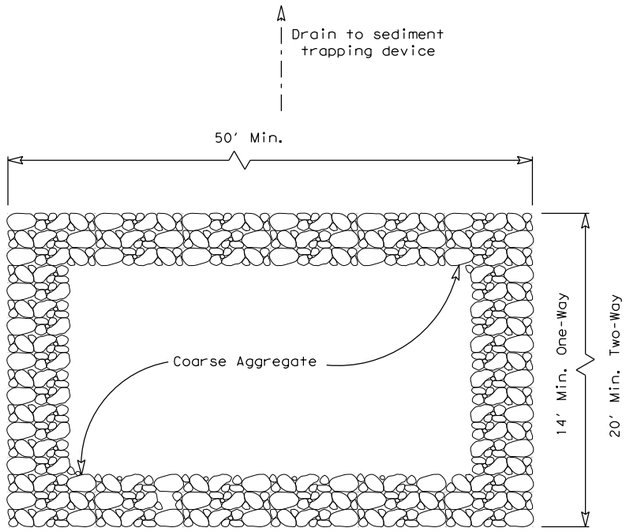
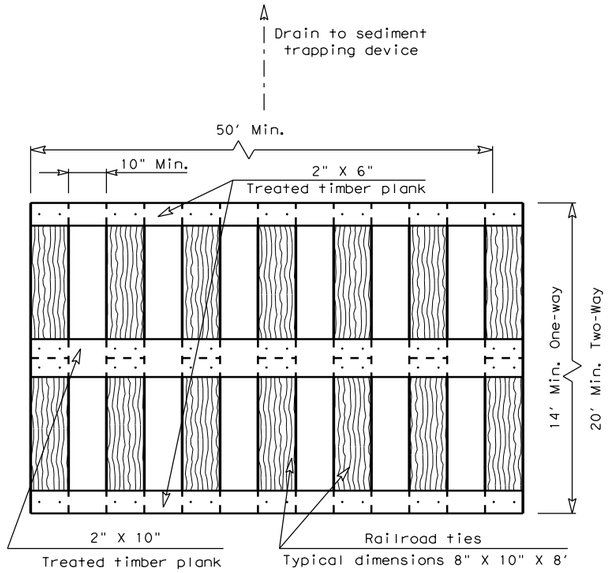
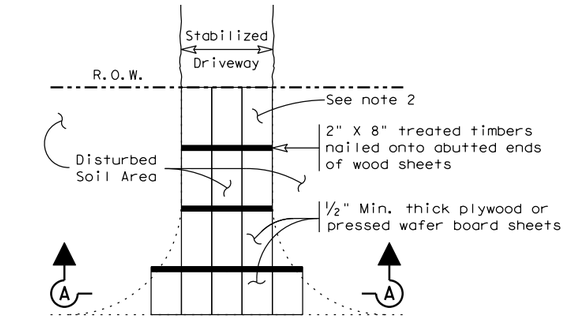


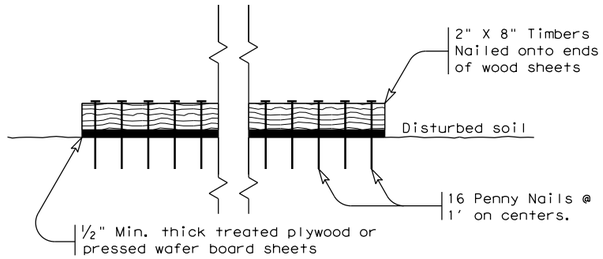
PLAN VIEW



PLAN VIEW



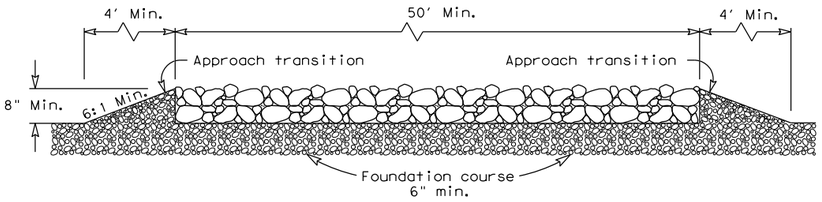
PLAN VIEW



SECTION A-A

CONSTRUCTION EXIT (TYPE 3)

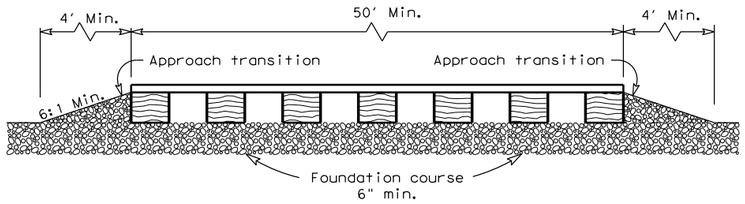
SHORT TERM



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

ROCK CONSTRUCTION (LONG TERM)



ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materialas approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. 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 by the engineer.

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with ½"x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. 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 by the engineer.

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

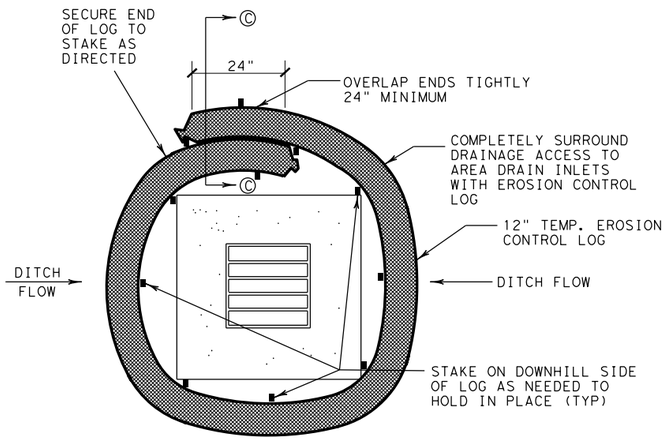
CONSTRUCTION EXITS

EC(3)-16

FILE:	DN: TxDOT	CK: HEJ	DW: BD	CK:
©TxDOT:	CONT	SECT	JOB	HIGHWAY
REVISIONS	-	-	-	MILPAS
	DIST	COUNTY		SHEET NO.
	PHR	HIDALGO		142

DATE:
FILE:

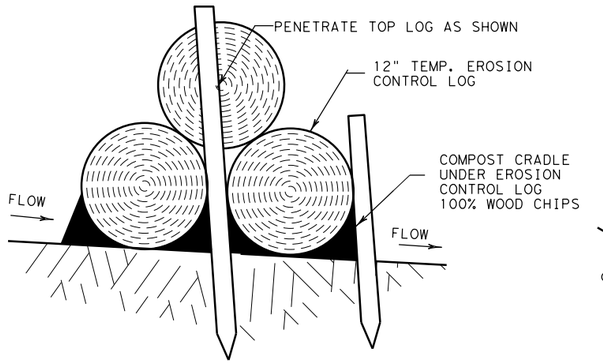
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the completeness of this standard in other formats or for incorrect results or damages resulting from its use.



DROP INLET SEDIMENT TRAP

NTS

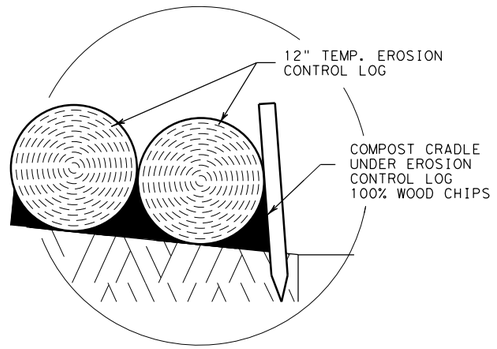
DI-ST



SECTION A-A

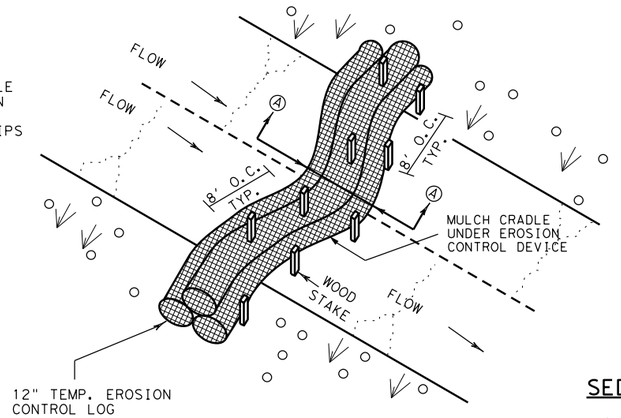
DITCH LINE SEDIMENT TRAP A-A

DL-ST



SECTION C-C

OVERLAP WITH COMPOST CRADLE



DITCH LINE SEDIMENT TRAP

DL-ST

PLANS SHEET LEGEND

DI-ST — DROP INLET SEDIMENT TRAP

DL-ST — DITCH LINE SEDIMENT TRAP

BOCI-ST — BACK OF CURB INLET SEDIMENT TRAP

ROW-ST — RIGHT OF WAY SEDIMENT TRAP

CI-ST — CURB INLET SEDIMENT TRAP

SEDIMENT BASIN & TRAP USAGE GUIDELINES

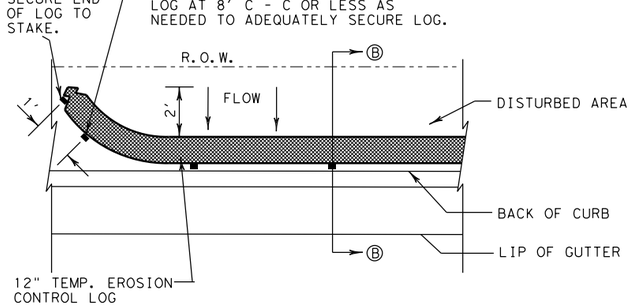
A sediment trap may be used to precipitate sediment out of runoff draining from an unstabilized area.

Traps: the drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following locations:

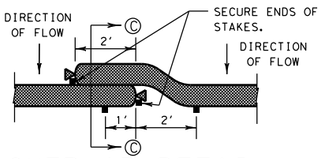
1. Immediately preceding drain inlets
2. Just before the drainage enters a water course
3. Just before the drainage leaves the right of way
4. Just before the drainage leaves the construction limits where drainage flows away from the project

The trap should be cleaned when the capacity has been reduced by ½ or the sediment has accumulated to a depth of 1', whichever is less. Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for seperately.



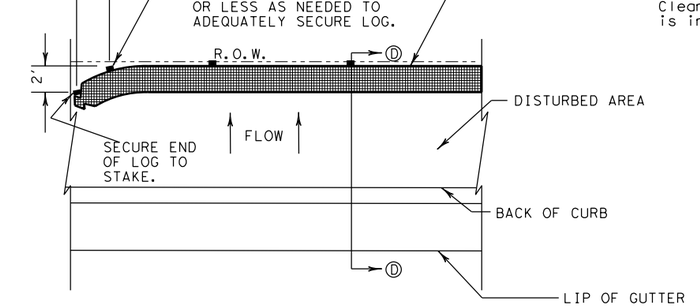
PLAN VIEW

NTS



OVERLAP DETAIL PLAN VIEW

NTS

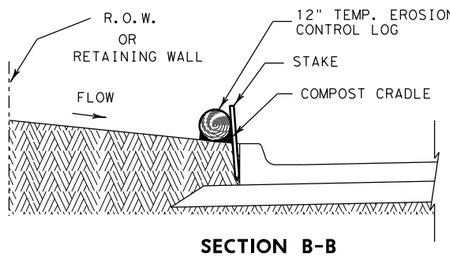


PLAN VIEW

NTS

GENERAL NOTES

1. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
2. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
3. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
4. STAKES SHALL BE 2" X 2" WOOD 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG.
5. COMPOST CRADLE MATERIAL IS INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.

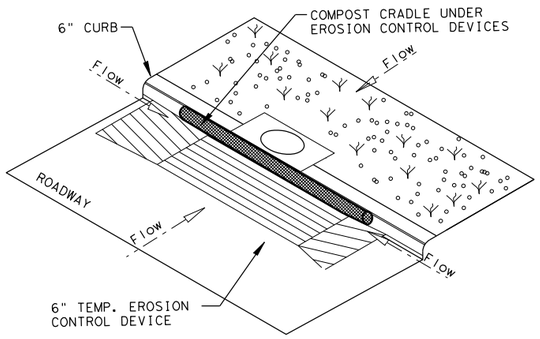


SECTION B-B

BACK OF CURB INLET SEDIMENT TRAP

NTS

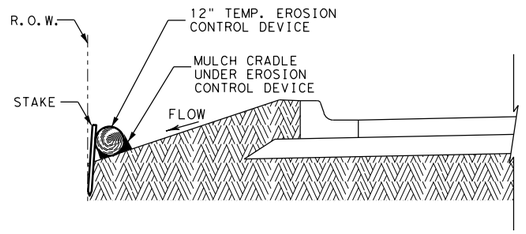
BOCI-ST



CURB INLET SEDIMENT TRAP

NTS

CI-ST



SECTION D-D

RIGHT-OF-WAY SEDIMENT TRAP

NTS

ROW-ST

PHARR DISTRICT STANDARD

Texas Department of Transportation

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TEMPORARY EROSION CONTROL LOGS TECL-17 (PHR)

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
6			MILPAS
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	PHR	HIDALGO	
CONTROL	SECTION	JOB	143
-	-	~~(HCDA 07-12-22~~ -	

LEVELS DISPLAYED
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 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

DATE: 12/27/2021 11:56:10 AM
FILE: D:\Las Milpas\Design\000_PLANSET_BID OUT\10 STANDARDS\11 SW3P\TECLOG.dgn

EXHIBIT B

Bid Page

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
132	6006		EMBKMT (FINAL) (DENS CONT) (TY C) TWELVE DOLLARS and CENTS	CY	16,458.00	$12.00	$197,470.52
400	6010		STRUCT EXCAV (SPL) SIXTY DOLLARS and CENTS	CY	314.00	$60.00	$18,840.00
400	6011		SAND BACKFILL FIFTY DOLLARS and CENTS	CY	5,320.00	$50.00	$266,000.00
402	6001		TRENCH EXCAVATION PROTECTION TWO DOLLARS and CENTS	LF	4,965.00	$2.00	$9,930.00
432	6001		RIPRAP (CONC) (4") FIVE HUNDRED FIFTY FIVE DOLLARS and CENTS	CY	263.00	$555.00	$145,965.00
462	6016		CONC BOX CULV (7'X5') FIVE HUNDRED SIXTY TWO DOLLARS and EIGHTY FIVE CENTS	LF	89.00	$562.85	$50,094.00
462	6018		CONC BOX CULV (7'X7') SEVEN HUNDRED FIFTY ONE DOLLARS and CENTS	LF	271.00	$751.00	$203,521.00
462	6042		CONC BOX CULV (12'X8') ONE THOUSAND FIVE HUNDRED SIX DOLLARS and CENTS	LF	288.00	$1,506.00	$433,728.00
464	6002		RC PIPE (CL III)(15") SIXTY ONE DOLLARS and EIGHTY ONE CENTS	LF	299.00	$61.81	$18,481.00
464	6003		RC PIPE (CL III)(18") SIXTY FOUR DOLLARS and FIFTY SEVEN CENTS	LF	582.00	$64.57	$37,582.00
464	6005		RC PIPE (CL III)(24") SEVENTY TWO DOLLARS and NINETY TWO CENTS	LF	142.00	$72.92	$10,354.00
464	6008		RC PIPE (CL III)(36") EIGHTY THREE DOLLARS and TWENTY EIGHT CENTS	LF	144.00	$83.28	$11,992.00
464	6043		RC PIPE (CL III)(48")(SPL) ONE HUNDRED SIXTY FIVE DOLLARS and TEN CENTS	LF	3,341.00	$165.10	$551,604.00

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
465	6009		JCTBOX (COMPL)(PJB)(5'X5') FIVE THOUSAND THREE HUNDRED DOLLARS and CENTS	EA	1.00	$5,300.00	$5,300.00
465	6011		JCTBOX (COMPL)(PJB)(6'X6') SIX THOUSAND SIX HUNDRED FIFTY DOLLARS and CENTS	EA	2.00	$6,650.00	$13,300.00
465	6130		INLET (COMPL)(PSL)(FG)(3'X5' - 3'X5') THREE THOUSAND NINE HUNDRED DOLLARS and CENTS	EA	2.00	$3,900.00	$7,800.00
465	6365		JCTBOX (COMPL)(CIP)(10'X10') TWENTY TWO THOUSAND DOLLARS and CENTS	EA	1.00	$22,000.00	$22,000.00
466	6210		WINGWALL (SW-0)(HW=7') TWENTY SEVEN THOUSAND DOLLARS and CENTS	EA	1.00	$27,000.00	$27,000.00
466	6254		WINGWALL (SW-0)(HW=10') FIFTEEN THOUSAND SEVEN HUNDRED FIFTY DOLLARS and CENTS	EA	4.00	$15,750.00	$63,000.00
467	6363		SET (TY II)(18")(RCP)(6:1)(P) ONE THOUSAND THREE HUNDRED FIFTY DOLLARS and CENTS	EA	4.00	$1,350.00	$5,400.00
479	6002		ADJUSTING INLETS ONE THOUSAND TWO HUNDRED DOLLARS and CENTS	EA	1.00	$1,200.00	$1,200.00
496	6003		REMOV STRUCT (MANHOLE) EIGHT HUNDRED DOLLARS and CENTS	EA	1.00	$800.00	$800.00
496	6005		REMOV STRUCT (WINGWALL) TWO THOUSAND FIVE HUNDRED DOLLARS and CENTS	EA	1.00	$2,500.00	$2,500.00
496	6007		REMOV STRUCT (PIPE) FIVE DOLLARS and CENTS	LF	3,508.00	$5.00	$17,540.00
500	6001		MOBILIZATION TWENTY FIVE THOUSAND DOLLARS and CENTS	LS	1.00	$25,000.00	$25,000.00
502	6001		BARRICADES, SIGNS, AND TRAFFIC HANDLING TWO THOUSAND TWO HUNDRED DOLLARS and CENTS	MO	8.00	$2,200.00	$17,600.00

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
506	6004		ROCK FILTER DAMS (INSTALL) (TY 4) TWENTY TWO DOLLARS and CENTS	LF	200.00	$22.00	$4,400.00
506	6011		ROCK FILTER DAMS (REMOVE) EIGHT DOLLARS and CENTS	LF	200.00	$8.00	$1,600.00
506	6021		CONSTRUCTION EXIT (INSTALL) (TY 2) TWENTY TWO DOLLARS and CENTS	SY	234.00	$22.00	$5,148.00
506	6024		CONSTRUCTION EXIT (REMOVE) TWELVE DOLLARS and CENTS	SY	234.00	$12.00	$2,808.00
506	6041		BIODEG EROSN CONT LOGS (INSTL) (12") SIX DOLLARS and CENTS	LF	360.00	$6.00	$2,160.00
506	6043		BIODEG EROSN CONT LOGS (REMOVE) TWO DOLLARS and CENTS	LF	360.00	$2.00	$720.00
1007	6007		IRRIGATION VALVE (12") FIVE THOUSAND ONE HUNDRED EIGHTEEN DOLLARS and CENTS	EA	1.00	$5,118.00	$5,118.00
1007	6009		IRRIGATION WELL (36") NINE THOUSAND TWO HUNDRED DOLLARS and CENTS	EA	1.00	$9,200.00	$9,200.00
1007	6012		IRRIGATION GATE (12") FIVE THOUSAND NINETY SIX DOLLARS and FIFTY CENTS	EA	2.00	$5,096.50	$10,193.00
1008	6001		PRSSR IRRG PVC PIPE (18") NINETY SIX DOLLARS and TWELVE CENTS	LF	104.00	$96.12	$9,996.00
1008	6002		PRSSR IRRG PVC PIPE (24") ONE HUNDRED TWENTY FOUR DOLLARS and FORTY ONE CENTS	LF	144.00	$124.41	$17,915.00
1008	6003		PRSSR IRRG PVC PIPE (12") FIFTY EIGHT DOLLARS and ONE CENTS	LF	76.00	$58.01	$4,409.00

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
7049	6054		SPLIT STEEL CASING (24") ONE HUNDRED SIXTY EIGHT DOLLARS and CENTS	LF	280.00	$168.00	$47,040.00
					TOTAL BID	$	2,284,708.52

TWO MILLION TWO HUNDRED EIGHTY FOUR THOUSAND SEVEN HUNDRED EIGHT DOLLARS WITH FIFTY TWO CENTS
TOTAL IN WORDS

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will prevail.)
The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
Bidder understands that the Owner reserves the right to reject any or all bids to waive any minor informalities in the bidding.

ADDITIVE ALTERNATIVE NO. 1							
400	6005		CEM STABIL BKFL EIGHTY DOLLARS and CENTS	CY	245.00	$80.00	$19,600.00
409	6001		PRESTR CONC PIL (16IN SQ) ONE HUNDRED NINETY FOUR DOLLARS and TWENTY THREE CENTS	LF	1,240.00	$194.23	$240,840.00
409	6004		PRESTR CONC PIL (24IN SQ) TWO HUNDRED SIXTY SEVEN DOLLARS and FIFTY TWO CENTS	LF	420.00	$267.52	$112,360.00
420	6013		CL C CONC (ABUT) ONE THOUSAND TWO HUNDRED DOLLARS and CENTS	CY	57.70	$1,200.00	$69,240.00
420	6025		CL C CONC (BENT) ONE THOUSAND DOLLARS and CENTS	CY	22.90	$1,000.00	$22,900.00
422	6001		REINF CONC SLAB TWENTY DOLLARS and CENTS	SF	9,000.00	$20.00	$180,000.00
425	6037		PRESTR CONC GIRDER (TX40) TWO HUNDRED NINETY SEVEN DOLLARS and CENTS	LF	1,074.00	$297.00	$318,978.00
450	6023		RAIL (TY SSTR) SIXTY FIVE DOLLARS and CENTS	LF	723.00	$65.00	$46,995.00

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
454	6018		SEALED EXPANSION JOINT (4IN) (SEJ-M) ONE HUNDRED FORTY FIVE DOLLARS and CENTS	LF	106.00	$145.00	$15,370.00
			ADDITIVE ALTERNATIVE NO. 1 TOTAL BID	$	1,026,283.00		

ONE MILLION TWENTY SIX THOUSAND TWO HUNDRED EIGHTY THREE DOLLARS WITH ZERO CENTS
TOTAL IN WORDS

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will prevail.)
The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
Bidder understands that the Owner reserves the right to reject any or all bids to waive any minor informalities in the bidding.

ADDITIVE ALTERNATIVE NO. 2							
416	6032		DRILL SHAFT (TRF SIG POLE) (36 IN) EIGHT HUNDRED THREE DOLLARS and THIRTY THREE CENTS	LF	26.20	$803.33	$21,047.32
416	6034		DRILL SHAFT (TRF SIG POLE) (48 IN) SEVEN HUNDRED ELEVEN DOLLARS and NINETY EIGHT CENTS	LF	87.60	$711.98	$62,369.20
618	6033		CONDT (PVC) (SCH 40) (4") TWENTY SEVEN DOLLARS and CENTS	LF	334.00	$27.00	$9,018.00
618	6034		CONDT (PVC) (SCH 40) (4")(BORE) FORTY FIVE DOLLARS and THIRTY SIX CENTS	LF	222.00	$45.36	$10,069.92
620	6007		ELEC CONDR (NO.8) BARE ONE DOLLARS and SEVENTY THREE CENTS	LF	606.00	$1.73	$1,046.52
620	6009		ELEC CONDR (NO.6) BARE ONE DOLLARS and EIGHTY FOUR CENTS	LF	13.00	$1.84	$23.87
620	6010		ELEC CONDR (NO.6) INSULATED TWO DOLLARS and CENTS	LF	38.00	$2.00	$75.92
621	6005		TRAY CABLE (4 CONDR) (12 AWG) TWO DOLLARS and FORTY EIGHT CENTS	LF	945.00	$2.48	$2,346.84
624	6002		GROUND BOX TY A (122311) W/APRON NINE HUNDRED SIXTY ONE DOLLARS and TWENTY CENTS	EA	6.00	$961.20	$5,767.20
624	6010		GROUND BOX TY D (162922) W/APRON ONE THOUSAND TWO HUNDRED FORTY TWO DOLLARS and CENTS	EA	1.00	$1,242.00	$1,242.00

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
625	6003		ZINC-COAT STL WIRE STRAND (3/8") THREE DOLLARS and SEVENTY EIGHT CENTS	LF	155.00	$3.78	$585.36
628	6301		ELC SRV TY T 120/240 000(NS)GS(L)TS(O) THREE THOUSAND SIX HUNDRED SEVENTY TWO DOLLARS and CENTS	EA	2.00	$3,672.00	$7,344.00
680	6001		INSTALL HWY TRF SIG (FLASH BEACON) TWO THOUSAND FOUR HUNDRED THIRTY DOLLARS and CENTS	EA	1.00	$2,430.00	$2,430.00
680	6002		INSTALL HWY TRF SIG (ISOLATED) TWNETY FOUR THOUSAND THREE HUNDRED DOLLARS and CENTS	EA	1.00	$24,300.00	$24,300.00
680	6004		REMOVING TRAFFIC SIGNALS TWO THOUSAND THREE HUNDRED FIFTY FOUR DOLLARS and FOURTY CENTS	EA	1.00	$2,354.40	$2,354.40
682	6001		VEH SIG SEC (12")LED(GRN) TWO HUNDRED EIGHTY NINE DOLLARS and FORTY FOUR CENTS	EA	8.00	$289.44	$2,315.52
682	6002		VEH SIG SEC (12")LED(GRN ARW) THREE HUNDRED SEVEN DOLLARS and EIGHTY CENTS	EA	4.00	$307.80	$1,231.20
682	6003		VEH SIG SEC (12")LED(YEL) TWO HUNDRED EIGHTY NINE DOLLARS and FORTY FOUR CENTS	EA	12.00	$289.44	$3,473.28
682	6004		VEH SIG SEC (12")LED(YEL ARW) THREE HUNDRED SEVEN DOLLARS and EIGHTY CENTS	EA	8.00	$307.80	$2,462.40
682	6005		VEH SIG SEC (12")LED(RED) TWO HUNDRED EIGHTY NINE DOLLARS and FORTY FOUR CENTS	EA	12.00	$289.44	$3,473.28
682	6006		VEH SIG SEC (12")LED(RED ARW) THREE HUNDRED SEVEN DOLLARS and EIGHTY CENTS	EA	4.00	$307.80	$1,231.20
682	6023		BACK PLATE (12")(3 SEC) ONE HUNDRED EIGHTEEN DOLLARS and EIGHTY CENTS	EA	8.00	$118.80	$950.40
682	6024		BACK PLATE (12")(4 SEC) TWO HUNDRED FIVE DOLLARS and TWENTY CENTS	EA	4.00	$205.20	$820.80

LAS MILPAS ROAD DRAINAGE, BRIDGE, AND TRAFFIC SIGNAL SYSTEM INSTALLATION PROJECT							
Item	Code	ALT	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
684	6010		TRF SIG CBL (TY A)(12 AWG)(5 CONDR) TWO DOLLARS and FIVE CENTS	LF	1,037.00	$2.05	$2,127.92
684	6012		TRF SIG CBL (TY A)(12 AWG)(7 CONDR) TWO DOLLARS and FORTY EIGHT CENTS	LF	987.00	$2.48	$2,451.60
686	6007		INS TRF SIG PL AM (S)STR(TY B) SIX THOUSAND SIX HUNDRED NINETY SIX DOLLARS and CENTS	EA	2.00	$6,696.00	$13,392.00
686	6059		INS TRF SIG PL AM(S)1 ARM(55')LUM FORTY THOUSAND ONE HUNDRED SEVENTY SIX DOLLARS and CENTS	EA	4.00	$40,176.00	$160,704.00
6306	6001		VIVDS PROSR SYS FIVE THOUSAND TWO HUNDRED SIXTEEN DOLLARS and FORTY CENTS	EA	1.00	$5,216.40	$5,216.40
6306	6003		VIVDS CAM ASSY VAR LNS SEVEN THOUSAND FOUR HUNDRED FIFTY TWO DOLLARS and CENTS	EA	4.00	$7,452.00	$29,808.00
6306	6007		VIVDS CABLING THREE DOLLARS and FORTY SIX CENTS	LF	927.00	$3.46	$3,203.71
6061	6001		GPS COMMUNICATIONS UNIT NINE HUNDRED TWELVE DOLLARS and SIXTY CENTS	EA	1.00	$912.60	$912.60
			ADDITIVE ALTERNATIVE NO. 2 TOTAL BID			$	$383,794.87

THREE HUNDRED EIGHTY THREE THOUSAND SEVEN HUNDRED NINETY FOUR DOLLARS WITH EIGHTY SEVEN CENTS
TOTAL IN WORDS

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will prevail.)
The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
Bidder understands that the Owner reserves the right to reject any or all bids to waive any minor informalities in the bidding.

EXHIBIT C

Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 09/06/2022

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 have ADDITIONAL INSURED provisions or 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 Shepard Insurance Group 5801 N 10th St Suite 600 McAllen TX 78504	**CONTACT NAME:** Patricia Cantu **PHONE (A/C, No, Ext):** **FAX (A/C, No):** **E-MAIL ADDRESS:** Pat.Cantu@relationinsurance.com
INSURED Go Underground LLC 217 E Monroe Ave Harlingen TX 78550-5519	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** United Fire Lloyds **INSURER B :** Texas Mutual Insurance Company **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** Masater 2022 2023 **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 INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC ☐ OTHER:			85323523	04/11/2022	04/11/2023	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY			85323523	04/11/2022	04/11/2023	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Uninsured motorist	$ 1,000,000 $ $ $ $
A	☒ UMBRELLA LIAB ☒ OCCUR EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $			85323523	04/11/2022	04/11/2023	EACH OCCURRENCE AGGREGATE	$ 2,000,000 $ 2,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		0001129846	04/11/2022	04/11/2023	☐ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1000000 $ 1000000 $ 1000000
A	Contractors Equipment			85323523	04/11/2022	04/11/2023	Blanket Limit Includes Rental & Leased Equipment	$1,137,328

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

[Job #: 22-0094-04-05-JDC Job Type: Las Milpas Road Drainage, Bridge, and Traffic Sign]
GL – Blanket Additional Insured included as per form CG2010 1219 & CG2037 1219; Blanket Waiver of Subrogation included as per form CG7208 0717; Primary/Non-Contributory wording included as per form CG2001 1219
Auto – Blanket Additional Insured included as per form CA7109 0117; Blanket Waiver of Subrogation included as per form CA7109 0117
Primary Non Contributory as per form CA0449 1116

Workers' Compensation– Blanket Waiver of Subrogation included as per form WC420304B

CERTIFICATE HOLDER	CANCELLATION
Hidalgo County Purchasing Department 2802 S. Bus Hwy 281 Edinburg TX 78539	**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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POLICY NUMBER: 85323523

COMMERCIAL GENERAL LIABILITY
CG 20 10 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
ANY PERSON OR ORGANIZATION TO WHOM YOU HAVE AGREED TO NAME AS ADDITIONAL INSURED BY WRITTEN CONTRACT OR AGREEMENT IF THE CONTRACT OR	AGREEMENT IS EXECUTED PRIOR TO LOCATIONS DESIGNATED AND DESCRIBED IN THE ABOVE MENTIONED WRITTEN CONTRACT OR AGREEMENT
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

PREMIUM 250

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

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C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

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POLICY NUMBER: 85323523

COMMERCIAL GENERAL LIABILITY
CG 20 37 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following: PREMIUM 1,000

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location And Description Of Completed Operations
ANY PERSON OR ORGANIZATION TO WHOM YOU HAVE AGREED TO NAME AS ADDIT-	LOCATIONS DESIGNATED AND DESCRIBED IN THE ABOVE
IONAL INSURED BY WRITTEN CONTRACT OR AGREEMENT IF THE CONTRACT OR	MENTIONED WRITTEN CONTRACT OR AGREEMENT
AGREEMENT IS EXECUTED PRIOR TO LOSS	
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

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TEXAS - EXTENDED ULTRA LIABILITY PLUS ENDORSEMENT

COMMERCIAL GENERAL LIABILITY EXTENSION ENDORSEMENT SUMMARY OF COVERAGES

This is a summary of the various additional coverages and coverage modifications provided by this endorsement. No coverage is provided by this summary.

* Extended Property Damage
* Expanded Fire Legal Liability to include Explosion, Lightning and Sprinkler Leakage
* Coverage for non-owned watercraft is extended to 51 feet in length
* Property Damage – Borrowed Equipment
* Property Damage Liability – Elevators
* Coverage D – Voluntary Property Damage Coverage
  $5,000 Occurrence with a $10,000 Aggregate
* Coverage E – Care, Custody and Control Property Damage Coverage
  $25,000 Occurrence with a $100,000 Aggregate – $500 Deductible
* Coverage F – Electronic Data Liability Coverage – $50,000
* Coverage G – Product Recall Expense
  $25,000 Each Recall Limit with a $50,000 Aggregate – $1,000 Deductible
* Coverage H – Water Damage Legal Liability – $25,000
* Coverage I – Designated Operations Covered by a Consolidated (Wrap-Up) Insurance Program – Limited Coverage
* Increase in Supplementary Payments: Bail Bonds to $1,000
* Increase in Supplementary Payments: Loss of Earnings to $500
* For newly formed or acquired organizations – extend the reporting requirement to 180 days
* Broadened Named Insured
* Automatic Additional Insured – Owners, Lessees or Contractors – Automatic Status When Required in Construction Agreement With You – Including Upstream Parties
* Contractors BlanketAdditional Insured – Products – Completed Operations Coverage – Including Upstream Parties
* Automatic Additional Insured – Vendors
* Automatic Additional Insured – Lessor of Leased Equipment Automatic Status When Required in Lease Agreement With You
* Automatic Additional Insured – Managers or Lessor of Premises
* Additional Insured – Engineers, Architects or Surveyors Not Engaged by the Named Insured
* Additional Insured – State or Governmental Agency or Subdivision or Political Subdivision – Permits or Authorizations
* Additional Insured – Consolidated Insurance Program (Wrap-Up) Off-Premises Operations Only – Owners, Lessees or Contractors Automatic Status When Required in Construction Agreement With You
* Additional Insured – Employee Injury to Another Employee
* Automatically included – Aggregate Limits of Insurance (per location)
* Automatically included – Aggregate Limits of Insurance (per project)
* Knowledge of occurrence – Knowledge of an "occurrence", "claim or suit" by your agent, servant or employee shall not in itself constitute knowledge of the named insured unless an officer of the named insured has received such notice from the agent, servant or employee
* Blanket Waiver of Subrogation
* Liberalization Condition
* Unintentional failure to disclose all hazards. If you unintentionally fail to disclose any hazards existing at the inception date of your policy, we will not deny coverage under this Coverage Form because of such failure. However, this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.
* "Insured Contract" redefined for Limited Railroad Contractual Liability
* Mobile equipment to include snow removal, road maintenance and street cleaning equipment less than 1,000 lbs GVW
* Bodily Injury Redefined

REFER TO THE ACTUAL ENDORSEMENT FOLLOWING ON PAGES 2 THROUGH 14 FOR CHANGES AFFECTING YOUR INSURANCE PROTECTION

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

TEXAS – EXTENDED ULTRA LIABILITY PLUS ENDORSEMENT

This endorsement modifies insurance provided under the following:
COMMERCIAL GENERAL LIABILITY COVERAGE PART

SECTION I – COVERAGES

A. The following changes are made at **COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY:**

1. Extended Property Damage

At **2. Exclusions** exclusion **a. Expected or Intended Injury** is replaced with the following:

"Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force to protect persons or property.

2. Expanded Fire Legal Liability

At **2. Exclusions** the last paragraph is deleted and replaced by the following:

Exclusions **c.** through **n.** do not apply to damage by fire, explosion, lightning, smoke resulting from such fire, explosion, or lightning or sprinkler leakage to premises while rented to you or temporarily occupied by you with permission of the owner. A separate limit of insurance applies to this coverage as described in **SECTION III – LIMITS OF INSURANCE**.

3. Non-Owned Watercraft

At **2. Exclusions** exclusion **g. Aircraft, Auto Or Watercraft (2) (a)** is deleted and replaced by the following:

(a) Less than 51 feet long;

4. Property Damage – Borrowed Equipment

At **2. Exclusions** the following is added to paragraph **(4)** of exclusion **j. Damage To Property**:

This exclusion does not apply to "property damage" to borrowed equipment while at a jobsite and while not being used to perform operations. The most we will pay for "property damage" to any one piece of borrowed equipment under this coverage is $25,000 per occurrence. The insurance afforded under this provision is excess over any valid and collectible property insurance (including deductible) available to the insured, whether primary, excess, contingent or on any other basis.

5. Property Damage Liability – Elevators

At **2. Exclusions** the following is added to paragraphs **(3), (4)** and **(6)** of exclusion **j. Damage To Property**:

This exclusion does not apply to "property damage" resulting from the use of elevators. However, any insurance provided for such "property damage" is excess over any valid and collectible property insurance (including deductible) available to the insured, whether primary, excess, contingent or on any other basis.

B. The following coverages are added:

1. COVERAGE D – VOLUNTARY PROPERTY DAMAGE COVERAGE

"Property damage" to property of others caused by the insured:

a. While in your possession; or

b. Arising out of "your work".

Coverage applies at the request of the insured, whether or not the insured is legally obligated to pay.

For the purposes of this **Voluntary Property Damage Coverage** only:

Exclusion j. Damage to Property is deleted and replaced by the following:

j. Damage to Property

"Property damage" to:

(1) Property held by the insured for servicing, repair, storage or sale at premises you own, rent, lease, operate or use;

(2) Property transported by or damage caused by any "automobile", "watercraft" or "aircraft" you own, hire or lease;

(3) Property you own, rent, lease, borrow or use.

The amount we will pay is limited as described below in **SECTION III – LIMITS OF INSURANCE**.

For the purposes of this Voluntary Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted sole discretion in making payments under this coverage.

2. COVERAGE E – CARE, CUSTODY AND CONTROL PROPERTY DAMAGE COVERAGE

For the purpose of this **Care, Custody and Control Property Damage Coverage** only:

a. Item **(4)** of **Exclusion j.** does not apply.

The amount we will pay is limited as described below in **SECTION III – LIMITS OF INSURANCE**.

For the purposes of this Care, Custody and Control Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted sole discretion in making payments under this coverage.

3. COVERAGE F – ELECTRONIC DATA LIABILITY COVERAGE

For the purposes of this **Electronic Data Liability Coverage** only:

a. Exclusion **p.** of **Coverage A – Bodily Injury And Property Damage Liability** in **Section I – Coverages** is replaced by the following:

2. Exclusions

This insurance does not apply to:

p. Electronic Data

Damages arising out of the loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate "electronic data" that does not result from physical injury to tangible property.

However, this exclusion does not apply to liability for damages because of "bodily injury".

b. "Property Damage" means:

(1) Physical injury to tangible property, including all resulting loss of use of that property. All such loss of use shall be deemed to occur at the time of the physical injury that caused it; or

(2) Loss of use of tangible property that is not physically injured. All such loss of use shall be deemed to occur at the time of the "occurrence" that caused it; or

(3) Loss of, loss of use of, damage to, corruption of, inability to access or inability to properly manipulate "electronic data", resulting from physical injury to tangible property. All such loss of "electronic data" shall be deemed to occur at the time of the "occurrence" that caused it.

For the purposes of this **Electronic Data Liability Coverage**, "electronic data" is not tangible property.

The amount we will pay is limited as described below in **SECTION III – LIMITS OF INSURANCE**.

4. COVERAGE G – PRODUCT RECALL EXPENSE

a. Insuring Agreement

(1) We will pay 90% of "product recall expense" you incur as a result of a "product recall" you initiate during the coverage period.

(2) We will only pay for "product recall expense" arising out of "your products" which have been physically relinquished to others.

The amount we will pay is limited as described below in **SECTION III – LIMITS OF INSURANCE**.

b. Exclusions

This insurance does not apply to "product recall expense" arising out of:

(1) Any fact, circumstance or situation which existed at the inception date of the policy and which you were aware of, or could reasonably have foreseen that would have resulted in a "product recall".

(2) Deterioration, decomposition or transformation of a chemical nature, except if caused by an error in the manufacture, design, processing, storage, or transportation of "your product".

(3) The withdrawal of similar products or batches that are not defective, when a defect in another product or batch has been found.

(4) Acts, errors or omissions of any of your employees, done with prior knowledge of any of your officers or directors.

(5) Inherent vice, meaning a natural condition of property that causes it to deteriorate or become damaged.

(6) "Bodily Injury" or "Property Damage".

(7) Failure of "your product" to accomplish its intended purpose, including any breach of warranty of fitness, quality, efficacy or efficiency, whether written or implied.

(8) Loss of reputation, customer faith or approval, or any costs incurred to regain customer market, or any other consequential damages.

(9) Legal fees or expenses.

(10) Damages claimed for any loss, cost or expense incurred by you or others for the loss of use of "your product".

(11) "Product recall expense" arising from the "product recall" of any of "your products" for which coverage is excluded by endorsement.

(12) Any "product recall" initiated due to the expiration of the designated shelf life of "your product".

5. COVERAGE H – WATER DAMAGE LEGAL LIABILITY

The Insurance provided under Coverage **H** (Section I) applies to "property damage" arising out of water damage to premises that are both rented to and occupied by you.

The Limit under this coverage shall not be in addition to the Damage To Premises Rented To You Limit.

The amount we will pay is limited as described below in **SECTION III – LIMITS OF INSURANCE**.

6. COVERAGE I – DESIGNATED OPERATIONS COVERED BY A CONSOLIDATED (WRAP-UP) INSURANCE PROGRAM

The following exclusion is added to Paragraph **2. Exclusions** of **SECTION I – COVERAGES COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY:**

r. This insurance does not apply to "bodily injury" or "property damage" arising out of either your ongoing operations or operations included within the "products-completed operations hazard" for any "consolidated (Wrap-up) insurance program" which has been provided by the prime contractor/project manager or owner of the construction project in which you are involved.

This exclusion applies whether or not a consolidated (Wrap-up) insurance program:

a. Provides coverage identical to that provided by this Coverage Part; or

b. Has limits adequate to cover all claims.

This exclusion does not apply if a "consolidated (Wrap-up) insurance program" covering your operations has been cancelled, non-renewed or otherwise no longer applies for reasons other than exhaustion of all available limits, whether such limits are available on a primary, excess or on any other basis. You must advise us of such cancellation, nonrenewal or termination as soon as practicable.

For purposes of this exclusion a "consolidated (wrap-up) insurance program" is a program providing insurance coverage to all parties for exposures involved with a particular (typically major) construction project.

C. SUPPLEMENTARY PAYMENTS – COVERAGES A AND B is amended:

1. To read **SUPPLEMENTARY PAYMENTS**

2. **Bail Bonds**

   Item **1.b.** is amended as follows:

   b. Up to $1,000 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

3. **Loss of Earnings**

   Item **1.d.** is amended as follows:

   d. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit", including actual loss of earnings up to $500 a day because of time off from work.

4. The following language is added to Item **1.**

   However, we shall have none of the duties set forth above when this insurance applies only for **Voluntary Property Damage Coverage** and/or **Care, Custody or Control Property Damage Coverage** and we have paid the Limit of Liability or the Aggregate Limit for these coverages.

SECTION II – WHO IS AN INSURED

A. The following change is made:

Extended Reporting Requirements

Item **3.a.** is deleted and replaced by the following:

a. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

B. The following provisions are added:

4. **BROAD FORM NAMED INSURED**

   Item **1.f.** is added as follows:

   f. Any legally incorporated entity of which you own more than 50 percent of the voting stock during the policy period only if there is no other similar insurance available to that entity. However:

   (1) Coverage **A** does not apply to "bodily injury" or "property damage" that occurred before you acquired more than 50 percent of the voting stock; and

   (2) Coverage **B** does not apply to "personal and advertising injury" arising out of an offense committed before you acquired more than 50 percent of the voting stock.

5. **Additional Insured – Owners, Lessees or Contractors-Automatic Status When Required in Construction or Service Agreement With You – Including Upstream Parties**

   a. Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy;

   b. Any other person or organization you are required to add as an additional insured under the contract or agreement described in Paragraph **a.** above.

   Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" which may be imputed to that person or organization directly arising out of:

   1. Your acts or omissions; or

   2. The acts or omissions of those acting on your behalf;

   in the performance of your ongoing operations for the additional insured.

   However, the insurance afforded to such additional insured:

   1. Only applies to the extent permitted by law; and

2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

c. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:

a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

6. Additional Insured – Products Completed Operations Coverage – Including Upstream Parties

a. Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy; and

b. Any other person or organization you are required to add as an additional insured under the contract or agreement described in Paragraph **a.** above.

Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" which may be imputed to that person or organization directly arising out of "your work" specified in the "written contract" and included in the "products-completed operations hazard".

However:

(1) The insurance afforded to such additional insureds only applies to the extent permitted by law;

(2) If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

(3) Such coverage will not apply subsequent to the first to occur of the following:

i. The expiration of the period of time required by the "written contract"; or

ii. The expiration of any applicable statute of limitations or statute of repose with respect to claims arising out of "your work".

c. With respect to the insurance afforded to any additional insured under this endorsement, the following additional exclusionary language shall apply:

This insurance does not apply to "bodily injury" or "property damage" arising out of the rendering of, or the failure to render, any professional architecture, engineering or surveying services, including:

(1) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

(2) Supervisory, inspection, architectural or engineering activities.

7. Additional Insured – Vendors

a. Any person(s) or organization(s) (referred to throughout this additional coverage as vendor), but only with respect to "bodily injury" or "property damage", which may be imputed to that person(s) or organization(s) arising out of "your products" shown with the Schedule which are distributed or sold in the regular course of the vendor's business is an insured.

However:

(1) The insurance afforded to such vendor only applies to the extent permitted by law; and

(2) If coverage provided to the vendor is required by a contract or agreement, the insurance afforded to such vendor will not be broader than that which you are required by the contract or agreement to provide for such vendor.

b. With respect to the insurance afforded to these vendors, the following additional exclusions apply:

(1) This insurance afforded the vendor does not apply to:

(a) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the contract or agreement;

(b) Any express warranty unauthorized by you;

(c) Any physical or chemical change in the product made intentionally by the vendor;

(d) Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container.

(e) Any failure to make such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of products.

(f) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product.

(g) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor.

(h) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:

i. The exceptions contained in Sub-paragraphs **d.** or **f.**; or

ii. Such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products.

(2) This insurance does not apply to any insured person or organization, from whom you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.

8. Additional Insured – Lessor of Leased Equipment – Automatic Status When Required in Lease Agreement With You

a. Any person(s) or organization(s) from whom you lease equipment when you and such person(s) or organization(s) have agreed in writing in a contract or agreement that such person(s) or organization(s) be added as an additional insured on your policy. Such person(s) or organization(s) is an insured only with respect to your liability for "bodily injury", "property damage" or "personal and advertising injury" directly arising out of the maintenance, operation or use of equipment leased to you, which may be imputed to such person or organization as the lessor of equipment.

However, the insurance afforded to such additional insured:

(1) Only applies to the extent permitted by law; and

(2) Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when their contract or agreement with you for such leased equipment ends.

b. With respect to the insurance afforded to these additional insureds, this insurance does not apply to any "occurrence" which takes place after the equipment lease expires.

9. Additional Insured – Managers or Lessors of Premises

a. Any person(s) or organization(s), but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you and subject to the following additional exclusions:

This insurance does not apply to:

(1) Any "occurrence" which takes place after you cease to be a tenant in that premises.

(2) Structural alterations, new construction or demolition operations performed by or on behalf of the person(s) or organization(s) shown in the Schedule.

However:

(1) The insurance afforded to such additional insured only applies to the extent permitted by law; and

(2) If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

10. Additional Insured – Engineers, Architects or Surveyors Not Engaged by the Named Insured

a. Any architects, engineers or surveyors who are not engaged by you are insureds, but only with respect to liability for "bodily injury" or "property damage" or "personal and advertising injury" which may be imputed to that architect, engineer or surveyor arising out of:

(1) Your acts or omissions; or

(2) Your acts or omissions of those acting on your behalf;

in the performance of your ongoing operations performed by you or on your behalf.

But only if such architects, engineers or surveyors, while not engaged by you, are contractually required to be added as an additional insured to your policy.

However, the insurance afforded to such additional insured:

(1) Only applies to the extent permitted by law; and

(2) Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

b. With respect to the insurance afforded to these additional insureds, the following additional exclusion applies:

This insurance does not apply to "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or failure to render any professional services, including:

(1) The preparing, approving, or failing to prepare or approve, maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or

(2) Supervisory, inspection or engineering services.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional services.

11. Additional Insured – State or Governmental Agency or Subdivision or Political Subdivision – Permits or Authorizations

Any state or governmental agency or subdivision or political subdivision is an insured, subject to the following provisions:

a. This insurance applies only with respect to operations performed by you or on your behalf for which the state or governmental agency or subdivision or political subdivision has issued a permit or authorization.

However:

(1) The insurance afforded to such additional insured only applies to the extent permitted by law; and

(2) If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

b. This insurance does not apply to:

(1) "Bodily injury", "property damage" or "personal and advertising injury" arising out of operations performed for the federal government, state or municipality; or

(2) "Bodily injury" or "property damage" included within the "products-completed operations hazard".

12. Additional Insured Consolidated Insurance Program (Wrap-Up) Off-Premises Operations Only – Owners, Lessees or Contractors

a. Any persons or organizations for whom you are performing operations, for which you have elected to seek coverage under a Consolidated Insurance Program, when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy as an insured. Such person or organization is an additional insured only with respect to your liability which may be imputed to that person or organization directly arising out of your ongoing operations performed for that person or organization at a premises other than any project or location that is designated as covered under a Consolidated Insurance Program. A person's or organization's status as an insured under this endorsement ends when your operations for that insured are completed.

b. With respect to the insurance afforded to these additional insureds, the following additional exclusion applies.

This insurance does not apply to:

"Bodily injury", "property damage", or "personal and advertising injury" arising out of the rendering of, or failure to render, any professional architectural, engineering or surveying services, including:

(1) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; and

(2) Supervisory, inspection, architectural or engineering activities.

13. Additional Insured – Employee Injury to Another Employee

With respect to your "employees" who occupy positions which are supervisory in nature:

Paragraph **2.a.(1)** of **SECTION II – WHO IS AN INSURED** is amended to read:

a. "Bodily injury" or "personal and advertising injury":

(1) To you, to your partners or members (if you are a partnership or joint venture), or to your members (if you are a limited liability company);

(2) For which there is any obligation to share damages with or repay someone else who must pay damages because of the injury described in paragraph **(1)(a)** above; or

(3) Arising out of his or her providing or failing to provide professional healthcare services. Paragraph **3.a.** is deleted.

For the purpose of this Item **12** only, a position is deemed to be supervisory in nature if that person performs principle work which is substantially different from that of his or her subordinates and has authority to hire, direct, discipline or discharge.

SECTION III – LIMITS OF INSURANCE

A. The following Items are deleted and replaced by the following:

2. The General Aggregate Limit is the most we will pay for the sum of:
   a. Medical expenses under Coverage **C**;
   b. Damages under Coverage **A**, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard"; and
   c. Damages under Coverage **B**; and
   d. Damages under Coverage **H.**
3. The Products-Completed Operations Aggregate Limit is the most we will pay under Coverage **A** for damages because of "bodily injury" and "property damage" included in the "products-completed operations hazard" and Coverage **G**.
6. Subject to **5.** above, the Damage to Premises Rented to You Limit is the most we will pay under Coverage **A** for damages because of "property damage" to any one premises, while rented to you, or in the case of damage by fire, explosion, lightning, smoke resulting from such fire, explosion, or lightning or sprinkler leakage while rented to you or temporarily occupied by you with permission of the owner.

B. The following are added:

8. Subject to Paragraph **5.** of **SECTION III – LIMITS OF INSURANCE** $25,000 is the most we will pay under Coverage **H** for **Water Damage Legal Liability.**
9. **Coverage G – Product Recall Expense**

   Aggregate Limit $50,000

   Each Product Recall Limit $25,000

   a. The Aggregate Limit shown above is the most we will pay for the sum of all "product recall expense" you incur as a result of all "product recalls" you initiate during the endorsement period.
   b. The Each Product Recall Limit shown above is the most we will pay, subject to the Aggregate and $1,000 deductible, for "product recall expense" you incur for any one "product recall" you initiate during the endorsement period.

   We will only pay for the amount of Product Recall Expenses which are in excess of the deductible amount. The deductible applies separately to each Product Recall. The limits of insurance will not be reduced by the amount of this deductible.

   We may, or will if required by law, pay all or any part of any deductible amount. Upon notice of our payment of a deductible amount, you shall promptly reimburse us for the part of the deductible amount we paid.
10. **Aggregate Limits of Insurance (Per Location)**

    The General Aggregate Limit applies separately to each of your "locations" owned by or rented to you or temporarily occupied by you with the permission of the owner.

    "Location" means premises involving the same or connecting lots, or premises whose connection is interrupted only by a street, roadway, waterway or right-of-way of a railroad.
11. **Aggregate Limits of Insurance (Per Project)**

    The General Aggregate Limit applies separately to each of your projects away from premises owned by or rented to you.

12. With respects to the insurance afforded to additional insureds afforded coverage by items **5** through **13** of **SECTION II – WHO IS AN INSURED** above, the following is added:

    The most we will pay on behalf of the additional insured is the amount of insurance:

    a. Required by the contract or agreement;

    b. Available under the applicable Limits of Insurance shown in the Declarations;

    Whichever is less.

    This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

13. Subject to **5.** of **SECTION III – LIMITS OF INSURANCE**, a $5,000 "occurrence" limit and a $10,000 "aggregate" limit is the most we will pay under Coverage **A** for damages because of "property damage" covered under **Coverage D – Voluntary Property Damage Coverage**.

    For the purposes of this Voluntary Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted sole discretion in making payments under this coverage.

14. Subject to **5.** of **SECTION III – LIMITS OF INSURANCE**, a $25,000 "occurrence" limit and a $100,000 "aggregate" limit is the most we will pay under **Coverage E – Care, Custody and Control Coverage** regardless of the number of:

    a. Insureds;

    b. Claims made or "suits" brought; or

    c. Persons or organizations making claims or bringing "suits".

    Deductible - Our obligation to pay damages on your behalf applies only to the amount of damages in excess of $500.

    This deductible applies to all damages because of "property damage" as the result of any one "occurrence" regardless of the number of persons or organizations who sustain damages because of that "occurrence".

    We may pay any part or all of the deductible amount to effect settlement of any claim or "suit" and upon notification of the action taken, you shall promptly reimburse us for such part of the deductible amount as has been paid by us.

    As respects this coverage "Aggregate" is the maximum amount we will pay for all covered "occurrences" during one policy period.

    For the purposes of this Care, Custody and Control Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted sole discretion in making payments under this coverage.

15. Subject to **5.** of **SECTION III – LIMITS OF INSURANCE**, the most we will pay for "property damage" under **Coverage F – Electronic Data Liability Coverage** for loss of "electronic data" is $50,000 without regard to the number of "occurrences".

SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS

A. The following conditions are amended:

1. Knowledge of Occurrence

a. Condition **2.**, Items **a.** and **b.** are deleted and replaced by the following:

(1) Duties In The Event Of Occurrence, Offense, Claim Or Suit

(a) You must see to it that we are notified as soon as practicable of an "occurrence" or an offense which may result in a claim. Knowledge of an "occurrence" by your agent, servant or employee shall not in itself constitute knowledge of the named insured unless an officer of the named insured has received such notice from the agent, servant or employee. To the extent possible, notice should include:

i. How, when and where the "occurrence" took place;

ii. The names and addresses of any injured persons and witnesses, and

iii. The nature and location of any injury or damage arising out of the "occurrence" or offense.

(b) If a claim is made or "suit" is brought against any insured, you must:

i. Immediately record the specifics of the claim or "suit" and the date received; and

ii. Notify us as soon as practicable.

You must see to it that we receive written notice of the claim or "suit" as soon as practicable. Knowledge of a claim or "suit" by your agent, servant or employee shall not in itself constitute knowledge of the named insured unless an officer of the named insured has received such notice from the agent, servant or employee.

2. Where **Broad Form Named Insured** is added in **SECTION II – WHO IS AN INSURED** of this endorsement, Condition **4. Other Insurance b. Excess Insurance (1).(a)** is replaced by the following:

(a) Any of the other insurance, whether primary, excess, contingent or on any other basis, that is available to an insured solely by reason of ownership by you of more than 50 percent of the voting stock, and not withstanding any other language in any other policy. This provision does not apply to a policy written to apply specifically in excess of this policy.

B. The following are added:

1. Condition **(5) of 2. "Duties in the event Occurrence, Offense, Claim or Suit" c.** You or any other involved insured must:

(5) Upon our request, replace or repair the property covered under Voluntary Property Damage Coverage at your actual cost, excluding profit or overhead.

10. Blanket Waiver Of Subrogation

We waive any right of recovery we may have against any person or organization because of payments we make for injury or damage arising out of: premises owned or occupied by or rented or loaned to you, ongoing operations performed by you or on your behalf, done under a contract with that person or organization, "your work", or "your products". We waive this right where you have agreed to do so as part of a written contract, executed by you before the "bodily injury" or "property damage" occurs or the "personal injury" or "advertising injury" offense is committed.

11. Liberalization

If a revision to this Coverage Part, which would provide more coverage with no additional premium becomes effective during the policy period in the state designated for the first Named Insured shown in the Declarations, your policy will automatically provide this additional coverage on the effective date of the revision.

12. Unintentional Failure to Disclose All Hazards

Based on our reliance on your representations as to existing hazards, if you unintentionally should fail to disclose all such hazards at the inception date of your policy, we will not deny coverage under this Coverage Part because of such failure. However, this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.

13. The following conditions are added in regard to **Coverage G – Product Recall Expense**

In event of a "product recall", you must

a. See to it that we are notified as soon as practicable of a "product recall". To the extent possible, notice should include how, when and where the "product recall" took place and estimated "product recall expense".

b. Take all reasonable steps to minimize "product recall expense". This will not increase the limits of insurance.

c. If requested, permit us to question you under oath at such times as may be reasonably required about any matter relating to this insurance or your claim, including your books and records. Your answers must be signed.

d. Permit us to inspect and obtain other information proving the loss. You must send us a signed, sworn statement of loss containing the information we request to investigate the claim. You must do this within 60 days after our request.

e. Cooperate with us in the investigation or settlement of any claim.

f. Assist us upon our request, in the enforcement of any rights against any person or organization which may be liable to you because of loss to which this insurance applies.

g. Claims Handling

(1) Within 15 days after we receive written notice of claim, we will:

(a) Acknowledge receipt of the claim. If we do not acknowledge receipt of the claim in writing, we will keep a record of the date, method and content of the acknowledgment;

(b) Begin any investigation of the claim; and

(c) Request a signed, sworn proof of loss, specify the information you must provide and supply you with the necessary forms. We may request more information at a later date, if during the investigation of the claim such additional information is necessary.

(2) We will notify you in writing as to whether:

(a) The claim or part of the claim will be paid;

(b) The claim or part of the claim has been denied, and inform you of the reasons for denial;

(c) More information is necessary; or

(d) We need additional time to reach a decision. If we need additional time, we will inform you of the reasons for such need.

(3) We will provide notification, as described in **(2)(a)** through **(2)(d)** above, within:

(a) 15 business days after we receive the signed, sworn proof of loss and all information we requested; or

(b) 30 days after we receive the signed, sworn proof of loss and all information we requested, if we have reason to believe the loss resulted from arson.

If we have notified you that we need additional time to reach a decision, we must then either approve or deny the claim within 45 days of such notice.

h. We will pay for covered loss or damage within 5 business days after:

(1) We have notified you that payment of the claim or part of the claim will be made and have reached agreement with you on the amount of loss; or

(2) An appraisal award has been made.

However, if payment of the claim or part of the claim is conditioned on your compliance with any of the terms of this policy, we will make payment within 5 business days after the date you have complied with such terms.

i. Catastrophe Claims

If a claim results from a weather related catastrophe or a major natural disaster, the claim handling and claim payment deadlines described in **a.** and **b.** above are extended for an additional 15 days.

Catastrophe or Major Natural Disaster means a weather related event which is:

(1) Declared a disaster under the Texas Disaster Act of 1975; or

(2) Determined to be a catastrophe by the State Board of Insurance.

j. The term "business day", as used in this endorsement, means a day other than Saturday, Sunday or a holiday recognized by the state of Texas.

k. We will issue loss payment to the first Named Insured shown in the Declarations and any mortgagee or loss payee as designated.

14. Limited Railroad Contractual Liability

The following conditions are applicable only to coverage afforded by reason of the redefining of an **"insured contract"** in the **DEFINITIONS** section of this endorsement:

a. Railroad Protective Liability coverage provided by **Railroad Protective Liability Coverage Form (CG 00 35)** with minimum limits of $2,000,000 per occurrence and a $6,000,000 general aggregate limit must be in place for the entire duration of any project.

b. Any amendment to the Other Insurance condition of **Railroad Protective Liability Coverage Form (CG 00 35)** alters the primacy of the coverage or which impairs our right to contribution will rescind any coverage afforded by the redefined "insured contract" language.

c. For the purposes of the Other Insurance condition of **Railroad Protective Liability Coverage Form (CG 00 35)** you, the named insured, will be deemed to be the designated contractor.

SECTION V – DEFINITIONS

A. At item **12. Mobile Equipment** the wording at **f.(1)** is deleted and replaced by the following:

f. (1) Equipment designed primarily for:

(a) Snow removal;

(b) Road maintenance, but not construction or resurfacing; or

(c) Street cleaning;

except for such vehicles that have a gross vehicle weight less than 1,000 lbs which are not designed for highway use.

B. Item **3. "bodily injury"** is deleted and replaced with the following:

3. "bodily injury" means physical injury, sickness or disease sustained by a person. This includes mental anguish, mental injury, shock, fright or death that results from such physical injury, sickness or disease.

C. Item **9. "Insured Contract" c.** is deleted and replaced with the following:

c. Any easement or license agreement;

D. Item **9. "Insured Contract" f.(1)** is deleted.

E. The following definitions are added for this endorsement only:

23. "Electronic data" means information, facts or programs stored as or on, created or used on, or transmitted to or from computer software, including systems and applications software, hard or floppy disks, CD-ROMS, tape drives, cells, data processing devices or any other media which are used with electronically controlled equipment.

24. "Product recall" means a withdrawal or removal from the market of "your product" based on the determination by you or any regulatory or governmental agency that:

a. The use or consumption of "your product" has caused or will cause actual or alleged "bodily injury" or "property damage"; and

b. Such determination requires you to recover possession or control of "your product" from any distributor, purchaser or user, to repair or replace "your product", but only if "your product" is unfit for use or consumption, or is hazardous as a result of:

(1) An error or omission by an insured in the design, manufacturing, processing, labeling, storage, or transportation of "your product"; or

(2) Actual or alleged intentional, malicious or wrongful alteration or contamination of "your product" by someone other than you.

25. "Product recall expense" means reasonable and necessary expenses for:

a. Telephone, radio and television communication and printed advertisements, including stationery, envelopes and postage.

b. Transporting recalled products from any purchaser, distributor or user, to locations designated by you.

c. Remuneration paid to your employees for overtime, as well as remuneration paid to additional employees or independent contractors you hire.

d. Transportation and accommodation expense incurred by your employees.

e. Rental expense incurred for temporary locations used to store recalled products.

f. Expense incurred to properly dispose of recalled products, including packaging that cannot be reused.

g. Transportation expenses incurred to replace recalled products.

h. Repairing, redistributing or replacing covered recalled products with like products or substitutes, not to exceed your original cost of manufacturing, processing, acquisition and/or distribution.

These expenses must be incurred as a result of a "product recall".

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BUSINESS AUTO ULTRA ENDORSEMENT

This endorsement modifies insurance provided under the following:
BUSINESS AUTO COVERAGE FORM
COMMON POLICY CONDITIONS

COVERAGE INDEX

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The COVERAGE INDEX set forth above is informational only and grants no coverage.

Terms set forth in ***(Bold Italics)*** are likewise for information only and by themselves shall be deemed to grant no coverage.

(Temporary Substitute Auto Physical Damage)

A. TEMPORARY SUBSTITUTE AUTO PHYSICAL DAMAGE

SECTION I – COVERED AUTOS, paragraph C. Certain Trailers, Mobile Equipment and Temporary Substitute Autos is amended by adding the following at the end of the existing language:

If Physical Damage Coverage is provided under this Coverage form for an "auto" you own, the Physical Damage coverages provided for that owned "auto" are extended to any "auto" you do not own while used with the permission of its owner as a temporary substitute for the covered "auto" you own that is out of service because of its breakdown, repair, servicing, "loss", or destruction

B. BROADENED LIABILITY COVERAGES

SECTION II – LIABILITY COVERAGE in Paragraph **A. Coverage** at **1. Who Is An Insured** is amended to include the following:

(Broad Form Insured)

d. Any legally incorporated subsidiary in which you own more than 50% of the voting stock on the effective date of the Coverage Form. However, the Named Insured does not include any subsidiary that is an "insured" under any other automobile policy or would be an "insured" under such a policy but for its termination or the exhaustion of its Limit of Insurance.

e. Any organization that is acquired or formed by you, during the term of this policy and over which you maintain majority ownership. However, the Named Insured does not include any newly formed or acquired organization:

(1) That is a joint venture or partnership,

(2) That is an "insured" under any other policy,

(3) That has exhausted its Limits of Insurance under any other policy, or

(4) 180 days or more after its acquisition or formation by you, unless you have given us notice of the acquisition or formation

Coverage does not apply to "bodily injury" or "property damage" that results from an accident that occurred before you formed or acquired the organization.

(Employee as Insureds)

f. Any employee of yours while acting in the course of your business or your personal affairs while using a covered "auto" you do not own, hire or borrow.

(Additional Insured Status by Contract, Agreement or Permit)

g. Any person or organization whom you are required to add as an additional insured on this policy under a written contract or agreement; but the written contract or agreement must be:

(1) Currently in effect or becoming effective during the term of this policy; and

(2) Executed prior to the "bodily injury" or "property damage."

The additional insured status will apply only with respect to your liability for "bodily injury" or "property damage" which may be imputed to that person(s) or organization(s) directly arising out of the ownership, maintenance or use of the covered "autos" at the location(s) designated, if any.

Coverage provided by this endorsement will not exceed the limits of liability required by the written contract or written agreement even if the limits of liability stated in the policy exceed those limits. This endorsement shall not increase the limits stated in **Section II. C. Limits of Insurance.**

For any covered "auto" you own this Coverage Form provides primary coverage.

C. BROADENED SUPPLEMENTARY PAYMENTS

SECTION II. LIABILITY A. Coverage 2. Coverage Extensions a. Supplementary Payments (2) and **(4)** are replaced by the following:

(Bail Bond Coverage)

(2) Up to $5,000 for cost of bail bonds (including bonds for related traffic violations) required because of an "accident" we cover. We do not have to furnish these bonds.

(Loss of Earnings Coverage)

(4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earning up to $500 a day because of time off from work.

(Amended Fellow Employee Exclusion)

D. AMENDED FELLOW EMPLOYEE EXCLUSION

Only with respect to your "employees" who occupy positions which are supervisory in nature, **SECTION II. LIABILITY B. Exclusion 5. Fellow Employee** is replaced by:

5. Fellow Employee

"Bodily Injury":

a. To you, or your partners or members (if you are a partnership or joint venture), or to your members (if you are a limited liability company);

b. To your "executive officers" and directors (if you are an organization other than a partnership, joint venture, or limited liability company) but only with respect to performance of their duties as your officers or directors;

c. For which there is an obligation to share damages with or repay someone else who must pay damages because of the injury described in paragraph a and b above; or

d. Arising out of his or her providing or failing to provide professional health care services.

For purposes of this endorsement, a position is deemed to be supervisory in nature if that person performs principle work which is substantially different from that of his or her subordinates and has authority to hire, transfer, direct, discipline or discharge.

E. BROADENED PHYSICAL DAMAGE COVERAGES

SECTION III – PHYSICAL DAMAGE COVERAGE A. Coverage is amended as follows:

(Towing and Labor)

2. Towing is deleted and replaced with the following:

2. Towing and Labor

We will pay towing and labor costs incurred, up to the limits shown below, each time a covered "auto" is disabled:

a. For private passenger type vehicles we will pay up to $100 per disablement.

b. For all other covered "auto's" we will pay up to $500 per disablement

However, the labor must be performed at the place of disablement.

(Physical Damage Additional Transportation Expense Coverage)

4. Coverage Extensions

a. Transportation Expenses is amended to provide the following limits:

We will pay up to $60 per day to a maximum of $1,800. All other terms and provisions of this section remain applicable.

The following language is added to **4. Coverage Extensions:**

(Extra Expense – Theft)

c. Theft Recovery Expense

If you have purchased Comprehensive Coverage on an "auto" that is stolen, we will pay the expense of returning that stolen auto to you. The limit for this coverage extension is $5,000.

(Rental Reimbursement and Additional Transportation Expense)

d. Rental Reimbursement

We will provide Rental Reimbursement and Additional Expense coverage only for those Physical Damage coverages for which a premium is shown in the Declarations or schedule pages. Coverage applies only to a covered "auto".

(1) We will pay for auto rental expense and the expense incurred by you because of "loss" to remove and transfer your materials and equipment from a covered "auto" to a covered "auto." Payment applies in addition to the otherwise applicable coverage you have on a covered "auto." No deductible applies to this coverage.

(2) We will pay only for expenses incurred during the policy period and beginning 24 hours after the "loss" and ending, regardless of the policy's expiration, with the lesser of the following number of days:

(a) The number of days reasonably required to repair or replace the covered "auto." If "loss" is caused by theft, this number of days is added to the number of days it takes to locate the covered "auto" and return it to you, or

(b) 30 days.

(3) Our payment is limited to the lesser of the following amounts:

(a) Necessary and actual expenses incurred; or

(b) $75 per day.

(c) This coverage does not apply while there are spare or reserve "autos" available to you for your operations.

(d) If "loss" results from the total theft of a covered "auto" of the private passenger or light truck type, we will pay under this coverage only that amount of your rental reimbursement expense which is not already provided for under the **SECTION III – PHYSICAL DAMAGE COVERAGE, A. Coverage, 4. Coverage Extensions, a. Transportation Expenses.**

(Personal Effects Coverage)

e. Personal Effects

If you have purchased Comprehensive Coverage on this policy for an "auto" you own and that "auto" is stolen, we will pay, without application of a deductible, up to $500 for Personal Effects stolen with the "auto". The insurance provided under this provision is excess over any other collectible insurance. For this coverage extension, Personal Effects means tangible property that is worn or carried by an "insured".

(Personal Property of Others)

f. Personal Property of Others

We will pay up to $500 for loss to personal property of others in or on your covered "auto." This coverage applies only in the event of "loss" to your covered "auto" caused by fire, lightning, explosion, theft, mischief or vandalism, the covered "auto's" collision with another object, or the covered "auto's" overturn. No deductibles apply to this coverage.

(Locksmith Coverage)

g. Locksmith Coverage

We will pay up to $250 per occurrence for necessary locksmith services for keys locked inside a covered private passenger "auto". The deductible is waived for these services.

(Vehicle Wrap Coverage)

h. Vehicle Wrap Coverage

If you have Comprehensive or Collision coverage on an "auto" that is a total loss, in addition to the actual cash value of the "auto", we will pay up to $1,000 for vinyl vehicle wraps which are displayed on the covered "auto" at the time of total loss. Regardless of the number of autos deemed a total loss, the most we will pay under this Vehicle Wrap Coverage for any one "loss" is $5,000. For purposes of this coverage provision, signs or other graphics painted or magnetically affixed to the vehicle are not considered vehicle wraps.

(Airbag Accidental Discharge)

F. SECTION III – PHYSICAL DAMAGE COVERAGE, B. Exclusions is amended at **3.** to include the following language:

If you have purchased Comprehensive or Collision Coverage under this policy, this exclusion does not apply to mechanical breakdown relating to the accidental discharge of an air bag. This coverage applies only to a covered auto you own and is excess of any other collectible insurance or warranty. No deductible applies to this coverage.

G. BROADENED LIMITS OF INSURANCE

(Audio, Visual and Data Electronic Equipment Coverage)

SECTION III – PHYSICAL DAMAGE COVERAGE – C. Limit of Insurance at **1.b.** is amended to provide the following limits:

b. Limits of $1,000 per "loss" is increased to $5,000 per "loss". All other terms and provisions of this section remain applicable.

(Auto Loan/Lease Total Loss Protection)

SECTION III – PHYSICAL DAMAGE COVERAGE – C. Limit of Insurance is amended by adding the following language:

4. In the event of a total "loss" to a covered "auto" shown in the Schedule pages, subject at the time of the "loss" to a loan or lease, we will pay any unpaid amount due including up to a maximum of $500 for early termination fees or penalties on the lease or loan for a covered"auto" less:

a. The amount paid under the Physical Damage Coverage Section of the policy; and

b. Any:

(1) Overdue lease / loan payments at the time of the "loss";

(2) Financial penalties imposed under a lease for excessive use, abnormal wear and tear or high mileage;

(3) Security deposits not returned by the lessor;

(4) Costs for extended warranties, Credit Life Insurance, Health, Accident or Disability Insurance purchased with the loan or lease; and

(5) Carry-over balances from previous loans or leases.

(Glass Repair – Deductible Amendment)

H. GLASS REPAIR – DEDUCTIBLE

SECTION III – PHYSICAL DAMAGE COVERAGE – D. Deductible is amended by adding the following:

Any deductible shown in the Declarations as applicable to the covered "auto" will not apply to glass breakage if the damaged glass is repaired, rather than replaced.

(Amended Duties in the Event of Accident, Claim, Suit or Loss)

I. AMENDED DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS

Under **SECTION IV – BUSINESS AUTO CONDITIONS, A. Loss Conditions**, the following is added to paragraph **2. Duties In The Event of Accident, Suit or Loss:**

d. Knowledge of any "accident", "claim", "suit" or "loss" will be deemed knowledge by you when notice of such "accident", "claim", "suit" or "loss" has been received by:

(1) You, if you are an individual;

(2) Any partner or insurance manager if you are a partnership;

(3) An executive officer or insurance manager, if you are a corporation;

(4) Your members, managers or insurance manager, if you are a limited liability company; or

(5) Your officials, trustees, board members or insurance manager, if you are a not-for-profit organization.

(Waiver of Subrogation by Contract)

J. WAIVER OF SUBROGATION REQUIRED BY CONTRACT

Under **SECTION IV, BUSINESS AUTO CONDITIONS, A. Loss Conditions 5. Transfer of Rights of Recovery Against Others to Us** the following language is added:

However, we waive any rights of recovery we may have against the person or organization with whom you have agreed in writing in a contract, agreement or permit, to provide insurance such as is afforded under the policy to which this endorsement is attached. This provision does not apply unless the written contract or written agreement has been executed, or permit has been issued, prior to the "bodily injury" or "property damage."

(Unintentional Failure to Disclose)

K. UNINTENTIONAL FAILURE TO DISCLOSE

Under SECTION IV – BUSINESS AUTO CONDITIONS, B. General Conditions, the following is added to **2. Concealment, Misrepresentation Or Fraud**:

Your unintentional error in disclosing, or failing to disclose, any material fact existing at the effective date of this Coverage Form, or during the policy period in connection with any additional hazards, will not prejudice your rights under this Coverage Form.

(Hired, Leased, Rented or Borrowed Auto Physical Damage)

L. HIRED, LEASED, RENTED OR BORROWED AUTO PHYSICAL DAMAGE

Under SECTION IV – BUSINESS AUTO CONDITIONS B. General Conditions 5. Other Insurance Paragraph **5.b.** is replaced by the following:

b. **(1)** For "Comprehensive" and "Collision" Auto Physical Damage coverage provided by this endorsement, the following are deemed to be covered "autos" you own:

(a) Any Covered "auto" you lease, hire, rent or borrow; and

(b) Any Covered "auto" hired or rented by your "employee" under a contract in that individual "employee's" name, with your permission, while performing duties related to the conduct of your business.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto"

(2) Limit of Insurance For This Section

The most we will pay for any one "loss" is the lesser of the following:

(a) $75,000 per accident, or

(b) actual cash value at the time of loss, or

(c) cost of repair.

Minus a $500 deductible. An adjustment for depreciation and physical condition will be made in determining actual cash value in the event of a total loss. No deductible applies to "loss" caused by fire or lightning.

(3) This Hired Auto Physical Damage coverage is excess over any other collectible insurance.

(4) Definitions For This Section

(a) Comprehensive Coverage: from any cause except the covered "auto's" collision with another object or the covered "auto's" overturn. We will pay glass breakage, "loss" caused by hitting a bird or animal and, "loss" caused by falling objects or missiles.

(b) Collision Coverage: caused by the covered "auto's" collision with another object or by the covered "auto's" overturn.

(Mental Anguish)

M. MENTAL ANGUISH

Under **SECTION V – DEFINITIONS, C.** is replaced by the following:

C. "Bodily injury" means bodily injury, sickness or disease sustained by a person including mental anguish or death resulting from bodily injury, sickness, or disease.

(Extended Cancellation Condition)

N. EXTENDED CANCELLATION CONDITION

Under **CANCELLATION,** of the **COMMON POLICY CONDITIONS** form, item **2.b.** is replaced by the following:

b. 60 days before the effective date of cancellation if we cancel for any other reason.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

A. The following is added to the **Other Insurance** Condition in the Business Auto Coverage Form and the **Other Insurance – Primary And Excess Insurance Provisions** in the Motor Carrier Coverage Form and supersedes any provision to the contrary:

This Coverage Form's Covered Autos Liability Coverage is primary to and will not seek contribution from any other insurance available to an "insured" under your policy provided that:

1. Such "insured" is a Named Insured under such other insurance; and
2. You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to such "insured".

B. The following is added to the **Other Insurance** Condition in the Auto Dealers Coverage Form and supersedes any provision to the contrary:

This Coverage Form's Covered Autos Liability Coverage and General Liability Coverages are primary to and will not seek contribution from any other insurance available to an "insured" under your policy provided that:

1. Such "insured" is a Named Insured under such other insurance; and
2. You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to such "insured".

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TexasMutual®
WORKERS' COMPENSATION INSURANCE

WORKERS' COMPENSATION AND EMPLOYERS LIABILITY POLICY

WC 42 03 04 B
Agent copy

TEXAS WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

This endorsement applies only to the insurance provided by the policy because Texas is shown in item 3.A. of the Information Page.

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule, but this waiver applies only with respect to bodily injury arising out of the operations described in the schedule where you are required by a written contract to obtain this waiver from us.

This endorsement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

The premium for this endorsement is shown in the Schedule.

Schedule

1. ( ) Specific Waiver
   Name of person or organization
   (X) Blanket Waiver
   Any person or organization for whom the Named Insured has agreed by written contract to furnish this waiver.

2. Operations: ALL TEXAS OPERATIONS
3. Premium:
   The premium charge for this endorsement shall be **2.00** percent of the premium developed on payroll in connection with work performed for the above person(s) or organization(s) arising out of the operations described.
4. Advance Premium: Included, see Information Page

This endorsement changes the policy to which it is attached effective on the inception date of the policy unless a different date is indicated below.
(The following "attaching clause" need be completed only when this endorsement is issued subsequent to preparation of the policy.)
This endorsement, effective on **4/11/22 at 12:01 a.m.** standard time, forms a part of:

Policy no. 0001129846 of Texas Mutual Insurance Company effective on 4/11/22

Issued to: GO UNDERGROUND LLC

This is not a bill

Authorized representative

NCCI Carrier Code: 29939

4/8/22