

## **Solicitation 1801-210**

### **RV Park Williamson County Expo - Phase II Development**

**Bid Designation: Public**



**Williamson County, Texas**

## Bid 1801-210

### RV Park Williamson County Expo - Phase II Development

Bid Number 1801-210  
 Bid Title RV Park Williamson County Expo - Phase II Development  
 Expected Expenditure **\$1,600,000.00** (This price is expected - not guaranteed)

Bid Start Date In Held  
 Bid End Date Feb 28, 2018 3:00:00 PM CST  
 Question & Answer End Date Feb 23, 2018 5:00:00 PM CST

Bid Contact Blake Skiles  
 Senior Purchasing Specialist  
 512-**943**-1478  
 blake.skiles@wilco.org

Contract Duration **One Time Purchase**  
 Contract Renewal Not Applicable  
 Prices Good for **365 days**  
 Pre-Bid Conference **Feb 21, 2018 1:30:00 PM CST**  
**Attendance is optional**  
**Location: Williamson County Expo Center**  
**5350 Bill Pickett Trail**  
**Taylor, TX 76574**

Bid Comments Williamson County seeks a qualified firm to construct the Recreational Vehicle (RV) park (Phase II) at the Williamson County Expo Center located in Taylor, Texas.  
 Phase II project scope includes, but is not limited to development of a connector road, parking and related infrastructure for 51 RV sites with utility pedestals, utilities to support RV sites including water and electrical service (20 amp, 30 amp and 50 amp), site lighting, RV wastewater dump station, site work, any necessary demolition, walks and connector trails, and native plant landscaping.  
 This project is funded in part with grant funds.  
 Project instructions must be complied with and are included in the documents.

#### Item Response Form

Item **1801-210-01-01 - Total Proposal Price**  
 Quantity **1 each**  
 Unit Price   
 Delivery Location **Williamson County, Texas**  
No Location Specified

**Qty 1**

**Description**  
 Total Proposal Price



Item **1801-210-01-02 - Please Attach All Documents To This Line**

Quantity **1 each**

Prices are not requested for this item.

Delivery Location **Williamson County, Texas**

No Location Specified

**Qty 1**

**Description**

Please Attach All Documents To This Line



## PUBLIC ANNOUNCEMENT AND GENERAL INFORMATION

**WILLIAMSON COUNTY PURCHASING DEPARTMENT  
SOLICITATION NUMBER 1801-210  
RV Park Williamson County Expo - Phase II Development**

**PROPOSALS MUST BE RECEIVED ON OR BEFORE:  
Feb 28, 2018 3:00:00 PM CST**

**PROPOSALS WILL BE PUBLICLY OPENED:  
Feb 28, 2018 3:00:00 PM CST**

Notice is hereby given that Competitive Sealed Proposals for the above-mentioned construction services will be accepted by the Williamson County Purchasing Department. Williamson County uses BidSync to distribute and receive Proposals. Specifications for this RFCSP may be obtained by registering at [www.bidsync.com](http://www.bidsync.com).

**Williamson County prefers and requests electronic submittal of this Proposal.**

**All electronic proposals must be submitted via:** [www.bidsync.com](http://www.bidsync.com)

Electronic Proposals are requested, however paper proposals will currently still be received, until further notice and may be mailed or delivered to the address listed below.

**Respondents are strongly encouraged to carefully read this entire RFCSP.**

All interested Respondents are invited to submit a Proposal in accordance with the Instructions and General Requirements, Proposal Format, Proposal Specifications, and Definitions, Terms and Conditions stated in this RFCSP.

**Please note that a complete package must be submitted choosing one of the above two methods. Split packages where a partial submittal is received in paper and a partial submittal is received via BidSync will be considered “unresponsive” and will not be accepted or evaluated.**

**Williamson County will not accept any Proposals received after the submittal deadline, and shall return such Proposals unopened to the Respondent.**

General Information:

- If mailed or delivered in person, Proposal and Proposal addenda are to be delivered in sealed envelope on or before the submittal deadline, as noted in the Public Announcement and General Information listed above for this RFCSP, to:

Williamson County Purchasing Department  
Attn: **PROPOSAL NAME AND NUMBER**  
901 South Austin Avenue  
Georgetown, Texas 78626

- o Respondents should list the Proposal Number, Proposal Name, Name and Address of Respondent, and the Date of the Proposal opening on the outside of the box or envelope and note "Competitive Sealed Proposal Enclosed."
  - o Respondent should submit one (1) original.
  - o Williamson County will NOT be responsible for unmarked or improperly marked envelopes.
  - o Williamson County will not accept any responsibility for Proposals being delivered by third party carriers.
  - o Facsimile transmittals will NOT be accepted.
- Proposals will be opened publicly and the names of the offerors and any monetary Proposals made by the offerors, will be read aloud.
- All submitted questions with their answers will be posted and updated on [www.bidsync.com](http://www.bidsync.com).
- It is the Respondent's responsibility to review all documents in BidSync, including any Addenda that may have been added after the document packet was originally released and posted.
  - o Any Addenda and/or other information relevant to the RFCSP will be posted on [www.bidsync.com](http://www.bidsync.com).
  - o The Williamson County Purchasing Department takes no responsibility to ensure any interested Respondent has obtained any outstanding addenda or additional information.



## **Williamson County – Request for Competitive Sealed Proposal (RFCSP)**

### **SECTION 1 - DEFINITIONS**

**Addendum/Addenda** – means any written or graphic instruments issued by the County prior to the consideration of Proposals which modify or interpret the Proposal Documents by additions, deletions, clarifications, or corrections.

**Agreement/Ensuing Agreement(s)** – means the Successful Respondent may be required by the County to sign an additional Agreement containing terms necessary to ensure compliance with the RFCSP and the Respondent's Proposal. Such Ensuing Agreement(s) shall contain the Proposal specifications, terms and conditions that are derived from the RFCSP.

**Contract** – means this RFCSP and the Proposal of the Successful Respondent shall become a Contract between the Successful Respondent and the County once the Successful Respondent Proposal is properly accepted by the Williamson County Commissioners Court (sometimes referred to herein as the Commissioner's Court").

**Commissioner's Court** – means the Williamson County Commissioners Court.

**County** – means Williamson County, a political subdivision of the State of Texas.

**Executive Summary** – means the document submitted by Respondent that represents a concise summary of the contents of the Proposal. It does not include any information concerning costs.

**Proposal Documents** – means the Legal Notice, RFCSP including attachments, and any Addenda issued by the County prior to the consideration of any Proposals.

**Proposal** – means the complete, properly signed document, and ALL required forms and documentation listed in the proposal package which have been submitted in accordance with this RFCSP package. A Proposal submitted in accordance with this RFCSP is irrevocable during the specified time period for evaluation and acceptance of Proposals, unless a waiver is obtained from the Williamson County Purchasing Agent.

**Respondent** – means a person or entity who submits a Proposal in response to this RFCSP.

**Request for Competitive Sealed Proposals (RFCSP)** – means this document, together with the attachments thereto and any future Addenda issued by the County.

**Successful Respondent** – means the responsible Respondent who, in the County's sole opinion, submits the Proposal which is in the best interest of the County, taking into account factors identified herein, and to whom the County intends to award the Contract.

## **SECTION 2 - RESPONSE FORMAT AND SUBMISSION**

### **2.1 INTRODUCTION**

Each Proposal submitted in response to this RFCSP should clearly reference the numbered sections of this RFCSP that require a response. Failure to arrange the Proposal as requested may result in the disqualification of the Proposal.

Though there is not a page limit for Proposals, to save natural resources including paper, and to allow the County staff to efficiently evaluate all submitted Proposals, the County requests that Proposals be orderly, concise, but comprehensive in providing the requested information. Conciseness and clarity of content are emphasized and encouraged. If mailed or delivered in person, please limit additional, non requested information.

Please provide your Proposal response using:

- A. 8 ½" x 11" pages, inclusive of any cover letter or supporting materials.
- B. The least amount of plastic/laminate or other non-recyclable binding materials.
- C. Single-sided printing.

Vague and general Proposals will be considered non-responsive, and may, at the County's sole discretion, result in disqualification. Proposals must be legible and complete. Failure to provide the required information may result in the disqualification of the Proposal. All pages of the Proposal should be numbered and the Proposal should contain an organized, paginated table of contents corresponding to the sections and pages of the Proposal.

### **2.2 ORGANIZATION OF PROPOSAL CONTENTS AND TABLE OF CONTENTS**

Each Proposal should be submitted with a table of contents that clearly identifies and denotes the location of all enclosures of the Proposal. The table of contents should follow the RFCSP's structure as much as is practical.

Each Proposal should be organized in the manner described below:

- A. Transmittal Letter. Please see Section 2.3, Transmittal Letter, for more information.
- B. Table of Contents.
- C. Executive Summary. Please see Section 2.4, Executive Summary.
- D. Proposal Response to Criteria. (Please see the sections in this RFCSP package that list the Specifications & Cost Proposal, Experience and Qualifications, References, and Implementation Strategy to respond to our criteria in a clear and concise manner)
- E. Price Sheet.
- F. References: Identification of three (3) references within the last four (4) years, for which the Respondent is providing, or has provided, the goods and/or services (public sector) of the type requested in this RFCSP. Include the name, position/title, and telephone number of a contact person at each entity.
- G. Conflict of Interest Questionnaire.

H. Proposal Affidavit (Signature Page).

- I. Attach your entities sample Contract, if applicable, for the County's review and consideration. This should include any additional terms or conditions. The County is not required to use the sample Contract submitted.

## 2.3 TRANSMITTAL LETTER

The Respondent should submit a Transmittal Letter that provides the following information:

- A. Name and address of individual or business entity submitting the Proposal.
- B. Respondent's type of business entity (i.e., Corporation, General Partnership, Limited Partnership, LLC, etc.). See Section 3.5, Signature of Respondent, for more information.
- C. Place of incorporation or organization, if applicable.
- D. Name and location of major offices and other facilities that relate to the Respondent performance under the terms of this RFCSP.
- E. Name, physical address, email address, business and fax number of the Respondent's principal contact person regarding all contractual matters relating to this RFCSP.
- F. The Respondent's Federal Employer Identification Number.
- G. A commitment by the Respondent to provide the services required by the County;
- H. A statement that the Proposal is valid for the time specified on page three (3), under the section named *Prices Good for*, of this Proposal packet. Any Proposal containing a term of less than the required amount, may at the County's sole discretion, be rejected as non-responsive.
- I. If the Proposal being submitted will have an effect on air quality for the County (as it relates to any state, federal, or voluntary air quality standard), then the Respondent is encouraged to provide information in narrative indicating the anticipated air quality impact. See Section 4.40, Air Quality for more information.

The Transmittal Letter should be signed by a person legally authorized to bind the Respondent to the representations in the Transmittal Letter and the Proposal. In the case of a joint Proposal, each party must sign the Transmittal Letter.

## 2.4 EXECUTIVE SUMMARY

The Respondent should provide an Executive Summary of its Proposal that asserts that the Respondent is providing in its response all of the requirements of this RFCSP. The Executive Summary should not include any information concerning the cost of the Proposal, but instead must represent a full and concise summary of the contents of the Proposal. It is recommended the Executive Summary include the following information:

- A. Identify any goods and/or services that are provided beyond those specifically requested. If the Respondent is providing services and/or goods that do not meet the specific requirements of this RFCSP, but in the opinion of the Respondent are equivalent or superior to those specifically requested, any such differences should be noted in the Executive Summary. However, the Respondent must realize that failure to provide the goods and/or services specifically required, at the County's sole discretion, may result in disqualification of the Proposal.

- B. Indicate why the Respondent believes that it is the most qualified Respondent to provide the services described in this RFCSP. The Successful Respondent must demonstrate extensive experience and understanding of the intent of this project. The Respondent should describe in detail the current and historical experience the Respondent and its subcontractors have that would be relevant to completing the project. References must contain the name of key personnel and telephone numbers for each contact, as described in Section 3.14, References.
- C. Briefly state why the Respondent believes its proposed goods and/or services best meet the County's needs and RFCSP requirements, and the Respondent also should concisely describe any additional features, aspects, or advantages of its goods and/or services in any relevant area not covered elsewhere in its Proposal.

## 2.5 CONFLICT OF INTEREST

No public official shall have interest in a contract, in accordance with Vernon's Texas Codes Annotated, Local Government Code, Title 5, Subtitle C, Chapter 171, as amended.

As of January 1, 2006, all Respondents are responsible for complying with Local Government Code, Title 5, Subtitle C, Chapter 176. Additional information may be obtained from the County's website at the following link:

<http://www.wilco.org/CountyDepartments/Purchasing/ConflictofInterestDisclosure/tabid/689/language/en-US/Default.aspx>

Each Respondent must disclose any existing or potential conflict of interest relative to the performance of the requirements of this RFCSP. **Examples of potential conflicts of interest may include an existing business or personal relationship between the Respondent, its principal, or any affiliate or subcontractor with the County or any other entity or person involved in any way with the project that is subject to this RFCSP.** Similarly, any personal or business relationship between the Respondent, the principals, or any affiliate or subcontractor with any employee, or official of the County or its suppliers must be disclosed. Any such relationship that might be perceived or represented as a conflict must be disclosed. Failure to disclose any such relationship or reveal personal relationships with the County employees or officials may be cause for termination.

The County will decide if an actual or perceived conflict should result in Proposal disqualification.

By submitting a Proposal in response to this RFCSP, all Respondents affirm they have not given, nor intend to give, at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a County public servant or any employee, official or representative of same, in connection with this procurement.

**Each Respondent must provide a Conflict of Interest Statement.**

## 2.6 CERTIFICATE OF INTERESTED PARTIES – FORM 1295

As of January 1, 2016, all Respondents are responsible for complying with the Texas Government Code, Section 2252.908. The law states that the County may not enter into certain contracts with a Respondent unless the Respondent submits a disclosure of interested parties to the County at the time the Respondent submits the signed contract. The law applies only to a contract of the County on or after January 1, 2016 that either:

- A. Requires an action or vote by the Commissioners Court before the contract may be signed (all contracts that fall under the jurisdiction of the Commissioners Court approval, such as contracts resulting from an Initiation for Bid (IFB), RFCSP, Request for Qualifications (RFQ), etc., excluding, but not limited to, certain Juvenile Service contracts, contracts funded with Sheriff

- seized fun monies, etc.); or
- B. Has a value of at least \$1,000,000.

By January 1, 2016, the Texas Ethics Commission will make available on its website, a new filing application that must be used to file Form 1295. Information regarding how to use the filing application is available on the Texas Ethics Commission website at the following link:

[https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm)

A Respondent must:

- A. Use the online application to process the required information on Form 1295.
- B. Print a copy of the form which will contain a unique certification number.
- C. An authorized agent of the Respondent must sign the printed copy of the form.
- D. Have the form notarized.
- E. File the completed Form 1295 and certification of filing (scanning and emailing form is sufficient) with Williamson County Purchasing Agent at the time the signed Contract is submitted for approval.

After the Commissioners Court award of the contract, the County shall notify the Texas Ethics Commission, using the Texas Ethics Commission's filing application, of the receipt of the filed Form 1295 and certification of filing not later than the 30th day after the date the contract binds all parties to the contract. The Texas Ethics Commission will post the completed Form 1295 to its website within seven business days after receiving notice from the County.

## **2.7 PROPOSAL SUBMITTAL DEADLINE**

The Proposal is due no later than the submittal date and time set forth in the Public Announcement and General Information listed in this RFCSP package. Contents of each Proposal shall be submitted in accordance with this RFCSP.

## **2.8 ETHICS**

The Respondent shall not accept or offer gifts or anything of value, nor enter into any business arrangement with any employee, official or agent of the County.

## **2.9 DELIVERY OF PROPOSALS**

The County uses BidSync to distribute and receive bids and Proposals. It is preferred that Proposals be submitted electronically through BidSync; however, Respondents can submit a hard copy.

Refer to [www.bidsync.com](http://www.bidsync.com) for further information on how to submit electronically.

If mailed or delivered in person, Proposal and Proposal Addenda are to be delivered in sealed envelope on or before the submittal deadline, as noted in the Public Announcement and General Information listed in this RFCSP package, to:

Williamson County Purchasing Department  
Attn: **Proposal Name and Number**  
901 South Austin Avenue  
Georgetown, Texas 78626



Also, all Respondents should list their Name and Address, and the Date of the Proposal opening on the outside of the box or envelope and note "Competitive Sealed Proposal Enclosed." Williamson County will not accept any Proposals after the submittal deadline, and shall return such Proposals unopened to the Respondent. The County will not accept any responsibility for Proposals being delivered by third party carriers.

Proposals will be opened publicly and the names of the offerors and any monetary proposals made by the offerors, will be read aloud.

## **SECTION 3 - INSTRUCTIONS AND GENERAL REQUIREMENTS**

### **3.1 INSTRUCTIONS**

Read this document carefully, and follow all instructions and requirements. All Respondents are responsible for fulfilling all requirements and specifications. Be sure to have a clear understanding of this RFCSP.

General requirements apply to all advertised RFCSPs; however, these may be superseded, in whole or in part, by the proposal specifications, Addenda and modifications issued as a part of this RFCSP. Be sure your Proposal package is complete.

### **3.2 AMBIGUITY, CONFLICT, OR OTHER ERRORS IN THIS RFCSP**

If a Respondent discovers any ambiguity, conflict, discrepancy, omission or other error in this RFCSP, the Respondent shall immediately notify the County Purchasing Department of such error in writing and request modification or clarification of the document.

Modifications will be made by issuing Addenda. If the Respondent fails to notify the County prior to the date and time fixed for submission of Proposals of an error or ambiguity in the RFCSP known to the Respondent, or an error or ambiguity that reasonably should have been known to the Respondent, then the Respondent shall be deemed to have waived the error or ambiguity or its later resolution.

The County may also modify the RFCSP, no later than forty-eight (48) hours prior to the date and time fixed for submission of Proposals, by issuance of an Addendum. All Addenda will be numbered consecutively, beginning with one (1).

### **3.3 NOTIFICATION OF MOST CURRENT ADDRESS**

All Respondents in receipt of this RFCSP shall notify the Williamson County Purchasing Department any address changes, contact person changes, and/or telephone number changes no later than forty eight (48) hours prior to the date and time fixed for submission of Proposals.

### **3.4 SIGNATURE OF RESPONDENT**

A Transmittal Letter, which shall be considered an integral part of the Proposal as stated in Section 2.3, Transmittal Letter, shall be signed by an individual who is authorized to bind the Respondent contractually.

- A. If the Respondent is a Corporation or Limited Liability Company, the legal name of the Corporation or Limited Liability Company shall be provided together with the signature of the officer or officers authorized to sign on behalf of such entity.
- B. If the Respondent is a General Partnership, the true name of the firm shall be provided with the signature of each partner authorized to sign.
- C. If the Respondent is a Limited Partnership, the name of the Limited Partner's General Partner shall be provided with the signature of the officer authorized to sign on behalf of the General Partner.
- D. If the Respondent is a Sole Proprietor(s) (individual), each Sole Proprietor(s) shall sign.
- E. If signature is by an agent, other than the Sole Proprietor(s) or an officer of a Corporation, Limited Liability Company, General Partner or a member of a General Partnership, a power of attorney equivalent document must be submitted to the Williamson County Purchasing Department.

### **3.5 ASSUMED BUSINESS NAME**

If the Respondent operates business under an Assumed Business Name, the Respondent must have file with the Williamson County Clerk a current Assumed Name Certificate and provide a file marked copy of same prior to contract award.

### **3.6 ECONOMY OF PRESENTATION**

Proposals should not contain promotional or display materials, except as they may directly answer in whole or in part questions contained in the RFCSP. Such exhibits shall be clearly marked with the applicable reference number of the question in the RFCSP. Proposals must address the technical requirements as specified in the RFCSP. All questions posed by the RFCSP must be answered concisely and clearly. Proposals that do not address each criterion may be, at the sole discretion of the County, rejected and not considered.

### **3.7. REJECTION OR ACCEPTANCE**

It is understood that the Commissioners Court of Williamson county, Texas, reserves the right to accept or reject any and/or all proposals for any or all materials and/or services covered in the RFP, and to waive informalities or defects in the proposal or to accept such proposal it shall deem to be in the best interest of Williamson County.

### **3.8 PROPOSAL OBLIGATION**

The contents of the RFCSP, Proposal, and any clarification thereof submitted by the Successful Respondent shall become part of the contractual obligation and incorporated by reference into the Contract and any Ensuing Agreement(s).

### **3.9 COMPLIANCE WITH RFCSP SPECIFICATIONS**

It is intended that this RFCSP describe the requirements and the Proposal format in sufficient detail to secure comparable Proposal. Failure to comply with all provisions of the RFCSP may, at the sole discretion of the County, result in disqualification.

### **3.10 EVALUATION**

The County reserves the right to use all pertinent information (also learned from sources other than disclosed in the RFCSP process) that might affect the County's judgment as to the appropriateness an award to the best evaluated Respondent. This information may be appended to the Proposal evaluation process results. Information on a Respondent from reliable sources, and not within the Respondent's Proposal, may also be noted and made part of the evaluation file. The County shall have sole discretion for determining the reliability of the source. The County reserves the right to conduct written and/or oral discussions/interviews after the Proposal opening. The purpose of such discussions/interviews is to provide clarification and/or additional information to make an award that is in the best interest of the County.

### **3.11 WITHDRAWAL OF PROPOSAL**

The Respondent may withdraw its Proposal by submitting a written request with the company letterhead and the signature of an authorized individual, as described in Section 3.4, Signature of Respondent, to the Williamson County Purchasing Department any time prior to the submission deadline.

The Respondent may submit a new Proposal prior to the deadline. Alterations of the Proposal in any manner will not be considered if submitted after the deadline. Withdrawal of a Proposal after the deadline will be subject to written approval of the Williamson County Purchasing Agent.

### **3.12 RESPONSIBILITY**

It is expected that a Respondent will be able to affirmatively demonstrate responsibility. A prospective Respondent should be able to meet the following requirements:

- A. Have adequate financial resources, or the ability to obtain such resources as required;
- B. Be able to comply with the required or proposed delivery schedule;
- C. Have a satisfactory record of performance that can be determined thru references provided; and
- D. Be otherwise qualified and eligible to receive an award.

The County may request representation and other information sufficient to determine the Respondent ability to meet these minimum standards listed above.

### **3.13 PURCHASE ORDERS**

If required by the Williamson County Purchasing Department, a purchase order(s) may be generated to the Successful Respondent for goods and/or services. If a purchase order is issued, the purchase order number must appear on all itemized invoices and/or requests for payment.

### **3.14 SILENCE OF SPECIFICATIONS**

The apparent silence of any RFCSP specifications as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

### **3.15 REFERENCES**

Respondents shall furnish a list of contracts where similar responsibilities and goods and/or services have been required and/or performed for the past five (5) years, to include names, titles, phone numbers and email addresses of reference contacts, contract numbers and dates of performance.

Also, Respondents shall include a list of any contracts that have been cancelled or terminated within the last five (5) years, along with an explanation of the cancellation and the names, email address and phone number of a reference person with that institution.

The County may contact some or all of the references in order to determine the Respondent performance record on work similar to that described in this RFCSP. The County reserves the right to contact references other than those provided in the response and to use the information gained from them in the evaluation process.

References should be provided in accordance with this RFCSP. Proposal may not be deemed complete without the inclusion of requested references.

## **SECTION 4 - TERMS AND CONDITIONS**

### **4.1 VENUE AND GOVERNING LAW**

The Respondent hereby agrees and acknowledges that venue and jurisdiction of any suit, right, or cause of action arising out of or in connection with this RFCSP, the Contract and any Ensuing Agreement(s), shall lie exclusively in either Williamson County, Texas or in the Austin Division of the Western Federal District of Texas, and the parties hereto expressly consent and submit to such jurisdiction. Furthermore, except to the extent that this RFCSP, the Contract and any Ensuing Agreement(s) is governed by the laws of the United States, this RFCSP, the Contract and any Ensuing Agreement(s) shall be governed by and construed in accordance with the laws of the State of Texas, excluding, however, its choice of law rules.

### **4.2 INCORPORATION BY REFERENCE AND PRECEDENCE**

- A. The Contract shall be derived from the RFCSP and its Addenda (if applicable), and the Respondent's Proposal. In the event of a dispute under the Contract, applicable documents will be referred to for the purpose of clarification or for additional detail in the following order of precedence:
  - 1. The RFCSP and its Addenda (if applicable); and
  - 2. The Respondent's Proposal.
- B. In the event the County requires that an Ensuing Agreement be executed following award and a dispute arises between the terms and conditions of the Ensuing Agreement, the RFCSP and its Addenda (if applicable), and the Respondent's Proposal, applicable documents will be referred to for the purpose of clarification or for additional detail in the following order of precedence:
  - 1. The terms and conditions of the Ensuing Agreement;
  - 2. The RFCSP and its Addenda; and
  - 3. The Respondent's Proposal.

### **4.3 OWNERSHIP OF PROPOSAL**

Each Proposal shall become the property of the County upon submittal and will not be returned to Respondents unless received after the submittal deadline.

### **4.4 DISQUALIFICATION OF RESPONDENT**

Upon signing and submittal of the Proposal, a Respondent offering to sell supplies, materials, services, or equipment to the County, certifies that the Respondent has not violated the antitrust laws of the State of Texas codified in Business & Commerce Code, Section 15.01, or the Federal Antitrust Laws, and has not communicated directly or indirectly the offer made to any competitor or any other person engaged such line of business. Any or all Proposals may be rejected if the County believes that collusion exists among the Respondents.

## 4.5 FUNDING

The County intends to budget and make sufficient funds available and authorize funds for expenditure to finance the costs of the Contract. All Respondents understand and agree that the County's payment of amounts under the Contract shall be contingent on the County receiving appropriations or other expenditure authority sufficient to allow the County, in the exercise of reasonable administrative discretion, to make payments under this Contract.

### A. ASSIGNMENT, SUCCESSORS AND ASSIGNS

The Successful Respondent may not assign, sell, or otherwise transfer the Contract or any other rights or interests obtained under the Contract without written permission of the Williamson County the Commissioners Court. The Contract and any Ensuing Agreement(s) shall be binding upon and inure to the benefit of the contracting parties hereto and their respective successors and permitted assigns.

## 4.6 IMPLIED REQUIREMENTS

Products or services not specifically described or required in the RFCSP, but are necessary to provide the functional capabilities described by the Respondent, shall be implied and deemed to be included in the Proposal.

## 4.7 TERMINATION

- A. Termination for Cause:** The County reserves the right to terminate the Contract and/or any Ensuing Agreement(s) for default if the Successful Respondent breaches any of the Proposal specifications, terms and conditions, including warranties of the Respondent, if any, or if the Successful Respondent becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies the County may have at law or equity or as may otherwise be provided hereunder. 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 other requirements to the County's satisfaction, and/or to meet all other obligations and requirements.
- B. Termination for Convenience:** The County may terminate the Contract and/or any Ensuing Agreement(s) for convenience and without cause or further liability, upon no less than thirty (30) calendar days written notice to the Successful Respondent. The County reserves the right to extend this period if it is in the best interest of the County. In the event the County exercises its right to terminate without cause, it is understood and agreed that only the amounts due to the Successful Respondent for goods, commodities and/or services provided and expenses incurred to and including the date of termination, will be due and payable. No penalty will be assessed for the County's termination for convenience.

## 4.8 NON-PERFORMANCE

It is the objective of the County to obtain complete and satisfactory performance of the requirements set forth herein. In addition to any other remedies available at law, in equity or that may be set out herein, failure to perform may result in a deduction of payment equal to the amount of the goods and/or services that were not provided and/or performed to the County's satisfaction.

In the event of such non-performance, the County shall have the right, but shall not be obligated, to complete the services itself or by others and/or purchase the goods from other sources. If the County elects to acquire the goods or perform the services itself or by others, pursuant to the foregoing, the Successful Respondent shall reimburse the County, within ten (10) calendar days of demand, for all costs incurred by the County (including, without limitation, applicable, general, and administrative expenses, and field overhead, and the cost of necessary equipment, materials, and field labor) in correcting the nonperformance which the Successful Respondent fails to meet pursuant to the requirements set out herein. In the event the Successful Respondent refuses to reimburse the County as set out in this provision, the County shall have the right to deduct such reimbursement amounts from any amounts that may be then owing or that may become owing in the future to the Successful Respondent.

#### **4.9 PROPRIETARY INFORMATION AND THE TEXAS PUBLIC INFORMATION ACT**

All material submitted to the County shall become public property and subject to the Texas Public Information Act upon receipt. If a Respondent does not desire proprietary information in the Proposal to be disclosed, each page must be clearly identified and marked proprietary at time of submittal or, more preferably, all proprietary information may be placed in a folder or appendix and be clearly identified and marked as being proprietary. Failure to clearly identify and mark information as being proprietary as set forth under this provision will result in all unmarked information being deemed non-proprietary and available to the public. For all information that has not been clearly identified and marked as proprietary by the Respondent, the County may choose to place such information on the County's website and/or a similar public database without obtaining any type of prior consent from the Respondent.

The County will, to the extent allowed by law, endeavor to protect from public disclosure the information that has been identified and marked as proprietary. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General.

To the extent, if any, that any provision in this RFCSP or in the Respondent's Proposal is in conflict with Texas Government Code, Chapter 552, as amended (the "Public Information Act"), the same shall be of no force or effect. Furthermore, it is expressly understood, and agreed, that the County, and its officers and employees, may request advice, decisions and opinions of the Attorney General of the State of Texas in regard to the application of the Public Information Act to any items or data furnished to the County as to whether or not the same are available to the public. It is further understood that that the County, and its officers and employees, shall have the right to rely on the advice, decisions and opinions of the Attorney General, and that the County, its officers and employees shall have no liability or obligation to any party hereto for the disclosure to the public, or to any person or persons, of any items or data furnished to the County by a party hereto, in reliance of any advice, decision or opinion of the Attorney General of the State of Texas.

#### **4.10 RIGHT TO AUDIT**

The Successful Respondent agrees that the County or its duly authorized representatives shall, until the expiration of three (3) years after termination or expiration of the services to be performed, have access to and the right to examine and photocopy any and all books, documents, papers and records of the Successful Respondent, which are directly pertinent to the services to be performed or goods to be delivered for the purposes of making audits, examinations, excerpts and transcriptions. The Successful Respondent agrees that the County shall have access during normal working hours to all necessary facilities and shall be provided adequate and appropriate work space in order to conduct audits in compliance with the provisions of this section. The County shall give the Successful Respondent reasonable advance notice of intended audits.

#### **4.11 TESTING AND INSPECTIONS**

The County reserves the right to inspect and test equipment, supplies, materials and goods for quality and compliance with this RFCSP, and ability to meet the needs of the user. Demonstration units must be available for review. Should the goods or services fail to meet requirements and/or be unavailable for evaluation, the County can deem the Respondent to be in breach and terminate the Contract and/or any Ensuing Agreement(s).

#### **4.12 PROPOSAL PREPARATION COSTS**

The cost of developing Proposals is the sole responsibility of the Respondents and shall not be charged to the County. There is no expressed or implied obligation for the County to reimburse the Respondents for any expense incurred in preparing a Proposal in response to this RFCSP and the County will not reimburse the Respondents for such expenses.

#### **4.13 INDEMNIFICATION**

The Successful Respondent shall indemnify, defend and save harmless, the County, its officials, employees, agents and agent's employees from, and against, all claims, liability, and expenses including reasonable attorneys' fees, arising from activities of the Respondent, its agents, servants or employees, performed hereunder that result from the negligent act, error, or omission of the Respondent or any of the Respondent's agents, servants or employees, as well as all claims of loss or damage to the Respondent's and the County's property, equipment, and/or supplies.

Furthermore, the County, its officials, employees, agents and agents' employees shall not be liable for damages to the Successful Respondent arising from any act of any third party, including, but not limited to, theft. The Successful Respondent further agrees to indemnify, defend and save harmless, the County from its officials, employee, agents and agents' employees against all claims of whatever nature arising from any accident, injury, or damage whatsoever, caused to any person, or the property of any person, occurring in relation to the Successful Respondent's performance of any services requested hereunder during the term of the Contract and/or any Ensuing Agreement(s).

The Successful Respondent shall timely report all claims, demands, suits, actions, proceedings, liens or judgements to the County and shall, upon the receipt of any claim, demand, suit, action, proceeding, lien or judgement, not later than the fifteenth (15<sup>th</sup>) day of each month; provide the County with a written report on each such matter, setting forth the status of each matter, the schedule or planned proceedings with respect to each matter and the cooperation or assistance, if any, of the County required by the Successful Respondent in the defense of each matter. The Successful Respondent's duty to defend, indemnify and hold the County harmless shall be absolute. It shall not abate or end by reason of the expiration or termination of the Contract and/or any Ensuing Agreement(s), unless otherwise agreed by the County in writing. The provisions of this section shall survive the termination of the Contract and shall remain in full force and effect with respect to all such matters no matter when they arise.

In the event of any dispute between the parties, as to whether a claim, demand, suit, action, proceeding, lien or judgement, that appears to have been caused by or appears to have arisen out of or in connection with acts or omissions of the County, the Respondent shall nevertheless fully defend such claim, demand, suit or action, proceeding, lien or judgement, until and unless there is a determination by a court of competent jurisdiction that the acts and omissions of the Respondent are not an issue in the matter.

The Successful Respondent's indemnification shall cover, and the Successful Respondent agrees to, indemnify the County, in the event the County is found to have been negligent for having selected the Successful Respondent to perform the work described in this request. The provision by the Successful Respondent of insurance shall not limit the liability of the Successful Respondent under the Contract and/or any Ensuing Agreement(s).



#### **4.14 WAIVER OF SUBROGATION**

The Successful Respondent and the Successful Respondent's insurance carrier waive any and all rights whatsoever with regard to subrogation against the County as an indirect party to any suit arising out of personal or property damages resulting from the Respondent's performance under this Contract and any Ensuing Agreement(s).

#### **4.15 RELATIONSHIP OF THE PARTIES**

The Successful Respondent shall be an independent contractor and shall assume all of the rights, obligations, liabilities, applicable to it as such independent contractor hereunder and any provisions herein which may appear to give the County the right to direct the Successful Respondent as to details of doing work herein covered, or to exercise a measure of control over the work, shall be deemed to mean that the Successful Respondent shall follow the desires of the County in the results of the work only. The County shall not retain or have the right to control the Successful Respondent's means, methods or details pertaining to the Successful Respondent's performance of the work. The County and the Successful Respondent hereby agree and declare that the Successful Respondent is an independent contractor and as such meets the qualifications of an "Independent Contractor" under Texas Workers Compensation Act, Texas Labor Code, Section 406.141, that the Successful Respondent is not an employee of the County, and that the Successful Respondent and its employees, agents and subcontractors shall not be entitled to workers compensation coverage or any other type of insurance coverage held by the County.

#### **4.16 SOLE PROVIDER**

The Successful Respondent agrees and acknowledges that it shall not be considered a sole provider of the goods and/or services described herein and that the County may contract with other providers of such goods and/or services if the County deems, at its sole discretion, that multiple providers of the same goods and/or services will serve the best interest of the County.

#### **4.17 FORCE MAJEURE**

If the party obligated to perform is prevented from performance by an act of war, order of legal authority, act of God, or other unavoidable cause not attributable to the fault or negligence of said party, the other party shall grant such party relief from the performance. The burden of proof for the need of such relief shall rest upon the party obligated to perform. To obtain release based on force majeure, the party obligated to perform shall file a written request with the other party.

#### **4.18 SEVERABILITY**

If any provision of this RFCSP, the Contract or any Ensuing Agreement(s) shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision thereof, but rather the entire RFCSP, Contract or any Ensuing Agreement(s) will be construed as if not containing the particular invalid or unenforceable provision or provisions, and the rights and obligation of the parties shall be construed and enforced in accordance therewith. The parties acknowledge that if any provision of this RFCSP, the Contract or any Ensuing Agreement(s) is determined to be invalid or unenforceable, it is the desire and intention of each that such provision be reformed and construed in such a manner that it will, to the maximum extent practicable, give effect to the intent of this RFCSP, the Contract or any Ensuing Agreement(s) and be deemed to be validated and enforceable.

#### **4.19 EQUAL OPPORTUNITY**

Neither party shall discriminate against any employee or applicant for employment because of race, color, sex, religion or national origin.

#### **4.20 NOTICE**

Any notice to be given shall be in writing and may be distributed by personal delivery, or by registered or certified mail, return receipt requested, addressed to the proper party, at the following address:

The County: Williamson County Purchasing Department  
Attn: Purchasing Agent  
901 South Austin Avenue  
Georgetown, Texas 78626

The Respondent: Address set out in Respondent's Transmittal Letter

Notices given in accordance with this provision shall be effective upon (1) receipt by the party to which notice is given, or (2) on the third (3rd) calendar day following mailing, whichever occurs first.

#### **4.21 SALES AND USE TAX EXEMPTION**

The County is a body, corporate and politic, under the laws of the State of Texas and claims exemption from sales and use taxes under Texas Tax Code, Section 151.309, as amended, and the services and/or goods subject hereof are being secured for use by the County.

#### **4.22 COMPLIANCE WITH LAWS**

The County and the Successful Respondent shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any matter affecting the performance of the Contract and any Ensuing Agreement(s), including, without limitation, Workers' Compensation laws, salary and wage statutes and regulations, licensing laws and regulations. When required, the Successful Respondent shall furnish the County with certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees above specified.

#### **4.23 INCORPORATION OF EXHIBITS, APPENDICES AND ATTACHMENTS**

All of the Exhibits, Appendices and Attachments referred to herein are incorporated by reference as if set forth verbatim herein. Any conflicting terms in the Contract documents will be resolved at the sole discretion of the Commissioners Court.

#### **4.24 NO WAIVER OF IMMUNITIES**

Nothing herein shall be deemed to waive, modify or amend any legal defense available at law or in equity to the County, its past or present officers, employees, or agents, nor to create any legal rights or claim on behalf of any third party. The County does not waive, modify, or alter to any extent whatsoever the availability of the defense of governmental immunity under the laws of the State of Texas and of the United States.

#### **4.25 NO WAIVER**

The failure or delay of any party to enforce at any time or any period of time any of the provisions of this RFCSP, the Contract or any Ensuing Agreement(s) shall not constitute a present or future waiver of such provisions nor the right of either party to enforce each and every provision. Furthermore, no term or provision hereof shall be deemed waived and no breach excused unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. Any consent by any party to, or waiver of, a breach by the other, whether expressed or implied, shall not constitute a consent to, waiver of or excuse for any other, different or subsequent breach.

#### **4.26 CURRENT REVENUES**

The obligations of the parties under the Contract and any Ensuing Agreement(s) do not constitute a general obligation or indebtedness of the County for which the County is obligated to levy, pledge, or collect any of taxation. It is understood and agreed that the County shall have the right to terminate the Contract and any Ensuing Agreement(s) at the end of any the County fiscal year if the governing body of the County does not appropriate sufficient funds as determined by the County's budget for the fiscal year in question. The County may effect such termination by giving written notice of termination to the Successful Respondent at the end of its then-current fiscal year.

#### **4.27 BINDING EFFECT**

This Contract and any Ensuing Agreement(s) shall be binding upon and inure to the benefit of the parties and their respective permitted assigns and successors.

#### **4.28 SAFETY**

The Successful Respondent is responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with any services to be provided hereunder. The safety program shall comply with all applicable requirements of the current federal Occupational Safety and Health Act and all other applicable federal, state and local laws and regulations.

#### **4.29 GENERAL OBLIGATIONS AND RELIANCE**

The Successful Respondent shall perform all services and/or provide all goods, as well as those reasonably inferable and necessary for completion and provision of services and/or goods required hereunder. The Successful Respondent shall keep the County informed of the progress and quality of the services. The Successful Respondent agrees and acknowledges that the County is relying on the Successful Respondent's represented expertise and ability to provide the goods and/or services described herein. The Successful Respondent agrees to use its best efforts, skill, judgment, and abilities to perform its obligations in accordance with the highest standards used in the profession and to further the interests of the County in accordance with the County's requirements and procedures. The Successful Respondent's duties, as set forth herein, shall at no time be in any way diminished by reason of any approval by the County, nor shall the Successful Respondent be released from any liability by reason of such approval by the County, it being understood that the County at all times is ultimately relying upon the Successful Respondent's skill and knowledge in performing the services and providing any goods required hereunder.

#### **4.30 CONTRACTUAL DEVELOPMENT**

The Commissioners Court may award the Contract on the basis of the initial Proposals received, without any further or additional discussions. Therefore, each initial Proposal should contain the Respondent's best terms and offer. The contents of the RFCSP and the selected Proposal will become an integral part of the Contract, but may be modified, at Williamson County's sole discretion, by provisions of an Ensuing Agreement. Therefore, the Respondent must agree to inclusion in an Ensuing Agreement of the Proposal specifications, terms and conditions of this RFCSP. Williamson County and its architect or engineer may discuss with the Successful Respondent options for a scope or time modification and any price change associated with the modification. In the event such discussions are conducted and Williamson County and the Successful Respondent cannot agree to scope or time modifications and any price change associated with such modifications, the County may still opt to contract with the Successful Respondent based on the selected Respondent's original Proposal to the RFCSP.

The Successful Respondent shall be required to execute a formal contract at Williamson County offices in Georgetown, Texas within ten (10) days after the award. Said contract shall be in the same form as the Agreement Between Owner and Contractor which begins on the following page. The only anticipated changes in the contract will be to include additional exhibits, to fill in blanks to identify the contractor, and terms relating to the compensation, or to revise the contract to accommodate corrections, changes in the scope of services, or changes pursuant to addenda issued. Respondents should raise any questions regarding the terms of the contract, or submit requested changes in said terms, in the form of written questions or submittals. Because the signed contract will be substantively and substantially derived from the attached contract, each Respondent is urged to seek independent legal counsel as to any questions about the terms, conditions or provisions contained in the attached contract before submitting a Proposal. Again, the attached contract contains important legal provisions and is considered part and parcel of this RFCSP. Failure or refusal to sign aforesaid contract shall be grounds for Williamson County to revoke any award which has been issued, forfeit security, if applicable, and select another Respondent.

#### **4.31 ENTIRE AGREEMENT**

The Contract and any Ensuing Agreement(s) shall supersede all prior Agreements, written or oral between the Successful Respondent and the County and shall constitute the entire Agreement and understanding between the parties with respect to the services and/or goods to be provided. Each of the provisions herein shall be binding upon the parties and may not be waived, modified, amended or altered, except by writing signed by the Successful Respondent and the County.

#### **4.32 SURVIVABILITY**

All applicable agreements that were entered into between the Successful Respondent and the County, under the terms and conditions of the Contract and/or any Ensuing Agreement(s), shall survive the expiration or termination thereof for ninety (90) days unless a new contract has been awarded.

The County may exercise, by written notice to the Successful Respondent no later than ten (10) calendar days of the Contract expiration, this clause for emergency cases only.

#### **4.33 PAYMENT**

The County's payment for goods and services shall be governed by the Texas Government Code, Chapter 2251. An invoice shall be deemed overdue the thirty-first (31<sup>st</sup>) day after the later of the following:

- A. The date the County receives the goods under the Contract;
- B. The date the performance of the service under the Contract is completed; or
- C. The date the Williamson County Auditor receives an invoice for the goods or services.

Interest charges for any overdue payments shall be paid by the County in accordance with Texas Government Code, Section 2251.025. More specifically, the rate of interest that shall accrue on a late payment is the rate in effect on September 1 of the County's fiscal year in which the payment becomes due. The said rate in effect on September 1 shall be equal to the sum of one (1) percent and the prime rate published in the Wall Street Journal on the first (1<sup>st</sup>) day of July of the preceding fiscal year that does not fall on a Saturday or Sunday.

In the event that an error appears in an invoice submitted by the Successful Respondent, the County shall notify the Successful Respondent of the error not later than the twenty-first (21st) day after the date the County receives the invoice. If the error is resolved in favor of the Successful Respondent, the Successful Respondent shall be entitled to receive interest on the unpaid balance of the invoice submitted by the Successful Respondent beginning on the date that the payment for the invoice became overdue. If the error is resolved in favor of the County, the Successful Respondent shall submit a corrected invoice that must be paid in accordance within the time set forth above. The unpaid balance accrues interest as provided by the Texas Government Code, Chapter 2251, if the corrected invoice is not paid by the appropriate date.

As a minimum, invoices shall include:

- A. Name, address, and telephone number of the Successful Respondent and similar information in the event the payment is to be made to a different address.
- B. The County Contract, Purchase Order.
- C. Identification of items or service as outlined in the Contract.
- D. Quantity or quantities, applicable unit prices, total prices and total amount.
- E. Any additional payment information which may be called for by the Contract.

Payment inquiries should be directed to the following address:

Williamson County Auditor's Office, Accounts Payable Department  
Email: [accountspayable@wilco.org](mailto:accountspayable@wilco.org)  
Phone: 512-943-1500

#### **4.34 CONTRACTUAL FORMATION AND ENSUING AGREEMENT**

The RFCSP and the Respondent's Proposal, when properly accepted by the Commissioners Court, shall constitute a Contract equally binding between the Successful Respondent and the County. The Successful Respondent may be required by Williamson County to sign an additional Agreement containing terms necessary to ensure compliance with the RFCSP and Respondent's Proposal.

#### **4.35 LEGAL LIABILITY INFORMATION**

The Successful Respondent shall disclose all legal liability information by listing any pending litigation anticipated litigation that your firm is involved in including, but not limited to, potential or actual legal matters with private parties and any local, state, federal or international governmental entities. The County reserves the right to consider legal liability information in the recommendation of any proposed contract to the Commissioners Court.

#### **4.36 CONFIDENTIALITY**

Respondent expressly agrees that it will not use any direct or incidental confidential information that may be obtained while working in a governmental setting for its own benefit, and agrees that it will not access unauthorized areas or confidential information and it will not disclose any information to unauthorized third parties, and will take care to guard the security of the information at all times.

#### **4.37 INCLEMENT WEATHER**

In case of inclement weather or any other unforeseen event causing the County to close for business on the date of a Proposal submission deadline, the Proposal closing will automatically be postponed until the next business day the County is open. If inclement weather conditions or any other unforeseen event causes delays in carrier service operations, the County may issue an Addendum to all known Respondents interested in the project to extend the deadline. It will be the responsibility of the Respondent to notify the County of their interest in the project if these conditions are impacting their ability to turn in a submission within the stated deadline. The County reserves the right to make the final judgement call to extend any deadline.

#### **4.38 AIR QUALITY**

In determining the overall best Proposal, the County may, to the extent applicable, exercise the option granted to local governments under the Texas Local Government Code, Section 271.907.

This option allows the County to evaluate Proposals and give preference to goods and/or services of Respondent that demonstrates that the Respondent meets or exceeds any and all state or federal environmental standards, including voluntary standards, relating to air quality. If the Proposal being submitted will have an effect on air quality for the County (as it relates to any state, federal, or voluntary air quality standard), then the Respondent is encouraged to provide information in narrative indicating anticipated air quality impact. All Respondents are expected to meet all mandated state and federal air quality standards.

#### **4.39 COOPERATIVE PURCHASING PROGRAM**

During the term of the Contract resulting from this RFCSP, the County would like to afford the same prices, terms and conditions to other political subdivisions or public entities. Another entity's participation in the Contract resulting from this RFCSP is subject to a properly authorized Purchasing Cooperative Inter-local Agreement (ILA) with the County. Any liability created by purchase orders issued against the Contract shall be the sole responsibility of the governmental agency placing the order.

#### **4.40 PREVAILING WAGE RATES**

To the extent this procurement is for the construction of a public work, including a building, highway, road, excavation, and repair work or other project development or improvement, paid for in whole or in part from public funds, without regard to whether the work is done under public supervision or direction, Texas Government Code, Chapter 2258, shall apply and the contractor shall pay not less than the wage scale of the various classes of labor as shown on the "Prevailing Wage Schedule" provided by the County. Pursuant to Texas Government Code, Section 2258.022(a)(2), the County has determined the general prevailing rate of the "Prevailing Wage Schedule" in the locality in which the public work is to be performed for each craft or type of worker needed to execute the contract and the prevailing rate for legal holiday and overtime work by using the prevailing wage rate as determined by the United States Department of Labor in accordance with the United States Code, Section 276a (Davis-Bacon Act).

The specified wage rates are minimum rates only, and are not representations that qualified labor adequate to perform the work is available locally at the prevailing wage rates. The County is not bound to pay—and will not consider—any claims for additional compensation made by any contractor because the contractor pays wages in excess of the applicable minimum rate contained in the Contract Documents. The "Prevailing Wage Schedule" is not a representation that quantities of qualified labor adequate to perform the work may be found locally at the specified wage rates.

For classifications not shown, workers shall not be paid less than the wage indicated for laborers. The contractor shall notify each worker commencing work on the project the worker's job classification and the established minimum wage rate required to be paid, as well as the actual amount being paid. The notice must be delivered to and signed in acknowledgement of receipt by the employee and must list both the monetary wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by the County, competent evidence of compliance with the Texas Prevailing Wage Law shall be furnished by contractor. A copy of each worker wage rate notification shall be submitted to the County with the Application for Payment for the period during which the worker began on-site activities.

Should the contractor at any time become aware that a particular skill or trade not reflected on the County's "Prevailing Wage Schedule" will be or is being employed in the work, whether by the contractor or by a subcontractor, the contractor shall promptly inform the County and shall specify a wage rate for that skill or trade, which shall bind the contractor.

The contractor and any subcontractor shall pay to the County a penalty of sixty dollars (\$60.00) for each worker employed for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the "Prevailing Wage Schedule" or any supplement thereto. The contractor and each subcontractor shall keep, or cause to be kept, an accurate record showing the names and occupations of all workers employed in connection with the work, and showing the actual per diem wages paid to each worker, which records shall be open at all reasonable hours for the inspection by the County.

Within thirty-one (31) days of receipt of information concerning a violation of the Texas Government Code Chapter 2258, the County shall make an initial determination as to whether good cause exists to believe a violation occurred. The County's decision on the initial determination shall be reduced to writing and sent to the contractor or subcontractor against whom the violation was alleged, and to the affected worker. When a good cause finding is made, the County shall retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the "Prevailing Wage Schedule" and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

After the County makes its initial determination, the affected contractor or subcontractor and worker have fourteen (14) calendar days in which to resolve the issue of whether a violation occurred, including the amount that should be retained by the County or paid to the affected worker. If the contractor or subcontractor and affected worker reach an agreement concerning the worker's claim, the contractor shall promptly notify the County in a written document signed by the worker. If the contractor or Subcontractor and affected worker do not agree before the fifteenth (15<sup>th</sup>) calendar day after the County determination, the contractor or subcontractor and affected worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Chapter 171, (Texas Civil Practice and Remedies Code). The parties to the arbitration have ten (10) calendar days after the expiration of the fifteen (15) calendar days referred to above, to agree on an arbitrator; if by the eleventh (11<sup>th</sup>) calendar day there is no agreement to an arbitrator, a district court shall appoint an arbitrator on the petition of any of the parties to the arbitration.

If an arbitrator determines that a violation has occurred, the arbitrator shall assess and award against the contractor or subcontractor the amount of penalty as provided above and the amount owed the worker. The County may use any amounts retained hereunder to pay the worker the amount as designated in the arbitration award. If the County has not retained enough from the contractor or subcontractor to pay the worker in accordance with the arbitration award, the worker has a right of action against the contractor and subcontractor as appropriate, and the surety of either to receive the amount owed, attorneys' fees and court costs. The contractor shall promptly furnish a copy of the arbitration award to the County.

Money retained pursuant to the provisions above shall be used to pay the claimant or claimants the

difference between the amount the worker received in wages for labor on the project at the rate paid by the contractor or subcontractor and the amount the worker would have received at the general prevailing wage rate as provided by the agreement of the claimant and the contractor or subcontractor affected, or in the arbitrator's award. The full statutory penalty of sixty dollars (\$60.00) per calendar day of violation per worker shall be retained by Williamson County to offset its administrative costs, pursuant to Texas Government Code, Section, 2258.023. Any retained funds in excess of these amounts shall be paid to the contractor on the earlier of the next progress payment or final payment. Provided, however, that the County shall have no duty to release any funds to either the claimant or the contractor until it has received the notices of agreement or the arbitration award as provided under the provision herein-above.

#### **4.41 CONFIDENTIALITY**

The Respondent expressly agrees that it will not use any direct or incidental confidential information that may be obtained while working in a governmental setting for its own benefit, and agrees that it will not access unauthorized areas or confidential information and it will not disclose any information to unauthorized third parties, and will take care to guard the security of the information at all times.





## **Additional Stipulations**

### **1 Additional Stipulations**

#### **1.1 Introduction**

The Proposal evaluation and selection process is detailed in this section, as are other factors, and the format in which the Price Proposal of each Proposal should be submitted.

#### **1.2 Price Proposal**

The Respondent must utilize the price sheet form as provided which will be attached to this RFCSP. The Price Proposal should be included in each copy of the Proposal if submitted in paper form.

**Note: Any reworked version of the Price Proposal that is intended to be a substitute and that is provided by a Respondent may be determined as non-responsive, and may, at the County's sole discretion, result in the Respondent's disqualification.**

#### **1.3 Proposal Evaluation and Selection**

##### **1.3.1 Evaluation/Selection Criteria**

No later than the 45<sup>th</sup> day after the date on which the Proposals are opened, all Proposals received by the designated date and time will be evaluated based on the Respondent's Proposal and the published evaluation Criteria. Other information may be taken into consideration when that information potentially provides an additional benefit to the County, and further helps the County in receiving the services listed in the RFCSP.

## Additional Stipulations - Proposal

**Respondents' Proposals must meet all mandatory (minimum) requirements in order to be scored. Scoring may also be based on total information gathered by the County at its discretion, including but not limited to respondent's ability to perform "without delay or interference, character, responsibility, integrity, and experience or demonstrated capability; quality of prior work; compliance with laws; and noncompliance with requirements as to submission of relevant information."**

### **1.3.2 Evaluation Committee and Selection Process**

Williamson County will conduct a comprehensive, fair and impartial evaluation of all proposals received in response to the RFCSP. All Proposals will be evaluated by a County appointed Evaluation Committee. The Evaluation Committee may be composed of County Staff that may have expertise, knowledge or experience with the services and/or goods being procured hereunder. Those Respondents meeting all requirements and deemed most qualified may receive further evaluation via telephone or in-person interviews with members of the Evaluation Committee. Respondents may be interviewed and re-scored based upon the same criteria or other criteria, to be determined by the Evaluation Committee. The County will select a Respondent determined best and most responsible Respondent meeting minimum specifications and qualifications.

Respondents are advised that the Evaluation Committee, at its option, may recommend an award strictly on the basis of the initial RFCSP responses, or in addition, may have interviews with firms to determine its final recommendation. Williamson County then selects the proposal that offers the best value based on the published selection criteria and its ranking evaluation. Following the selection, the contract negotiation process begins. The County negotiates first with the highest ranked offeror. At this stage, the County and its architect or engineer may discuss modifications to the proposed score, time and price. Modifications are not required, and if they are discussed and not agreed to by the County and the offeror, a final contract may still be negotiated and agreed upon based on the original response to the RFCSP.

If the two parties are unable to reach a final agreement, the County must inform the offeror in writing that negotiations are ended. The County may then negotiate with the next ranked offeror. This continues in the order of the selection ranking until a contract is reached or all proposals are rejected. In this form of contract procurement, the County is not restricted to considering price alone in its selection, but may consider any other factor from among the established selection criteria to determine which offeror offers the County the best value. The Evaluation Committee will present its recommendation to the Williamson County Commissioners Court for approval and award of contract.

### **1.3.3 Mandatory Criteria**

Minimum requirements (if applicable) must be passed in order to be considered for scoring as described in section 1.3.4.

## Additional Stipulations - Proposal

**1.3.4 Graded Evaluation Factors**

The following graded evaluation factors will be used to determine how well a Respondent(s) meet(s) the desired performance.

- 1. The price (40% of score – 40 points max)**
  - a. Submit pricing per the attached price sheet.
- 2. The Respondent's proposed personnel for the project (20% of score – 15 points max)**
  - a. Respondent to provide list of proposed staff to be used on the project. Provide names of Company Owner, Project Manager, Superintendent, Etc. and/or equivalents.
- 3. Respondent's experience and reputation (20% of score – 15 points max)**
  - a. Respondent to provide a list of 3 similar (or larger) projects performed in Texas. Please include project name, owner contact name & contact information, brief project description with size/square footage and contracted dollar amount.
- 4. Respondents office location as it relates to distance from the project site (20% of score – 15 points max)**
  - a. Provide verifiable physical address of Respondent's closest permanent location to project and length of time at that location.

**1.3.5 Interviews**

Interview scoring (if applicable) will be provided along with invitation to interview candidates.

**1.3.6 Additional Evaluation Information**

The County reserves the right to award a contract for any or all areas of this RFCSP.

It is the responsibility of the Respondent to provide sufficient information/data in a convincing manner to the County to assure all of the terms, conditions and expectations for satisfactory performance of the services requested herein will be met.

**All contact during the evaluation phase shall be through the Williamson County Purchasing Department only.** The Respondent shall neither contact nor lobby evaluators during the evaluation process. Attempts by the Respondent to contact and/or influence members of the Evaluation Committee may result in disqualification of Proposal.

## Additional Stipulations - Proposal

**1.4 Technical Contact**

Randy Bell (or successor), Director of Parks, Williamson County shall serve as the County's Technical Contact with designated responsibility to ensure compliance with the requirements of the Contract and any Ensuing Agreement, such as, but not limited to, acceptance, inspection and delivery. The Technical Contact together with the Purchasing Department will serve as a liaison between the Williamson County Commissioners Court and the Successful Respondent.

**1.5 Time for Performance**

A time frame of two hundred thirty (230) days (two hundred (200) to substantial completion/thirty (30) to final completion) is given for completion of plans on this bid. This may begin at the time specified by the County within the three hundred sixty-five (365) days of the pricing quoted on this bid, starting on the day of award. The Contractor will be given written notice to begin work on this project. The Work on this project shall begin within ten (10) calendar days after such notification.

Liquidated damages for failure to substantially complete the work within the allotted time will be applied. Liquidated damages are \$500 per working day.

The Contractor will be given written notice to begin work on this project. Work on this project shall begin within five (5) working days after such notification. Failure to begin work within the allotted time will result in liquidated damages being incurred at the rate of \$500 per working day

**1.6 Contract Extensions**

At the end of the Initial Contract Term, the Commissioners Court reserves the right to extend the Initial Contract Term, by mutual agreement of both parties, as it deems to be in the best interest of the County. The extension may be negotiated if renewal indications are provided within the County's timeframe which reflect renewal terms for the forthcoming policy year that are deemed by the County to be competitive with current market conditions. However, the County may terminate the contract at any time if funds are restricted, withdrawn, not approved, or if service is unsatisfactory. Any extension will be in twelve (12) month increments for up to an additional twenty-four (24) months, with the terms and conditions remaining the same. The total period of the contract, including all extensions will not exceed a maximum combined period of sixty (60) months. The extension of the contract is contingent on the appropriation of necessary funds by the Commissioners Court for the fiscal year in question. Upon the failure of the Commissioners Court to so appropriate in any year, the Respondent may elect to terminate the contract, with no additional liability to the County. The County and the Respondent agree that termination shall be the Respondent's sole remedy under this circumstance.

## Additional Stipulations - Proposal

## 1.7 Insurance Requirements

By signing its Proposal, the Respondent agrees to maintain at all times during any term of the Contract and any ensuing Agreement at Respondent's cost, insurance in accordance with this provision.

Respondent will be required to submit Certificates of Insurance **prior to commencing work.**

All certificates of insurance coverage as specified below must be provided to the following location:

Williamson County Purchasing Department  
901 S Austin Ave  
Georgetown, Texas 78626

Failure to comply with these Insurance Requirements may result in the termination of the Contract and any ensuing Agreement(s) between the Successful Respondent and County.

The following coverage limits shall be required at a minimum:

- |    |                                                                                                                                                                            |                              |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| A. | Worker's Compensation                                                                                                                                                      | Statutory – Texas Law        |
| B. | Employer's Liability:                                                                                                                                                      |                              |
|    | Bodily Injury by Accident                                                                                                                                                  | \$500,000 Ea. Accident       |
|    | Bodily Injury by Disease                                                                                                                                                   | \$500,000 Ea. Employee       |
|    | Bodily Injury by Disease                                                                                                                                                   | \$500,000 Policy Limit       |
| C. | Comprehensive general liability including completed operations and contractual liability insurance for bodily injury, death, or property damages in the following amounts: |                              |
|    | COVERAGE                                                                                                                                                                   | PER PERSON    PER OCCURRENCE |
|    | Comprehensive General Liability                                                                                                                                            | \$1,000,000    \$1,000,000   |
|    | Aggregate policy limits:                                                                                                                                                   | \$1,000,000                  |

Successful Respondent's property will not be covered by any insurance that may be carried by Williamson County. Successful Respondent assumes the risk of loss on its contents and property that are situated on/in/around the County property. The Successful Respondent is strongly encouraged to obtain insurance on its property to the extent deemed necessary by the Successful Respondent.

The deductible for an insurance policy required hereunder shall not exceed \$100,000. **The County shall be named as an additional insured under any policy of insurance required hereunder.**

Successful Respondent shall not commence any work until it has obtained all required insurance and such insurance has been approved by County. Successful Respondent shall not allow any subcontractor(s) to commence work to be performed until all required insurance has been obtained by such subcontractor(s) and approved by County. Approval of the insurance by County shall not relieve or decrease the liability of Successful Respondent or its subcontractor(s) hereunder.

## Additional Stipulations - Proposal

The required insurance must be written by a company approved to do business in the State of Texas with a financial standing of at least an A- rating, as reflected in Best's insurance ratings or by a similar rating system recognized within the insurance industry at the time the policy is issued. Successful Respondent shall furnish County with a certificate of coverage issued by the insurer. Successful Respondent shall not cause any insurance to be canceled nor permit any insurance to lapse. ALL INSURANCE CERTIFICATES SHALL INCLUDE A CLAUSE TO THE EFFECT THAT THE POLICY SHALL NOT BE CANCELED OR REDUCED, RESTRICTED OR LIMITED UNTIL TEN (10) CALENDAR DAYS AFTER COUNTY HAS RECEIVED WRITTEN NOTICE AS EVIDENCED BY RETURN RECEIPT OF REGISTERED OR CERTIFIED LETTER.

It is the intention of the County, and agreed to and hereby acknowledged by the Successful Respondent, that no provision of this Contract or any ensuing Agreement shall be construed to require the County to submit to mandatory arbitration or mediation in the settlement of any claim, cause of action or dispute, except as specifically required in direct connection with an insurance claim or threat of claim under an insurance policy required hereunder which absolutely requires arbitration or mediation of such claim, or as otherwise required by law or a court of law with jurisdiction over the provisions of this Contract or any ensuing Agreement.

**Workers' Compensation Coverage Requirements**

The Texas Labor Code, Section 406.096, requires workers' compensation insurance coverage for all persons providing services on a building or construction project for a governmental entity such as the County. The rule requires the County to timely obtain certificates of coverage and retain them for the duration of the project. The rule also sets out the language to be included in the Bid specifications and in contracts awarded by a governmental entity and the information required to be in the posted notice to employees. The rule is adopted under the Texas Labor Code, Section 402.061.

The information provided below is a result of this rule. By submitting your Bid to the County, you are acknowledging that this rule is a part of these Bid specifications, and that you will observe and abide by all of the requirements outlined in the rule. You are further agreeing that should your Bid be accepted by the Williamson County Commissioners Court, the necessary certificates of coverage showing workers' compensation coverage, will be provided to the following name and address prior to beginning work:

Williamson County Purchasing Department  
901 S. Austin Ave.  
Georgetown, TX 78626

Failure to comply with this request may result in termination of the Contract and any ensuing Agreement. If you have any questions related to this ruling and/or requirement, you are encouraged to contact either the Williamson County Purchasing Department at (512) 943-1546, or you may call the Texas Workers' Compensation Commission at (800) 372-7713.

- A. The following words and terms, when used in this provision, shall have the following meanings. Terms not defined in this rule shall have the meaning defined in the Texas Labor Code, if so defined.

## Additional Stipulations - Proposal

1. Certificate of coverage (certificate) – A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a workers' compensation coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees (including those subject to a coverage agreement) providing services on a project, for the duration of the project.
  2. Building or Construction – Has the meaning defined in the Texas Labor Code, Section 406.096(e)(1).
  3. Contractor – A person bidding for or awarded a building or construction project by Williamson County.
  4. Coverage – Workers' compensation insurance meeting the statutory requirements of the Texas Labor Code, Section 401.011(44).
  5. Coverage agreement – A written agreement on form TWCC-81, form TWCC-82, form TWCC-83, or form TWCC-84, filed with the Texas Workers' Compensation Commission which establishes a relationship between the parties for purposes of the Texas Workers' Compensation Act, pursuant to the Texas Labor Code, Chapter 406, Subchapters F and G, as one of employer/employee and establishes who will be responsible for providing workers' compensation coverage for persons providing services on the project.
  6. Duration of the project--Includes the time from the beginning of work on the project until the work on the project has been completed and accepted by the County.
  7. Persons providing services on the project ("subcontractor" in the Texas Labor Code, Section 406.096) – includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
  8. Project – Includes the provision of all services related to a building or construction contract for the County.
- B. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of the Texas Labor Code, Section 401.011(44), for all employees of the contractor providing services on the project, for the duration of the project.
- C. The Contractor must provide a certificate of workers compensation coverage to Williamson County prior to being awarded the Contract.

## Additional Stipulations - Proposal

- D. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with Williamson County showing that coverage has been extended.
- E. The contractor shall obtain from each person providing services on a project, and provide to the County:
  - 1. A certificate of coverage, prior to that person beginning work on the project, so Williamson County will have on file certificates of coverage showing coverage for all persons providing services on the project; and
  - 2. No later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The contractor shall notify the County in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- H. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:
  - 1. Provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44), for all of its employees providing services on the project, for the duration of the project;
  - 2. Provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
  - 3. Provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;



## Additional Stipulations - Proposal

4. Obtain from each other person with whom it contracts, and provide to the contractor:
    - i. (a) a certificate of coverage, prior to the other person beginning work on the project; and
    - ii. (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
  5. Retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
  6. Notify the County in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
  7. Contractually require each person with whom it contracts, to perform as required by paragraphs 1 – 7, with the certificates of coverage to be provided to the person for whom they are providing services
- J. By signing this Contract or providing or causing to be provided a certificate of coverage, the contractor is representing to Williamson County that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- K. The contractor's failure to comply with any of these provisions is a breach of Contract by the contractor which entitles the County to declare the contract void if the contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the County.

# Expo Center RV Park

## Williamson County

### Civil Specifications



12-04-2017



9500 Amberglen Blvd., Bldg. F, Ste. 125  
Austin, Texas 78729  
P: (512) 777-4600

## **Texas Department of Transportation Standard Specifications**

2014 Standard Specifications can be found at: <https://www.txdot.gov/business/resources/txdot-specifications.html> and are incorporated by reference.

- Item 104 – Removing Concrete**
- Item 110 – Excavation**
- Item 132 – Embankment**
- Item 150 – Blading**
- Item 152 – Road Grader Work**
- Item 154 – Scraper Work**
- Item 156 – Bulldozer Work**
- Item 158 – Specialized Excavation Work**
- Item 204 – Sprinkling**
- Item 210 – Rolling**
- Item 216 – Proof Rolling**
- Item 310 – Prime Coat**
- Item 320 – Equipment for Asphalt Concrete Pavement**
- Item 360 – Concrete Pavement**
- Item 400 – Excavation and backfill for Structures**
- Item 402 – Trench Excavation Protection**
- Item 420 – Concrete Structures**
- Item 421 – Hydraulic Cement Concrete**
- Item 432 – Riprap**
- Item 438 – Cleaning and Sealing Joints and Cracks (rigid Pavement and Bridge Decks)**
- Item 440 – Reinforcing Steel**
- Item 450 – Railing**
- Item 462 – Concrete Box Culverts and Storm Drains**
- Item 464 – Reinforced Concrete Pipe**
- Item 465 – Manholes and Inlets**
- Item 466 – Headwalls and Wingwalls**
- Item 467 – Safety End Treatments**
- Item 471 – Frames, Grates, Rings and Covers**
- Item 473 – Laying Culvert and Storm Drain Pipe**
- Item 474 – Slotted Drain**
- Item 500 – Mobilization**
- Item 502 – Barricades, Signs, and Traffic Handling**
- Item 506 – Temporary Erosion, Sedimentation, and Environmental Controls**
- Item 529 – Concrete Curb, Gutter, and Combined Curb and Gutter**
- Item 530 – Intersections, Driveways, and Turnouts**

**Item 531 – Sidewalks**  
**Item 666 – Retroreflectorized Pavement Markings**  
**Item 752 – Tree and Brush Removal**

**City of Taylor Standard Specifications**

**Item 101 – Street Signs**  
**Item 201 – Water System Improvements**  
**Item 301 – Wastewater System Improvements**

**Williamson County Standard Specifications**

**Item 247 – Flexible Base**  
**Item 260 – Lime Treatment (Road Mixed)**  
**Item 300 – Asphalts, Oils, and Emulsions**  
**Item 302 – Aggregates for Surface Treatments**  
**Item 310 – Prime Coat**  
**Item 316 – Surface Treatments**  
**Item 340 – Dense-Graded Hot-Mix Asphalt (Small Quantity)**  
**SP 1 – Decomposed Granite Walkways**  
**SP 2 – Back Flow Prevention Device**  
**SP 3 – Yard Hydrant**  
**SP 4 – Dump Station Lid**

## **CITY OF TAYLOR STANDARD SPECIFICATIONS**

Special Note: Specifications listed below are based on City of Taylor Standard Specifications. Any reference to the 'City' shall be replaced with the 'County'. All testing shown in the specifications below shall be performed by the contractor at his entire expense unless otherwise indicated by the County.

### ***Item 101 - STREET SIGNS***

#### **LOCATION**

Street signs shall be six (6") inches extruded, have white lettering on a green background, be engineer grade reflectorized, and include the block numbers along with the street name. Street signs shall be furnished and installed by the subdivider for all intersections within or abutting the subdivision. All signs shall be located in accordance with the Texas Manual on Uniform Traffic Control Devices.

#### **SIGNS**

All signs and mounts shall conform to the standards as set forth in the Texas Manual on Uniform Traffic Control Devices. All road identification signs are to have a green background with three (3) inch white reflective lettering.

#### **INSTALLATION**

The sign pole shall be buried to a minimum depth of two (2') feet and placed in a twelve (12") inch diameter concrete filled posthole. The pole shall be tall enough to accommodate all applicable signs. The bottom of the stop sign shall be located seven (7') feet above the finished grade of the surrounding ground.

#### **APPROVAL**

The developer shall submit a list of signs to be placed and a graphical representation of the signs for review by City Engineer prior to installation.

### ***Item 201 - WATER SYSTEM IMPROVEMENTS***

#### **GENERAL**

This section pertains to general design requirements for water distribution system construction in the City of Taylor.

All water lines shall be sized and designed in accordance with the City of Taylor determined by the City Engineer. In the absence of specific standards, all water supply, distribution, pumping, and storage improvements shall be designed in accordance with the most current standards of the American Water Works Association criteria adopted by the Texas Administrative Code, Chapter 290.

#### **LINE SIZES & LOCATIONS**

1. Standard water line sizes are, 8 inch, 10 inch, 12 inch, 16 inch, 20 inch, and 24 inch diameter. Other sizes may be approved by the City Engineer.

2. All water lines shall be looped where possible. Dead end lines shall not exceed 600 feet, unless approved by

the City Engineer.

3. Water lines shall be located within the right of way, not under paving. Along State Highways, water lines are required on both sides of the roadway. New water lines crossing existing streets shall be placed by boring. A steel casing shall be required under major and minor collector roadways, arterial roadways and State Highway. Open cut excavation will not be allowed to cross existing streets, unless approved by the City Engineer.

4. Automatic flushing valves are required for all dead-end mains of 50' or longer.

5. Easements for water line construction shall meet the following requirements:

a. The easement width shall be a minimum of 20 feet.

b. In areas where multiple utilities or extended depth or larger utilities exist the easement may need to be wider as specified by the City.

c. Larger easements may be required by the City Engineer to provide adequate space for maintenance.

6. All piping with mechanical couplings, push-on, or similar joints subject to internal pressure shall be designed with blocking, anchors, and restraining harnesses to preclude separation of joints.

7. Water lines exclusively for fire protection shall be dedicated to the public, unless the system is isolated from the public system by a detector check. All water lines shall be a minimum of eight (8") inches in diameter and looped when possible. Water lines shall not be located under paved surfaces where possible.

8. Water service for multiple units on a single lot shall be served via one Master Meter. The developer is responsible for providing and metering service to individual units.

## MATERIALS

All water lines and fittings shall be new materials and comply with the following:

1. Water Lines – All water lines shall be Polyvinyl Chloride (PVC) material and be designed, manufactured, and tested in accordance with the applicable requirements of AWWA C-900 (eight (8") inch through twelve (12") inch water pipe) AWWA C-905 (sixteen (16") inches and larger water pipe), and AWWA M-23. Pipe larger than 16" shall be Ductile Iron.

2. Other Pipe Material – All other materials must be submitted for approval by the City Engineer.

a. All PVC water pipe shall be blue in color.

b. Eight (8") inch through twelve (12") inch water pipe shall be pressure class 150, DR 18. Pressure class 200, DR 14 pipe may be required by the City Engineer in areas of high distribution system pressure, under roadways or other unusual circumstances.

3. Fittings - Fittings shall be ductile iron in accordance with AWWA C110 or AWWA C153.

a. Fittings: ANSI/AWWA C111/A21.11, except gaskets shall be neoprene or other synthetic rubber and factory installed.

b. All waterline pipe and fittings shall be new materials and produced in the USA

## INSTALLATION

All installations shall conform to the latest TCEQ, and AWWA Specifications, as amended by these standards.

1. All pipe shall be installed with a minimum of forty-eight (48") inches of cover over top of pipe.
2. The amount of open trench shall not exceed two hundred (200') feet from the end of the pipe laying operations, and no more than three hundred (300') feet of total open trench will be allowed. At the end of each work day, all trench excavation shall be backfilled and compacted to the end of the pipe laying operation.
3. All connections to existing water mains shall be made under pressure unless dry connections will not cause any loss of service. Under special conditions connections that cause an interruption of service may be performed with approval of the City Engineer.
4. Coated tracer wire and tape shall be installed in the embedment material twelve (12") inches above the pipe with the tracer wire terminating in in-line gate valve boxes accessible by City Staff.
5. Density tests shall be taken at a minimum of every three hundred (300') feet for every lift or determined by inspection. A maximum thickness of lift is required for all trench backfill. A geotechnical report should be submitted for all trenches. The density reports shall be submitted to the City Inspector. The City has the right to require additional tests if they are deemed necessary.
6. All density reports and bacteria test reports shall be completed, delivered to the City Engineer and Inspector, and approved before paving is allowed to begin. Bacteria test samples shall be taken by the City.
7. PVC water pipe and appurtenances shall be installed as specified in AWWA M-23 and in accordance with the pipe manufacturer's recommendations.
8. Fittings shall be installed in accordance with AWWA C-600.
  - a. All mechanical joint bends, tees, and reducers which require blocking shall be additionally restrained with EBAA Megalug retainer gland or approved equal.
  - b. All fittings must be polyethylene wrapped.

## FIRE HYDRANTS

1. Fire hydrants in commercial and industrial areas shall generally be at street intersections and so located that there will be a fire hydrant every three hundred (300') feet. Fire hydrants in a residential area shall be generally located on street intersections and not over five hundred (500') feet apart. City Fire Chief shall approve final fire hydrant locations.

### 2. Materials

- a. Fire hydrants shall be manufactured in accordance with AWWA C-502, Dry-Barrel Fire Hydrants.
- b. Hydrants shall be manufactured such that all maintenance and adjustments can be performed without excavation and such that hydrants may be faced in any direction in relation to base. The hydrant shall be of a

design that will permit extensions without disturbing the bottom section of the hydrant.

c. A gate valve shall be installed with each fire hydrant.

### 3. Manufacturers

Approved fire hydrants manufacturers are as follows:

a. Clow – Medalion

b. Mueller - Centurion

c. Kennedy – K81D

d. American Darling – B84B

### 4. Locations

a. Fire hydrants are to be located a minimum of three (3') feet and a maximum of six (6') feet behind the back of curb.

## VALVES

1. Resilient seated gate valves shall be used for six (6") inch and up to twenty-four (24") inch water lines.

Butterfly valves may be allowed as an addition to gate valves for lines sixteen (16") inches and larger when approved by the City Engineer.

2. Valves of approved design shall be installed at the intersections of all water mains so as to provide for proper maintenance and operation of the system and to provide a means of shutting off the supply to portions of the system for repairs. Three (3) valves shall be used on a four-way water line intersection and a minimum of two (2) valves shall be used on a three-way intersection.

### 3. Materials

#### a. Resilient Seated Gate Valves

1) Resilient seated gate valves six (6") inches through sixteen (16") inches shall meet or exceed the latest revisions of AWWA C509 and shall meet or exceed the requirements of these standards.

2) Resilient seated gate valves for buried service shall be furnished with a square two (2") inch operating nut. The valve box shall be Tyler Pipe 6850 series or approved equal. The valve box lid shall be painted safety blue. The paint shall be approved via submittal to the City.

3) All valves must open left and close right.

#### b. Butterfly Valves

Butterfly valves shall meet or exceed the latest revision of AWWA Standard C504 for Class 150B butterfly valves and shall meet or exceed the requirements of this specification. All valve components shall conform to Underwriters Laboratories classification in accordance with ANSI/NSF Standard 61.



#### 4. Installation

a. Valves shall be furnished with extensions, such that the working nut is a maximum of thirty-six (36") inches below grade.

b. Adjustable valve boxes shall be furnished and set on each valve in accordance with these standards.

Valves that are deeper than forty-eight (48") inches, AWWA C900 PVC pipe shall be used for stacks, as long as the adjustable valve box is used at the top.

c. After the final clean-up and alignment has been complete, the contractor shall cast in place a concrete block, around all valve box tops at the finish grade. See detail W-3.

d. Valves located within a right-of-way shall be indicated on the face of the curb, or where curbs do not exist, on a conspicuous location adjacent to the valve location. Markings are to be the stamping of a four (4") inch high letter "V" with a three-eighths (3/8") inch stroke with the point of the "V" pointing towards the valve location.

e. Valve markers shall be provided in rural areas.

#### 5. Manufacturers

a. Approved manufacturers of six (6") inch through twelve (12") inch resilient seated gate valves are as follows:

1) Mueller, Clow, American Darling and Kennedy

b. Approved manufacturers of sixteen (16") inch and larger butterfly valves are as follows:

1) Mueller, Clow, American Darling and Kennedy

#### AIR RELEASE AND FLUSHING VALVES

1. Adequate air relief, and flushing valves shall be provided for flushing, disinfecting, daily operation requirements, and repairs when required by the City Engineer. Air release valves shall be required on twelve (12") inches and larger water lines. Water lines shall be designed so that each section of the water line can be flushed at its lowest and highest points.

2. All dead end lines shall have a fire hydrant installed for flushing purposes. If installation of a fire hydrant is not possible, a flushing valve is required.

3. A fire hydrant shall be required at high points on water lines smaller than twelve (12") inches for air relief and flushing.

4. Materials - Air release valves and air/vacuum valves shall meet or exceed the latest revision of AWWA C512.

5. Automatic Flushing Valves shall be installed on all dead-end mains of 2" or larger that extend 150 linear feet or longer. Approved Manufacturer: Hydro Guard Standard Unit

A tapping sleeve and valve shall be used when connecting a new water line to an existing line. A resilient seated gate valve shall be flanged to the tapping sleeve. The tapping sleeve shall be a Smith-Blair Spec. 664-665 stainless steel tapping sleeve, or approved equal.

## WATER SERVICE

1. The water meter box shall be placed a minimum of two (2') feet behind the back of curb unless sidewalks are adjacent to the curb, then they are to be set seven (7') feet behind the back of curb, and the water service shall be a minimum of twelve (12") inches deep, covered with a meter box in place at grade. If no curb is present, the water service shall be located at the property line, a minimum of twelve (12") inches deep, covered with a meter box in place at grade. Along roadways without a curb the water service line shall be constructed at a minimum of twelve (12") inches below the ditch flow line.

2. Meter and service sizes will be determined by the developer prior to requesting service from the City. The minimum water service size between the water main and the meter shall be one (1") inch.

3. Water services on undeveloped lots shall be located at the property line and shall be a minimum of one (1") inch in diameter.

### 4. Materials

#### a. Service Saddle

Service saddle shall be double strap bronze with brass body or nylon / epoxy coated stainless steel double bolt wide straps. Minimum size tap shall be 1 inch diameter.

Approved manufacturers:

- 1) Smith Blair - Tapping Saddles up to 2" shall be epoxy coated with stainless steel straps
- 2) Tapping Sleeve 4" and larger shall be epoxy coated steel or ductile iron

#### b. Service Line

Service lines shall be 1" (single services) to 1.5" (double services) polyethylene SDR9.

#### c. Corporation.

1) Corporation stop shall be ball type with a diameter equal to the pipe size with compression outlet fitting, designed for a minimum working pressure of two hundred pounds per square inch (200 psi) and threaded counter clockwise.

2) Approved manufacturers are Ford or Mueller.

#### d. Angle Stop

1) Angle stop shall be set with compression inlet fitting and locking wings.

2) Approved manufacturers are Ford, Mueller or Smith Blair.

#### e. Meter Boxes

- 1) Single Meter boxes are to be DFW 1200 Series with AMR lid
- 2) Double Meter boxes are to be DFW 1500 Series with AMR lid
- 3) Traffic Rated Meter boxes shall be DFC "C" Series

## 5. Installation

### a. General

- 1) All water service shall be installed in accordance with these standards.
- 2) Each individual service location shall be saw cut into the face of the curb with a four (4") inch high "W" painted blue by the Contractor. If no curb exist a similar mark should be placed in the pavement near the edge of the roadway.

## FLUSHING VALVES

### 1. Materials

- a. Corporation stop shall be two (2") inch ball type with compression outlet fitting, designed for a minimum working pressure of two hundred pounds per square inch (200").
- b. Two (2") inch curb stop shall be ball type with compression inlet fitting with tee head shut off.
- c. Pipe shall be two (2") inches diameter, polyethylene.
- d. All flushing valves shall be installed within a twenty-four (24") inch round metal meter box.

## WATER LINE BORE

1. Minimum steel casing thickness shall be a quarter (1/4") inch. Casings shall be required under collectors and thoroughfares, highway crossings, and railroad crossings. Casings shall also be required where deemed necessary by the City Engineer. The construction bore pit shall be located at a minimum distance of four (4') feet behind the back of curb or edge of pavement where no curb is present.
2. The design engineer shall design the water line pipe casing for the following loading conditions and applicable combinations thereof:
  - a. AASHTO HS20 loading as applicable
  - b. Earth loading with the height of fill above the casing as shown on the plans
  - c. Loads applied during jacking, including axial load from jacking
  - d. All other applicable loading conditions, including loads applied during transportation and handling.

### 3. Materials

#### a. Steel Casing Pipe

Steel casing pipe shall be new (or used if approved by the City Engineer) and suitable for the purpose intended

and shall have a minimum yield strength of 35,000 psi. Casing shall meet ASTM A-36, ASTM

A-570, ASTM A-135, ASTM A-139, or approved equal. Pipe shall be coated with coal tar epoxy (15 mils min.) in accordance with AWWA C-210. Pipe joints shall be welded in accordance with AWWA C-206.

After pipe is welded, coating shall be repaired.

#### b. Casing Spacers

Use stainless steel casing spacers for any type of carrier pipe. Insulators shall be high density polyethylene. Insulators shall fit snug over the carrier pipe and position the carrier pipe approximately in the center of the casing pipe to provide adequate clearance between the carrier pipe bell and the casing pipe. Insulators shall be manufactured by "Recon" and be Racci Type or approved equal.

### 4. Installation

#### a. Excavation and Backfill of Access Pits

1) Do not allow excavation over the limits of the bore or tunnel as specified. Shore the trench walls as necessary to protect workmen, the public, structures, roadways, and other improvements.

2) Excavations within the right-of-way and not under surfacing shall be backfilled and consolidated by mechanical methods as specified in these standards for compaction of trenches under roadways.

Surplus material shall be removed from the right-of-way and the excavation finished to original grades. Backfill pits immediately after the installation of the carrier pipe is completed. If carrier pipe is not installed immediately after casing pipe installation, the City may require the access pits be temporarily backfilled until installation of carrier pipe.

3) Where seeding or sodding is disturbed by excavation or backfilling operations, such areas shall be restored to the existing or better conditions.

### ***Item 301 - WASTEWATER SYSTEM IMPROVEMENTS***

#### **GENERAL**

This section pertains to general design requirements for waste water collection system construction in the City of Taylor. All sewer lines shall be sized and as determined by the City Engineer. In the absence of or in conflict with a specific standard contained in this Chapter, all collection, treatment, and disposal systems shall be designed in accordance with the most current criteria adopted by the Texas Administrative Code, Chapter 217, "Design Criteria for Domestic Wastewater Systems".

#### **WASTEWATER MAIN SIZES AND DESIGN**

1. Standard wastewater main sizes are eight (8") inches, ten (10') inches, twelve (12") inches, fifteen (15") inches, and eighteen (18") inches in diameter. Other sizes may be approved by the City Engineer.

2. Wastewater lines shall be constructed at a minimum depth of four (4') feet and be located within the R.O.W. or an approved utility easement. A wastewater line is required to be constructed on both sides of a State

3. Easements for wastewater line construction shall meet the following requirements:

- a. The easement width shall be a minimum of twenty (20'). Greater easement width may be required for deep lines.
- b. If the wastewater line is less than twelve (12') feet deep, the outside diameter of the wastewater line shall be located a minimum distance of six (6') feet from the edge of the easement, and if other utilities are located in the same easement, the outside diameter of the wastewater line shall be located a minimum distance of three (3') feet from the outside diameter of the other utilities.
- c. If the wastewater line is greater than twelve (12') feet deep, the outside diameter of the wastewater line shall be located a minimum distance of nine (9') feet from the edge of the easement, and if other utilities are located in the same easement, the outside diameter of the wastewater line shall be located a minimum distance of six (6') feet from the outside diameter of the other utilities.
- d. Proper separation of utilities must be maintained per TCEQ regulations.

4. All wastewater mains shall be designed with consideration for serving the full drainage area subject to collection by the wastewater in question; the drainage area may be modified with the concurrence of the City Engineer because of the projected rate of development or the financial feasibility of the proposed extension.

5. Wastewater mains should be designed with straight alignment whenever possible. When horizontal curvatures must be used, radial pipe must be used in accordance with the pipe manufacturer's recommendations. No joint deflection is allowed without the approval of the City Engineer and an appropriate TCEQ variance.

6. All wastewater mains shall be designed with hydraulic slopes sufficient to give mean velocities, when flowing full or half full, of no less than two (2') feet per second.

#### WASTEWATER LINE MATERIALS

All wastewater lines and fittings shall be new materials and comply with the following:

1. All wastewater pipes shall be Polyvinyl Chloride (PVC) pipe type SDR-26 for wastewater lines where wastewater lines exceed. For depths greater than twenty-four (24') feet material must approved by City Engineer.
2. All PVC wastewater pipe shall be green in color. Developer to provide a manufacturers statement for pipe color other than green.
3. PVC sewer pipe and fittings shall conform to the current ASTM Designation D 3034 for up to eighteen 18" inches and ASTM Designation F 679 for greater than fifteen (15") inches.

#### WASTEWATER LINE INSTALLATION

##### 1. General

- a. All installations shall conform to ASTM Designation D2321, and the as amended by these standards.
- b. Wastewater lines shall not be installed within nine (9') feet horizontally of any water main or fire hydrant.

Where this is not possible, separation shall be in accordance with TCEQ standards.

c. Construction shall begin at the downstream end of project and continue upstream with the bell facing upstream. No upstream piping shall be installed before downstream piping unless approved by the City Engineer.

## 2. Excavation and Backfill

a. The amount of open trench excavation shall not exceed two hundred (200') feet from the end of the pipe laying operations, and no more than three hundred (300') feet of total open trench will be allowed. At the end of each workday, all trench excavation shall be backfilled to the end of the pipe laying operation

b. Density tests shall be taken every three hundred (300') feet for every lift. A maximum thickness of twelve (12") inches per loose lift is required for all trench backfill. A geotechnical report shall be submitted for all trenches. The density reports shall be submitted daily to the City Inspector. The City has the right to require additional tests if they are deemed necessary.

c. A City inspector will be on site at all times when testing is being performed. The City Inspector shall be present during the placement of trench backfill lifts.

d. All density reports shall be completed, delivered to the City's Engineer and Inspector, and approved before paving is allowed to begin.

## MANHOLES

1. Manholes shall be located at all intersections of wastewater lines and at intermediate spacing along the line.

Generally the maximum spacing should not exceed five hundred (500') feet. Manholes should be located at all changes in grade and at the ends of all wastewater lines that will be extended.

2. A manhole is required at the junction of wastewater lines with different inside pipe diameters.

3. A drop of at least one tenth of a foot (0.1') is required through the manhole.

4. A drop manhole is required when the flow line in is two (2') feet or greater than the flow line out.

5. Minimum manhole inside diameter is four (4') feet.

6. Drop-connection manholes shall have a minimum inside diameter of four (4') feet, with an exterior drop.

7. Minimum pre-cast wall thickness is five (5") inches.

8. All manholes shall be concrete.

9. NOTE: If depth of cover is greater than 18 feet, Manhole size is subject to city Engineer approval.

a. Cast-in-place – only when approved

1) The manhole foundation shall be poured on undisturbed soil or approved subgrade and shall have a minimum thickness of eight (8") inches.

- 2) The inlet and outlet pipes shall be poured into the foundation of the manhole. When straight through flow occurs, the pipe shall be laid continuously through the manhole.
- 3) The invert shall be shaped and smoothed so that no projections will exist and the invert shall be self cleaning.
- 4) When a cast-in-place manhole is used to connect to an existing wastewater line the manhole should be poured, tested and approved before the top of the existing line is cut out.
- 5) Concrete work shall conform to all requirements of ACI 301, Standard Specification for Structural Concrete, published by the American Concrete Institute, except as modified herein.
- 6) Detailing of concrete reinforcement and accessories shall be in accordance with ACI Publication 315.
- 7) Portland cement shall be Type II, low-alkali and conform to ASTM Designation C-150.
- 8) The manhole shall not be backfilled within twelve (12) hours after the concrete placement. Backfill shall be compacted and reports submitted to the City.
- 9) The face of curb shall be stamped with a three (3") inch "MH" to mark the location of all manholes.

The location of the stamp shall be a line that intersects the center of the manhole cover and the curb perpendicular to the centerline of the street. For manholes located in intersections, the curb shall be stamped at the closest location to the manhole. If no curb exist a similar mark should be placed in the pavement near the edge of the roadway.

#### c. Precast Manhole

- 1) Precast manholes shall be constructed in accordance to ASTM Designation C-478.
- 2) Manhole base shall have a spread footing and be placed on a minimum of twelve (12) inches of crushed rock.

### MANHOLE FRAME AND COVER

#### 1. Cover

##### a. Materials

All manhole covers shall conform to the Standard Specifications for Domestic Grey Iron Castings, ASTM A-48, Class 30 B.

##### b. Installation

- 1) All manhole covers shall be thirty (32") inches in diameter.
- 2) All manhole covers shall have two (2) integrally cast pick bars.

##### c. Manufacturers (Traffic rated where necessary)

- 1) East Jordan Iron Works

## 2) Bass & Hayes

### 2. Frames

#### a. Materials

All manhole frames shall conform to the Standard Specifications for Grey Iron Castings, ASTM A-48, Class 30 B.

#### b. Installation

All manhole frames shall provide a thirty (30") inch by one quarter (1/4") inch opening to assure proper fit of the manhole cover.

#### c. Manufacturers

##### 1) East Jordan Iron Works

##### 2) Bass & Hayes

d. Manholes located within the floodplain are to be sealed with an approved bolt-down cover and frame.

### 3. Extension Ring

#### a. Materials

All precast reinforced concrete extension rings shall conform to ASTM C-478.

#### b. Installation

1) The number of extension ring sections shall be kept to a minimum (i.e. use 1-12 inch extension ring instead of 2-6 inch extension rings).

2) A one (1") inch by three and a half (3 1/2") inch bitumastic gasket shall be used to seal the extension ring at both joints.

### 6. Manhole Inserts - Rain Pan Shall be required on all Manholes.

#### a. Materials

Rain pans shall be High Strength Stainless Steel to fit each manhole

#### b. Manufacturers

Southwestern Packing and Seals.

## WASTEWATER SERVICE

1. No wastewater service line (lateral) shall be less than six (6") inches in nominal diameter.

2. Wastewater laterals shall be a minimum of ten (10') feet downstream of the water service. Services will be identified in the field by a three (3") inch "S" cut into the curb, on the As-Built Plans and with a stake in the



field for location purposes.

3. Wastewater service laterals shall have a minimum of four (4') feet of cover at the property line.

4. Materials

a. All lateral wastewater service lines shall be gasketed PVC pipe type SDR-26.

b. All PVC wastewater pipe used for lateral services shall meet ASTM 3034.

6. Installation

All service laterals shall be installed in accordance with the wastewater embedment and backfill standards of the City of Taylor.

MAIN LINE CLEANOUTS

Cleanouts may be installed on lines that are permanent dead ends. The line may not exceed four hundred fifty (450') feet. Any line exceeding that length must end with a manhole.

WASTEWATER LINE BORING

SEE WATER LINE

1. Installation

a. Tolerances

1) All bores shall be installed at a grade no less than the minimum indicated by TAC30, Chapter 317 for the desired pipe size.

2) All bores shall maintain grade enough to ensure desired clearance distances between existing utilities and bore.

b. Excavation and Backfill of Access Pits

SEE WATER SECTION

## Williamson County- GENERAL NOTES AND TECHNICAL SPECIFICATIONS

### *Definition of Terms*

Asphalt Season: April 1 through September 30.

County: Williamson County acting through the Road and Bridge Division.

Contractor: Successful bidder of the IFB.

Engineer: Williamson County Director of Road and Bridge, or designee.

Inspector: Engineer, or designee, supplied full time or part time to the contractor's crew for the oversight of the work.

Specifications: Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014.

TxDOT: Texas Department of Transportation

Working Day: Monday through Friday (excluding County approved holidays), if weather permits the performance of the contract (as determined by the Inspector) for a continuous period of at least 8 hrs. (excluding lunch) between 7:00 A.M. and 6:00 P.M. Time begins with crews on site with equipment and ready for operation.

### *ITEM 247 – FLEXIBLE BASE*

Unless otherwise specified or approved, use new materials for the work. Secure the Engineer's approval of the proposed source of materials to be used before their delivery. Materials can be approved at a supply source or staging area but may be re-inspected.

Flexible Base shall be Type A, Grade 4 and shall conform to the requirements of Table 1:

Table 1: Material Requirements

| <b>Property</b>                                        | <b>Grade 4</b> |
|--------------------------------------------------------|----------------|
| Master gradation sieve size<br>(cumulative % retained) |                |
| 2 1/2 “                                                | -              |
| 1 3/4 “                                                | 0              |
| 7/8 “                                                  | 10-35          |
| 3/8”                                                   | 30-65          |
| # 4                                                    | 45-75          |
| # 40                                                   | 70-90          |

|                                                        |       |
|--------------------------------------------------------|-------|
| #200                                                   | 87-95 |
| Liquid Limit, % Max                                    | 35    |
| Plastic Index, Max                                     | 10    |
| Wet ball mill, % Max                                   | 40    |
| Wet ball mill, % Max<br>Increase passing the #40 sieve | 20    |
| Min. Compressive Strength, psi                         |       |
| Lateral pressure 0 psi                                 | 35    |
| Lateral pressure 15 psi                                | 175   |

### ***ITEM 260 – LIME TREATMENT (ROAD MIXED)***

Subgrade stabilization is required when the Plasticity Index (PI) of the raw subgrade is greater than 20. Lime stabilization shall be used and shall be performed in accordance with TxDOT Item 260, unless otherwise approved.

If the addition of lime as described in Item 260 is not feasible, an alternate stabilizing design shall be proposed and submitted for approval. Increased base thickness does not effectively compensate for subgrade soil with high shrink/swell potential and will not be approved without additional stabilization.

If the soil has a sulfate content greater than 7,000 ppm, removal and replacement with select fill may be required.

Organic content of the natural subgrade shall be tested in accordance with Tex-148-E. If the organic content is 1% or greater, additional lime shall be added to compensate for the additional reaction. Target lime content shall be verified with Tex-121-E, Pt. III for soil modification.

Lime shall be a hydrated lime slurry delivered to the site, spread on the proof-rolled natural subgrade and mixed with a rotary mixer within 6 hours of spreading in accordance with TxDOT Item 260. A pH of 12.4 must be achieved for stabilization. Confirmation testing is required.

Alternative application and mixing processes may be approved.

### ***ITEM 300 – ASPHALTS, OILS, AND EMULSIONS***

Asphalt season starts April 1 and ends September 30.

No engine oil shall be used as a component of any asphalt or emulsion.

Non-Tracking Tack Coat Emulsion shall be used and considered subsidiary to the pertinent Items.

**ITEM 302 – AGGREGATES FOR SURFACE TREATMENTS**

Aggregate used in the mix shall be on the TxDOT Quality Monitoring Schedule. Aggregate shall be Type B Grade 4. Gradation tests shall be required. Use test method Tex-200-F, Part I, for testing.

Previously tested aggregates delivered to the project which are found to contain excessive quantities of dust (more than 0.5 percent passing the no. 40 sieve) during pre-coating, stockpiling or hauling operations, will be rejected, unless otherwise directed. Use test method Tex-200-F, Part I, for testing.

**ITEM 310, 316, 340**

Perform work during appropriate weather conditions, unless otherwise directed. If work is performed at the Contractor's option, during, or prior to, inclement weather conditions, and the work is damaged, the Contractor is responsible for all costs associated with replacing the work.

**ITEM 310 – PRIME COAT**

A Prime Coat shall be applied on the completed and approved base course and/or other approved areas. Prime coat shall be cured for a minimum of 24 hours before paving may take place.

Prime coat shall be MC30 or AEP, unless otherwise approved by the County Engineer. Materials shall be the requirements of TxDOT Item 310.

Where applicable, the flange face of the curb shall be tacked with asphalt product prior to construction of HMAC to prevent moisture infiltration at the curb and pavement surface interface.

**ITEM 316 – SURFACE TREATMENTS**

Do not apply asphalt within 1½ hours of sunset, or later, unless otherwise directed.

The type and rate of asphalt and aggregate shall be submitted to the County Engineer for approval and shall be indicated on the plans as a basis of estimate. The following are standard rates for asphalt emulsion and aggregate:

|                                           | Asphalt Emulsion<br>Standard Application Rate | Aggregate<br>Standard Spread Rate <sup>1</sup> |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|
| 1 <sup>st</sup> Course                    | 0.40 - 0.45 gal/sy                            | 110 - 130 lb/sy                                |
| 2 <sup>nd</sup> Course<br>(if applicable) | 0.42 - 0.48 gal/sy                            | 100 - 110 lb/sy                                |

Note 1: Aggregate rates depend on type of aggregate. Rates shown are for typical limestone aggregates. If another rock is desired it must be approved by the County Engineer.

Loss of aggregate may indicate a long delay between spraying binder and spreading cover aggregate; insufficient binder to cement the aggregate into place; improper binder for prevailing conditions; dust or film of moisture is present on the aggregates; high speed traffic prior to development of adhesion, or placement of too much aggregate.

Ensure the accuracy of the Distance Measuring Instrument (DMI) with the Engineer, prior to marking the Asphalt and Rock Land shots.

Surface all transitions, tapers, climbing lanes and intersections to the limits as directed.

Remove and dispose of, off the right of way, any existing traffic buttons before beginning surfacing operations. This will be considered subsidiary to the pertinent Items.

Prior to placement of any overlying HMAC, loose aggregate shall be vacuumed from the roadway surface. Vacuuming should not occur for a minimum of 24 hours after initial spreading.

### ***ITEM 340 - DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY)***

HMAC materials shall meet the requirements of TxDOT Item 340 unless otherwise approved by the County Engineer.

HMAC shall not be placed for a minimum of 24 hours after surface treatments have been applied.

Performance grade (PG) binders shall be used in HMA mixture. Recycled Asphalt Shingles (RAS) and Recycled Engine Oil Bottoms (REOBs) are not permitted. Recycled Asphalt Pavement (RAP) is not permitted in the surface course. If HMAC is proposed for a subsurface design, up to 20% RAP is permissible.

Minimum bituminous binder content shall be 5%.

Provide mixture Type D using PG binder 70-22. Engine oil is not allowed as a component of the binder.

Target laboratory molded density is 96.5% for Texas Gyratory Compactor (TGC). When using the Superpave Gyratory Compactor (SGC) to the design mixtures, submit the SGC mix design to the Engineer for approval.

All mixtures must meet the Hamburg requirement as stated in the table below.

| <b>High-Temperature Binder Grade</b> | <b>Test Method</b> | <b>Hamburg Wheel Test Requirements <sup>1</sup></b>        |
|--------------------------------------|--------------------|------------------------------------------------------------|
|                                      |                    | <b>Minimum # of Passes @ 0.5" Rut Depth, Tested @122°F</b> |
| PG 64 or lower                       | Tex-242-F          | 7,000                                                      |
| PG 70                                | Tex-242-F          | 15,000                                                     |
| PG 76 or higher                      | Tex-242-F          | 20,000                                                     |

1. The Engineer may accept Hamburg Wheel test results for production and placement if no more than 1 of the 5 most recent tests is below the specified number of passes and the failing test is no more than 2,000 passes below the specified number of passes.

Minimum VMA during production shall be equal to or greater than Design VMA for all mixtures types in accordance with Table 8 of Item 341.

The County Engineer may require samples for mixture design verification. Upon request, the Contractor shall provide two 5-gallon buckets of each aggregate stockpile to be used on the project and three gallons of each PG binder from the plant to be used on the project. Sufficient quantities of any other additives that will be used in the HMA mixture shall also be provided.

Prior to allowing production of the trial batch, the Engineer will use the materials provided by the Contractor to perform the following tests to verify the HMA mixture design.

1. Indirect Tensile Test in accordance with Tex-226-F
2. Hamburg Wheel Test in accordance with Tex-242-F
3. Overlay Test in accordance with Tex-248-F
4. Cantabro Test in accordance with Tex-245-F

In lieu of or in addition to evaluating the mixture design prior to allowing a trial batch to be produced, the Engineer may also evaluate the mixture produced during the trial batch for compliance with the tests listed above.

The County Engineer shall be notified of any adjustments or changes to an approved job mix formula. New mixes are subject to additional testing.

HMAC shall be placed in layers/lifts as identified in the construction drawings. Lifts shall be compacted thoroughly and uniformly to obtain the compaction and cross section identified in the construction drawings.

HMA mixtures that are discharged from the mixer at a temperature exceeding 350°F or a temperature more than 50°F below the target temperature shall not be accepted and shall not be placed on the project. If the Contractor proceeds to place unacceptable material, the Contractor shall remove the material at the Contractor's expense unless otherwise accepted by the County.

HMA mixture shall only be placed when the roadway surface temperature is at or above 60°F unless otherwise accepted by the County or temperatures are expected to rise above 60°F within 2 hours.

Under no circumstances shall the HMA material be dumped on or near the job site and then reloaded for hauling to the site for placement.

**All HMA construction joints shall be staggered for each proceeding lift. Ensure placement sequence to avoid excess distance of longitudinal joint lapback not to exceed one day's production rates.**

When there is visual evidence of segregation or segregation profile fails to meet specification, the segregated area shall be removed and replaced.

Irregularities shall be corrected. Irregularities include segregation, rutting, raveling, flushing, fat spots, mat slippage, irregular color, irregular texture, roller marks, tears, gouges, streaks, uncoated aggregated particles or broken aggregate particles. Surface irregularities will require the replacement of a full lane width using an asphalt paver.

Acceptance Plan is not applicable to this project; no bonus and/or penalty are allowed. Acceptance of work will follow the specification as outlined with the clarification below.

***GOVERNING SPECIFICATIONS (STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, AND SPECIAL SPECIFICATIONS)***

WHERE DISCREPANCIES OCCUR BETWEEN THE VARIOUS GOVERNING SPECIFICATIONS, THE SPECIAL PROVISIONS SHALL GOVERN OVER BOTH STANDARD SPECIFICATIONS AND SPECIAL SPECIFICATIONS.

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

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

WHEREVER, IN THE TXDOT STANDARD SPECIFICATIONS, REFERENCE IS MADE TO THE STATE OF TEXAS, THE DEPARTMENT AND ITS REPRESENTATIVES, SUCH REFERENCE SHALL BE TAKEN TO MEAN WILLIAMSON COUNTY AND ITS REPRESENTATIVES.

ITEM 247 FLEXIBLE BASE  
 ITEM 260 LIME TREATMENT (ROAD-MIXED)  
 ITEM 300 ASPHALTS, OILS, AND EMULSIONS  
 ITEM 302 AGGREGATES FOR SURFACE TREATMENTS (300)(301)  
 ITEM 310 PRIME COAT  
 ITEM 316 SURFACE TREATMENTS (210)(300)(302)  
 ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (300)(301)(320) (520)(585)

SPECIAL PROVISIONS: THE CONTENT OF THE SPECIAL PROVISIONS ARE INCLUDED ON THE FOLLOWING PAGES.

SPECIAL PROVISION TO ITEM 300 (300-001)  
 SPECIAL PROVISION TO ITEM 300 (300-005)  
 SPECIAL PROVISION TO ITEM 300 (300-007)

***SP 1 - Decomposed Granite Walkways***

**1.1 Description**

This standard specification item shall govern furnishing and placing granite gravel surfacing for walkways. The granite gravel surface shall be constructed in a single layer on an approved and properly prepared base course, conforming to typical sections and to the lines and grades indicated on the drawings or established by the engineer or designated representative.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text the inch-pound units are given preference followed by SI units shown within parentheses.

## 1.2 Submittals

The submittal requirements of this specification item may include:

- A. Sample of decomposed granite gravel surface material along with source identification and gradation and plasticity test results for approval, quality assurance and color;
- B. Sample of flexible road base material or approved equivalent along with source identification and gradation and plasticity test results for approval, quality assurance and color;
- C. Optimum moisture-density characteristics for decomposed granite gravel and road base sources;
- D. Proposed walkway construction sequence and equipment; and
- E. Field density test results for in-place compacted red granite gravel and red road base.

## 1.3 Materials

The surface and base layer materials shall be approved by the Engineer or designated representative prior to being hauled to the Project.

The decomposed granite gravel and road base materials or approved equivalent shall be meet or exceed to the following TxDOT standard test methods:

|                                                      |           |
|------------------------------------------------------|-----------|
| a) Preparation for Soil Constants and Sieve Analysis | Tex-101-E |
| b) Moisture Content                                  | Tex-103-E |
| c) Liquid Limit                                      | Tex-104-E |
| d) Plastic Limit                                     | Tex-105-E |
| e) Plasticity Index                                  | Tex-106-E |
| f) Sieve Analysis                                    | Tex-110-E |
| g) Laboratory Compaction                             | Tex-113-E |
| h) Field Density                                     | Tex-115-E |

The surface layer material shall be from a source approved by the Engineer or designated representative and shall be composed of a mixture of Texas decomposed unwashed granite aggregate and clay fines that meets the following requirements:

| Sieve Designation |        | % Passing |
|-------------------|--------|-----------|
| US                | SI     |           |
| 5/8"              | 19 mm  | 100       |
| #40               | 425 µm | 40 to 45  |
| # 200             | 75 µm  | 15 to 25  |
| Plasticity Index  |        | 12 to 18  |

## 1.4 Construction

### A. General

Prior to commencement of this work, all required erosion controls and tree protection measures



indicated on the Drawings shall be in place. All existing utilities shall be located and protected as specified in the Standard Contract Documents.

Areas within the construction limits shall be cleared of all obstructions, abandoned structures, and other items as defined above. All vegetation, except trees or shrubs indicated for preservation, shall also be removed. Trees and shrubs, which are scheduled for preservation, shall be carefully trimmed as directed by the engineer or designated representative and shall be protected from scarring, barking or other injuries during construction operations. All exposed cuts over 2 inches (50 millimeters) in diameter, exposed ends of pruned limbs or scarred bark shall be treated with an approved asphalt material within 24 hours of the pruning or injury.

Construction equipment shall not be operated nor construction materials stockpiled under the canopies of trees, unless otherwise indicated on the Drawings and/or specified in the Contract Documents. Excavation or embankment materials shall not be placed within the drip line of trees until tree wells are constructed.

#### B. Subgrade Preparation

The subgrade shall be excavated and shaped in conformity with the typical sections shown on the drawings and to the lines and grades as established by the Engineer or designated representative. The subgrade shall be tested by "proof rolling", except that a 10-ton roller will be used prior to placement of the road base material. Any unstable or spongy subgrade areas identified by proof rolling shall be corrected either by additional re-working, drying and compaction, or by removal and replacement of unsuitable materials.

If required the subgrade shall be wetted, reshaped and rolled to the extent directed in order to place the subgrade in an acceptable condition to receive the red road base material. The surface of the subgrade shall be finished true to line and grade as established by the Engineer or designated representative in conformity with the typical section shown on the drawings. Material excavated in the preparation of the subgrade shall be utilized in the construction of adjacent shoulders and slopes or otherwise disposed of as directed by the Engineer or designated representative. Additional material required for completion of the shoulders and slopes shall be secured from sources approved by the owner.

#### C. Flexible Base

Refer Williamson County Design Guidelines for road base material placement and construction.

#### D. Decomposed Crushed Granite Surface

Construction methods for the succeeding red granite gravel layer shall be the same as prescribed for the red road base layer with the exception of the compaction requirements. The surface layer shall be sprinkled as required to bring the material to optimum moisture content, then compacted to the extent necessary to provide not less than 92% of the optimum density. In no case shall the material be worked at more than 2 percent above or below optimum moisture.

When the thickness of a particular lift of the flexible base is in question, the Contractor shall check the surface of for conformity to the lines and grades by setting "blue tops" at intervals not exceeding 50 feet (15 meters) on the centerline, the edge of the walkway, and at other points that may be indicated on the Drawings

If the base material and/or surface layer due to any reason or cause, loses the required stability, density or finish prior to acceptance of the project, the base layer and/or surface layer shall be recompacted and refinished at the Contractor's expense.

## ***SP 2 – Back Flow Prevention Device***

### **1.1 Description**

This item shall govern the backflow prevention device furnished and installed as indicated on the Drawings.

### **1.2 Submittals**

Cut sheet of proposed device to be installed to include any fittings, enclosures and backflow prevention device.

### **1.3 Materials**

Back flow prevention device shall be a reduced pressure zone assembly WATTS Series 009 or approved equal.

### **1.4 Construction**

Assemblies shall be installed per manufacturer recommendations unless otherwise shown on the Drawings.

### **1.5 Measurement**

Backflow prevention device will be measured as each and shall include device, enclosure and necessary plumbing.

### **1.6 Payment**

Back flow prevention devices will be paid for at the unit bid price, including box or vault, adjusting to grade, anchoring in place, adjusting the control device to the required conditions, providing other appurtenances necessary for proper operation, and placing in operation.

## ***SP 3 – Yard Hydrant Assembly***

### **1.1 Description**

This item shall govern the Freeze Proof Yard Hydrant Assembly device furnished and installed as indicated on the Drawings.

### **1.2 Submittals**

The submittal requirements of this specification item may include:

- A. Shop drawing of steel fabrication
- B. Product specification sheet of yard hydrant
- C. Material submittal of limestone screenings
- D. Material submittal of gravel fill

### **1.3 Materials**

- A. Hydrant shall be freeze proof Woodford Model Y30 or approved equal.
- B. Limestone screenings to be Texas Crushed Stone #132 or approved equal.
- C. Gravel fill to be Texas Crushed Stone #265 or approved equal.

### **1.4 Construction**

Assemblies shall be installed per manufacturer recommendations unless otherwise shown on the

Drawings.

**1.5 Measurement**

Yard hydrant will be measured as each and shall include hydrant, valve body, steel tubing, anchors, aggregates and necessary plumbing as shown on Drawings.

**1.6 Payment**

Yard hydrants will be paid for at the unit bid price, including adjusting to grade, anchoring in place, adjusting the control device to the required conditions, providing other appurtenances necessary for proper operation, and placing in operation.

***SP 4 – Dump Station Lid*****1.1 Description**

This item shall govern the dump station lid device furnished and installed as indicated on the Drawings.

**1.2 Submittals**

Product specification sheet of dump station lid.

**1.3 Materials**

Dump station lid shall be foot operated, locking sanitary sewer hatch OPW 269 or approved equal.

**1.4 Construction**

Dump station lid shall be installed per manufacturer recommendations unless otherwise shown on the Drawings.

**1.5 Measurement**

Dump station lid will be measured as each.

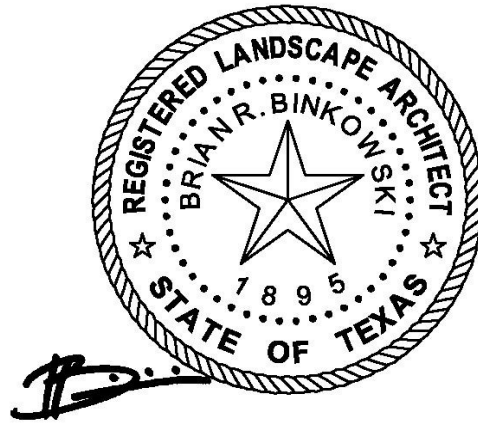
**1.6 Payment**

Dump station lid will be paid for at the unit bid price, including furnishing and installing lid, providing other appurtenances necessary for proper operation, and placing in operation.

# Expo Center RV Park

## Williamson County

### Landscape Architectural Specifications



12-04-2017



9500 Amberglen Blvd., Bldg. F, Ste. 125  
Austin, Texas 78729  
P: (512) 777-4600

02932-N.... Native Seeding for Erosion Control

**Item No. 02932-N**

**NATIVE SEEDING FOR EROSION CONTROL**

**1.1 Description**

This item shall govern the preparation of a seed bed to the lines and grades indicated on the Drawings, sowing of seeds, fertilizing, mulching with straw, cellulose fiber wood chips, recycled paper mulch and other management practices along and across such areas as indicated in the Drawings or as directed by the Landscape Architect or designated representative.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text, inch-pound units are given preference with SI units shown within parentheses.

**1.2 Submittals**

The submittal requirements for this specification item shall include:

- A. Identification of the type, source, mixture, PLS and rate of application of the seeding.
- B. type of mulch.
- C. type of tacking agent.
- D. type and rate of application of fertilizer.

**1.3. Materials**

- A. Seeds. All seed must meet the requirements of the Texas Seed Law including the labeling requirements for showing pure live seed (PLS), name and type of seed. The seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of delivery to the project. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Landscape Architect or designated representative.

The amount of seed planted per acre (hectare) shall be of the type specified in sections 604S.6.

- B. Water. Water shall be clean and free of industrial wastes and other substances harmful to the growth of grass or the area irrigated.
- C. Straw Mulch or Hay Mulch. Straw Mulch shall be oat, wheat or rice straw. Hay mulch shall be prairie grass, Bermuda grass, or other hay approved by the Landscape Architect or designated representative. The straw or hay shall be free of Johnson grass or other noxious weeds and foreign materials. It shall be kept in a dry condition and shall not be molded or rotted.

Item No. 02932-N –Native Seeding for Erosion Control

1 of 4

- D. Tacking Agents. The tacking agent shall be a biodegradable tacking agent, approved by the Landscape Architect or designated representative.
- E. Cellulose Fiber Mulch (Natural Wood). Cellulose Fiber Mulch shall be natural cellulose fiber mulch produced from grinding clean whole wood chips. The mulch shall be designed for use in conventional mechanical planting, hydraulic planting of seed or hydraulic mulching of grass seed, either alone or with fertilizers and other additives. The mulch shall be such, that when applied, the material shall form a strong, moisture-retaining mat without the need of an asphalt binder.
- F. Recycled Paper Mulch. Recycled paper mulch shall be specifically manufactured from post-consumer paper and shall contain a minimum of 85% recycled paper content by weight, shall contain no more than 15% moisture and 1.6% ash, and shall contain no growth inhibiting material or weed seeds. The recycled paper mulch shall be mixed with grass seed and fertilizer for hydro-seeding/mulching, erosion control, and a binder over straw mulch. The mulch, when applied, shall form a strong, moisture-retaining mat of a green color without the need of an asphalt binder.

#### **1.4 Construction Methods**

- A. Preparing Seed Bed. After the designated areas have been rough graded to the lines, grades and typical sections indicated in the Drawings or as provided for in other items of this contract and for any other soil area disturbed by the construction, a suitable seedbed shall be prepared. Contractor to scarify the ground surface to a minimum 4" depth remove all sticks, trash, rocks and other debris and dispose off site prior to seeding/sodding. When solid rock is exposed or encountered within the first 2" depth of existing soil, place a minimum of 4" imported topsoil or approved salvaged topsoil, cultivated and rolled sufficiently to reduce the soil to a state of good tilth, when the soil particles on the surface are small enough and lie closely enough together to prevent the seed from being covered too deeply for optimum germination. Areas that become crusted shall be reworked to an acceptable condition before sodding. The optimum depth for seeding shall be 1/4 inch (6 millimeters). Water shall be gently applied as required to prepare the seedbed prior to the planting operation either by broadcast seeding or hydraulic planting. Seeding shall be performed in accordance with the requirements hereinafter described.
- B. Watering. All watering shall comply with City Ordinances. Broadcast seeded areas shall immediately be watered with a minimum of 5 gallons of water per square yard (22.5 liters of water per square meter) or as needed and in the manner and quantity as directed by the Landscape Architect or designated representative. Hydraulic seeded areas and native grass seeded areas shall be watered commencing after the tackifier has dried with a minimum of 5 gallons of water per square yard (22.5 liters of water per square meter) or as needed to keep the seedbed in a wet condition favorable for the growth of grass.

Watering applications shall constantly maintain the seedbed in a wet condition favorable for the growth of grass. Watering shall continue until the grass is uniformly 1 1/2 inches (40 mm) in height and accepted by the Landscape Architect or designated representative. Watering can be postponed immediately after a 1/2

inch (12.5 mm) or greater rainfall on the site but shall be resumed before the soil dries out.

### 1.5 Non-Native Seeding [NOT USED]

### 1.6 Native Grass Seeding

The seedbed shall be prepared as specified above.

Seed supplier: Native American Seed, Junction, Texas  
800-728-4043 [www.seedsource.com](http://www.seedsource.com)  
(no approved equals accepted)

The seed mixture and the rate of application shall be as follows:

- A. Method A - Broadcast Seeding. The seed or seed mixture in the quantity specified shall be uniformly distributed by mechanical methods over the prepared seed bed areas indicated on the Drawings or where directed by the Landscape Architect or designated representative. Seed and fertilizer may be distributed at the same time, provided that each component is uniformly applied at the specified rate. After planting, the planted area shall be rolled with a corrugated roller of the "Cultipacker" type. All rolling of sloped areas shall be on the contour.

Seed Mixture and Rate of Application for Broadcast Seeding: **Midway Mix** –  
Rangeland Seeding Rate 10 pounds per 1 acre.

Fertilizer shall be a pelleted or granular slow release with an analysis of 15-15-15 to be applied once at planting and once during the period of establishment at a rate of 1 pounds per 1000 square feet.

Mulching shall immediately follow seed and fertilizer application.

- B. Method B - Hydraulic Seeding. The seedbed shall be prepared as specified above and hydraulic planting equipment, which is capable of placing all materials in a single operation, shall be used.

Seed Mixture and Rate of Application for Hydraulic Seeding: **Midway Mix** –  
Rangeland Seeding Rate 10 pounds per 1 acre.

Fertilizer shall be water soluble fertilizer with an analysis of 15-15-15 at a rate of 1.5 pounds per 1000 square feet.

### 1.7. Mulch

Item No. 02932-N –Native Seeding for Erosion Control

3 of 4

A. Straw Mulch

Straw mulch shall be spread uniformly over the area indicated or as designated by the Engineer or designated representative at the rate of 2 to 2 1/2 tons of straw per acre (4.5 to 5.6 megagrams of straw per hectare). The actual rate of application will be designated by the Landscape Architect or designated representative. Straw may be hand or machine placed and adequately secured.

B. Fiber Mulch

Cellulose and wood fiber mulch shall be spread uniformly over the area indicated or as designated by the Landscape Architect or designated representative at the rate of 45 to 80 lbs. per 1000 square feet (22 to 39 kilograms per 100 square meters), with tackifier at a rate of 1.4 pounds per 1000 square feet.

C. Recycled Paper Mulch

Recycled paper mulch shall be spread over the area indicated on the Drawings or as designated by the Landscape Architect or designated representative at a rate that will provide 100% coverage.

D. Shredded Brush Mulch

Small brush or tree limbs except Juniper, which have been shredded, may be used for mulching Native Grass seeding.

**END OF SECTION 02932-N**



# Expo Center RV Park

## Williamson County

### Electrical Specifications



*B.J. Hendrix*

12/04/17

MEP/ENERGY CONSULTANTS



COMMISSIONING • FIELD INVESTIGATIONS

115 E. Main Street  
Round Rock, Texas 78729  
P: (512) 218-0060

|               |                                           |
|---------------|-------------------------------------------|
| 26 05 00..... | General Provisions                        |
| 26 05 10..... | Schedule of Values                        |
| 26 05 19..... | Wire & Cable                              |
| 26 05 26..... | Grounding & Bonding                       |
| 26 05 33..... | Raceways                                  |
| 26 05 34..... | Outlet Boxes, Pull Boxes & Junction Boxes |
| 26 05 80..... | Empty Raceway Rough-In                    |
| 26 24 16..... | Branch Circuit Panelboards                |
| 26 28 25..... | Contactors                                |
| 26 43 00..... | Surge Protective Devices                  |

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 00 - GENERAL****PART 1 - GENERAL****1.01 SCOPE OF WORK**

Unless otherwise specified, provide all labor, equipment, supplies, materials, superintendence and testing necessary for the installation of complete electrical systems as required by these specifications and as shown on the Drawings, subject to the terms and conditions of the contract. Complete such details of electrical work not mentioned or shown which are necessary for the successful operation of all electrical systems described on the Drawings. Include empty conduits as required for all special systems and power for condensate pumps and HVAC control panels as required by the Mechanical Contractor. Field coordinate exact locations.

- A. Submit a bid on the basis of a complete installation, including all labor, material, cartage, insurance, permits, associated fees and taxes.
- B. Include temporary electrical power and lighting that will be required for the interior of the buildings. Provide lighting to satisfy OSHA requirements and the NEC.
- C. All Agreement Forms, General Conditions, Supplementary Conditions, and Division 1 of the specifications shall apply to the work specified in Division 26-28.
- D. Additional Site Visit Costs: The Contractor shall be charged with any cost resulting from uncompleted items that require additional site trips by the Architect/Engineer.
- E. No attempt has been made to show complete design details of building construction on the Electrical plans. Refer to Architectural, Structural and Mechanical plans for additional details which will affect electrical work. No extra cost will be allowed for offsets in conduit and wiring to avoid other work or when minor changes are necessary to facilitate installation or maintenance.
- F. Electrical Contractor is to provide all parts and labor to make final connections to all equipment shown in contract documents. Power may be shown in general location, it is expected that Electrical Contractor coordinate final locations for rough-in and connection requirements with exact equipment being installed. These items include but not limited to book security, exhaust fans, kilns, hand dryers, sensor operating plumbing devices, overhead doors, powered curtain, fire alarm door hold opens, etc.
- G. **NO TOXIC NOR HAZARDOUS MATERIALS, INCLUDING BUT NOT LIMITED TO PRODUCTS OR MATERIALS CONTAINING ASBESTOS, PCB AND LEAD SHALL BE PROVIDED OR INSTALLED.**
- H. AN EXTRA COPY OF ALL FIELD REPORTS SHALL BE KEPT IN A SEPARATE NOTEBOOK. CONTRACTOR TO SET UP IN THE CONSTRUCTION MANAGER'S TRAILER. THESE REPORTS SHALL BE USED FOR CONTRACTOR TO CHECK THAT EACH INDIVIDUAL ITEM NOTED HAS BEEN COMPLETED. ALSO KEEP LOG OF WHERE EXTRA RECEPTACLES AND OUTLET BOXES CALLED OUT IN 26 27 26, 3.01 AND 26 05 80, 2.01. ARE INSTALLED.
- I. **Electrical Contractor shall use Fire Alarm Contractor's Shop Drawings and Rough-In details on drawings for rough-in of all fire alarm devices. Any devices not roughed-in according to Fire Alarm Shop Drawings and drawing details shall be relocated at no cost to Owner.**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- J. Sensor Operated Plumbing Devices: Plumbing Contractor to provide transformers from manufacture. Electrical Contractor to provide all other electrical materials and labor to provide complete and workable device. This includes but is not limited to receptacles for plug in transformers, line voltage wire/conduit for direct connect low voltage transformers, all low voltage plenum rated 16 gauge wire.
- K. **Cad Drawings:**  
**Architectural Background Files – Architectural Files are background files, MEP drawings are not background files.** To insure the most current Architectural files are used for shop drawings backgrounds, they must be obtained from the architect and cannot be given from the engineer. Reference Architect for cost of Architectural Files.
- MEP Drawings** – These drawings cannot be used for shop drawings, as they are diagrammatic in nature only. Actual shop drawings prepared by sub-contractors must be used for coordination between all trades. If MEP floorplan files are requested they may be obtained with a signed confidentiality release form, only as outlined below. These files may be used in conjunction with this project only. There are no guarantees of compatibility or accuracy; all technical support will be billed hourly at current Engineer's Rates. Engineer does not charge for actual file, but does charge for time required to prepare the files in format as requested by the Contractor. Fees will be based on Engineer's current hourly rates. Deposit of \$500 must be paid prior to beginning file preparation and balance must be paid prior to release of any files. Total fee based on actual time required by Contractor's request. See submittal and shop drawing section for additional information.
- MEP CAD Files that will be released.**
- If no Architectural RCP is available for light locations. Lighting Floorplans will be released.
  - Mechanical Floorplan will be released to Mechanical Contractor for aid in production of his own shop drawings. HCE mechanical drawings may not be submitted as shop drawings.
  - Fire Alarm/Fire Sprinkler/Intercom etc... Contractors must use Architectural Revit Models and CAD files for backgrounds and Architectural RCP's (when available or lighting floorplan) and **Mechanical Contractor Shop Drawings** for coordination purposes. This must be obtained from Architect. Engineer may not release architectural drawings.
- L. The Contractor binds himself, his partners, successors, assigns and legal representatives to the Owner hereto in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Architect/Owner, nor shall the Contractor assign any monies due or to become due to him hereunder, without the previous written consent of the Owner/Architect.
- M. The Contractor shall supervise and direct the Work using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, safety, sequences and procedures and for coordinating all portions of the Work under his Contract.
- N. The Contractor shall provide, without extra charge, all incidental items required as a part of the Work, even though not particularly specified or indicated, and if he has good reason for objecting to the use of a material, appliance, or type of construction shown or specified, he shall register his objections with the Architect/Engineer, in writing; otherwise, he shall proceed with the work under the stipulation that a satisfactory job is required.
- O. Provide a completed Schedule of Values, see Specification Section 26 05 10. Preliminary schedule of values shall be submitted to Architect/Engineer for review.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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## 1.02 SITE INSPECTION

- A. Prior to Bidding, the Contractor shall visit and examine the site verifying all existing items and familiarize himself with existing work conditions and understand the conditions which affect performance of the work of this Division before submitting bids for this work. The submission of bids shall be deemed as evidence of such visits and examinations.
- B. All bids shall take the existing conditions into consideration and the lack of specific information on the drawings shall not relieve the Contractor of any responsibility. No subsequent allowance for time or money will be allowed for work or change related to failure to examine site conditions.

## 1.03 RELATED WORK SPECIFIED ELSEWHERE

- A. All work covered by this section of these specifications shall be accomplished in accordance with the respective drawings, information or instructions to bidders, and general provisions of these specifications. Any supplementary conditions, special conditions, addenda, or directives which may be issued by the Owner's representative herewith or otherwise shall be complied with in every respect.
- B. Provide electrical connections and service to items described in all other sections of these specifications.
- C. The Electrical Contractor shall provide all wiring and connections required to fire/smoke dampers. Coordinate exact locations of dampers with Mechanical Contractor and relay requirements with Fire Alarm Contractor.
- D. The Electrical Contractor shall provide all wiring and connections required to backdraft dampers at exhaust fans. Coordinate exact locations of dampers with Mechanical Contractor.
- E. Electrical Contractor to provide conduit and junction boxes for all sensors and exterior conduit for controls to mechanical equipment. Conduit for space sensor to extend from junction box to above accessible ceiling. Conduit for exterior equipment to extend from equipment through wall or roof to above an accessible ceiling. Any control wiring in exposed ceiling areas to be in conduit by Controls Contractor for protection. Controls Contractor to coordinate on all conduit requirements. Coordinate locations with Electrical Contractor.

## 1.04 WORK NOT INCLUDED

- A. Certain labor, materials, or equipment may be provided under other sections of these specifications, by utility companies, or by the Owner. When such is the case, the extent, source and description of these items will be as indicated on the Drawings or described in the specifications, but the Contractor is responsible for verifying with all parties involved as to the extent of his requirements of work.
- B. Unless otherwise indicated, motors shall be furnished by others, but connected by the Electrical Contractor as indicated on the Drawings.
- C. Unless otherwise specified, Mechanical equipment control low voltage wiring (less than 50 VAC) shall be provided and installed by the Mechanical Contractor.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

## 1.05 SPECIFICATION TERMINOLOGY (Definitions)

- A. "Provide": Includes all material, installation, labor subcontracts, appurtenances and mark-up required for a complete operable system as shown and specified, set in place, connected and ready to use.
- B. "Furnish": Purchase and deliver to job site, material as shown and specified.
- C. "Install": Includes all installation, labor subcontracts, appurtenances and mark-up required for complete installation of equipment furnished by others.
- D. **"Record Drawings": Drawings that reflect the electrical systems as actually constructed by the Contractor including conduit routing.**
- E. "Accessible" means arranged so that an appropriately dressed maintenance man may approach the area in question with tools and products necessary for the work intended, and may then position himself to properly perform the task to be accomplished, without disassembly or damage to the surrounding installation. All clearances per NEC.
- F. Wherever the term "shown on drawings" is used in the specifications, it shall mean "noted", "indicated", "scheduled", "detailed", or any other diagrammatic or written reference made on the drawings.
- G. "Conduit" includes, in addition to conduit, all fittings, hangers and other accessories relative to such conduit system.
- H. "Concealed" means hidden from sight in chases, furred spaces, shafts, hung ceilings, imbedded in construction, crawl spaces, etc.

## 1.06 DIAGRAMMATIC DRAWINGS:

- A. The drawings are in general diagrammatic, and the location of outlets, switches, motors, etc., on the drawings does not necessarily mean that such units shall be placed at that exact spot, as scaled on the drawings, but shall be located to function best. Use the drawings, and these specifications for guidance and secure the Engineer's approval of all changes in location. Coordinate all dimensions for floor boxes with Architect. Contractor shall not scale from drawings.
- B. Verify all measurements at the site. No extra compensation will be allowed because of differences between locations shown on the drawings and measurements at the building.
- C. The Contractor is to draw electrical rooms and service to scale **(1/4" minimum)** with actual equipment to be used and submit to the Engineer prior to installation. The Contractor must insure that all minimum NEC working clearances are maintained. Coordinate with equipment of other trades.
- D. Where lighting fixtures and other electrical items are shown in conflict with structural members and mechanical or other equipment, provide all required supports and wiring to clear the encroachment.
- E. The branch circuits and arrangement of home runs have been designed to compensate for voltage drop and other considerations to accomplish maximum economy. Re-circuiting will not be permitted without specific approval. **Circuit numbers may change to achieve balanced loads on panels.**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- F. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.
- G. Drawings and specifications are complimentary each to the other. What is called for by one shall be as binding as if called for by both.
- H. Should the drawings disagree in themselves, or with the specifications, the better quality or greater quantity of work or materials shall be used.
- I. Outlets and switches obviously placed in a location not suitable to the finished room or area shall be removed and relocated when so directed by the Architect at no cost to the Owner. The Architect shall have the right to make any reasonable change in outlet locations before rough-in without additional cost to the Owner. The contractor shall contact engineer when switches are inadvertently shown on hinge side of door prior to rough-in.
- J. Location of light fixtures shall be coordinated with reflected ceiling plans and/or room finish schedules.

## 1.07 MATERIAL AND EQUIPMENT SUBMITTALS

- A. Submittals: Provide submittals for all products and systems described in Division 26-28 and shown on the drawings to demonstrate compliance with the requirements of the project. Furnish equipment submittals in the manner described elsewhere in these specifications.
- B. Submit to the Engineer, after the award of the contract or as dictated by project schedule, a type written list of those items of equipment and appurtenances which will be furnished. Include the name or description of the item, name of manufacturer, model or type, catalog number and manufacturer's printed information. The information submitted shall include overall dimensions, weights, voltage rating, phase, wiring diagrams, etc., and nameplate data. Assemble cut sheets into separate submittals as defined in this section or by Specification Section. Submit priority items and long lead time first. Then follow with remaining items. This will allow for faster review and response to accommodate project schedule. **Any submittal with all sections under one (1) submittal number will be returned and required to be broken into unique separate submittal numbers.** The Engineer's check will be general and does not relieve the Contractor of final responsibility to comply with the Contract Documents in all respects.
- C. Submittal review is for general design and arrangement only and does not relieve the Contractor from any of the requirements of the Contract Documents. Submittals will not be checked for quantity, dimension, fit or proper technical design of manufactured equipment. Where deviations of substitute product or system performance have not been specifically noted in the submittal by the Contractor, provision of a complete and satisfactory working installation is the sole responsibility of the Contractor. **Warranties cannot be reduced through the submittal process.**
- D. **Contractor shall indicate items being used on cut sheets by highlighting or arrowing to actual part number. Submittals may be returned without checking if submittals not appropriately marked.**
- E. **'Individual submittals' means separate submittals with unique submittal numbers for each specification section.** Separate PDFs for each Submittal number.
- F. **HARDCOPY SUBMITTAL REQUIREMENT:** Hardcopy submittals will not be required by Engineer.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**G. PDF SUBMITTAL REQUIREMENT:**

For submittal sections listed below as allowed pdf's the following requirements must be met or the submittal will not get through email security and will be auto-deleted and not checked. Each specifications section must be a separate pdf file, **one giant pdf for all sections will be rejected.**

**PDF FILE: MUST BE NAMED AS FOLLOWS:**

JOB NAME – SUBMITTAL No. XX – SUBMITTAL DESCRIPTION

**EMAIL TITLE/SUBJECT: FOR SUBMITTALS MUST BE AS FOLLOWS:**

JOB NAME – SUBMITTAL No. XX – SUBMITTAL DESCRIPTION

Failure to follow these instructions will result in the submittal never reaching the engineer and not being checked. Delays cause by not following these procedures are the sole responsibility of the contractor. Emailed submittals must come from the Architect and must not be emailed directly from the contractor. Do not Carbon Copy the Engineer on Emailed submittals.

**H. Multiple re-reviews required due to Contractor not following instructions, specifications, etc will be billed to Contractor at Engineer's current hourly rates. This shall be paid prior to submittal approval.****I. Submittals will be returned in order of construction of the project, not necessarily in order submitted.** If all sections are submitted under one binder/at one time and transmittal, each section will be returned at the appropriate time for construction phasing. Electrical Gear will not be reviewed until "Mechanical/Electrical Coordination Sheet" has been submitted. Electrical Gear and Light Fixtures may require extended review time. **If submittals are submitted early relative to construction phasing, submittals may be held, reviewed and returned at the appropriate time for construction phasing, not necessarily 2 weeks. In some cases, if submittals are received vastly out of order of construction, submittal may be rejected.****J. DO NOT SUBMIT THE FOLLOWING SECTIONS UNLESS DEVIATING FROM THE SCHEDULES/SPECIFICATIONS. Provide directly to General Contractor/CMR for inclusion into O & M Manuals. If deviating from the specifications submittal will be required. (Highlight items in each submittal content that are different to allow for proper review.):**

1. 26 05 00 – General Provisions
2. 26 05 10 – Schedule of Values
3. 26 05 19 – Wire and Cable
4. 26 05 26 – Grounding and Bonding
5. 26 05 33 – Raceways
6. 26 05 34 – Outlet Boxes, Pull Boxes and Junction Boxes
7. 26 05 80 – Empty Raceway Rough-In
8. 26 28 25 – Contactors

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- K. **PDF Submittals Allowed** for Product Cut-Sheets for are limited to the following items:  
**Separate PDF file for each Submittal number is required. Follow file format above.**
1. 26 24 16 – Branch Circuit Panelboards
  2. 26 43 00 – Surge Protective Devices
  3. Electrical Rack – Also, include other equipment and/or systems on plan.
- L. When requested, present samples of all materials proposed for use to the Engineer for his approval.
- M. Certify Shop Drawings have been checked for compliance with Contract Documents. Certify that the materials submitted can be delivered and installed according to the construction schedule.
- N. Select all other materials, not specifically described on the Drawings or in these specifications but required for a complete and operable facility, and submit to the Engineer for approval.
- O. **Substitutions:** (“Substitution Request” form must be submitted)
1. Substitutions must be made and accepted PRIOR to Bid.
  2. Unless otherwise indicated, base bid on the equipment shown on the Drawings and hereinafter specified.
  3. Request for approval to substitute materials, methods, or processes shall be made to Architect and if found acceptable, will be confirmed by an addendum to the Construction Documents. Where proposed substitutions are not incorporated into the Construction Documents by addendum **PRIOR** to time of the General Contract bid opening, all bids shall be held to have been made on the basis of the materials, methods and processes required by the Construction Documents.
  4. All substitutions shall be of equal or better quality to the equipment specified.
  5. Acceptance of the substitution by the Engineer does not relieve the Contractor of responsibility for proper operation of the systems, compliance with specifications, necessary changes due to dimensional differences or space requirements, and completion of work on schedule.
  6. It is not the intent of the Specifications to limit materials to the product of any particular manufacturer. Where definite materials, equipment and/or fixtures have been specified by name, manufacturer or catalog number, it has been done so as to set a definite standard and a reference for comparison as to quality, application, physical conformity and other characteristics unless no substitutions are noted.
  7. **Submit fully completed “Substitution Request” form located at end of this section. If this form is not submitted, all substitution request will be automatically rejected.**
  8. **For substitutions that require substantial review by engineer to ensure equality, the contractor requesting substitutions shall reimburse the engineer at current hourly rates for all review time. This shall be paid prior to submittal approval. This applies to all equipment not previously approved on construction documents.**



## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- a. Light Fixtures Packages
- b. Alternate Transformers
- c. Alternate Surge Protective Devices
- d. Alternate Equipment/Gear Packages
- e. Contractor Cost Savings Packages Requiring Substantial Review Time

## 1.08 SHOP DRAWINGS REQUIRED

- A. Prepare and submit working construction drawings as requested, specified, and otherwise necessary to demonstrate proper planning for installation and arrangement of all work. Layout drawings to scale and show dimensions where accuracy of location is necessary for coordination or communication purposes. Show work of all trades, including Architectural, Structural, Mechanical, and Electrical items which may be pertinent to proper and accurate coordination.
- B. Architectural drawings must be used for backgrounds in preparation of shop drawings and shall be obtained from the Architect. Confirm requirements and stipulations for obtaining floor plan backgrounds with Architect and with other sections of specification. Engineer's drawings and CAD files **may not** be used for Shop Drawings. Reference 1.01-L.
- C. Reference other specification for additional requirements.
  - 1. Fire Alarm
  - 2. PA System
  - 3. Electrical Rooms

## 1.09 RECORD DRAWINGS

- A. Reference requirements stated elsewhere in the specifications.
- B. THE CONTRACTOR SHALL TAPE ALL ADDENDAS ISSUED DURING BIDDING TO HIS CONSTRUCTION AND RECORD DRAWING SET PRIOR TO COMMENCING CONSTRUCTION. PAY REQUESTS WILL NOT BE PROCESSED UNTIL THIS REQUIREMENT IS MET.
- C. In addition to other requirements, a master Record Drawing print set (separate from field sets) shall be kept in the site construction office as the work progresses. Show routing and location of items cast in concrete or buried underground. Work located in spaces with access, or above suspended ceilings, is not considered permanently concealed. Show complete routing and sizing of any significant revisions to the systems shown. Indicate locations of all existing active and inactive conduit uncovered during construction. **Keep marked up set at site for review at site meetings.**
- D. **Contractor to indicate conduit routing locations for all major runs and branch circuits under slab along with major junction locations.**
- E. The Contractor shall be responsible for updating all items, including but not limited to floor plan changes, system changes, addendums, change orders, etc. on the prints to "As-Built" conditions. At the completion of the job the marked up As-Built Drawings shall be submitted to the Architect for final review and comment. These corrected prints together with all the revisions, additions and deletions of work, shall form the basis for preparing a set of record drawings.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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- F. Using the "Record Drawing Set", the Contractor shall print two (2) complete sets of prints one for submission to the Owner and one rolled in a 4" PVC pipe in main electric room mounted to wall and labeled. Tape all edges. The contractor shall provide pdf copies/scans for owner record purposes. Remove Engineer's seal from record drawings.
- G. The Contractor shall bear all the costs of producing the "Record Drawing Set".
- H. Electrical riser diagrams shall be laminated and mounted in the main electrical room or as directed by the Engineer.

**1.10 CODES, REGULATIONS AND ORDINANCES**

- A. Comply with the requirements of the National Electrical Code, National Electrical Safety Code, Occupational Safety and Health Act (OSHA) and all other applicable Federal, State and local codes and ordinances. All codes and standards shall be per the latest adopted edition with all supplements and official interpretations included. Provide disconnecting means for all equipment per NEC. The Drawings and specifications take precedence when they are more stringent than codes, standards, ordinances, and statutes take precedence when they are more stringent or conflict with the Drawings and specifications.
- B. Should the Contractor perform any work that does not comply with the requirements of the applicable Building Codes, State Laws, Local Ordinances and Industry Standards, he shall bear all costs arising in correcting the deficiencies, as approved by the Architect.
- C. All work shall also satisfy applicable local codes, ordinances, and regulations of the governing bodies, and all authorities having jurisdiction over the work. Where alterations to, or deviations from, the drawings and specifications are required by the authority having jurisdiction, report the same in writing to the Owner's representative and secure his approval before proceeding.

**1.11 DELIVERY AND STORAGE OF EQUIPMENT AND MATERIAL**

- A. Investigate each space in the building through which equipment must pass to reach its final location. If necessary, the manufacturer shall be required to ship his material in sections sized to permit passing through such restricted areas in the building.
- B. Retain all portable and detachable parts or portions of installation such as fuses, key locks, adapters, blocking clips, and inserts until final completion of work. Deliver parts to the Owner or his authorized representative and attach an itemized receipt to obtain request for final payment.
- C. Product Handling:
  - 1. Use all means necessary to protect the work and materials of this section before, during, and after installation and to protect the work and materials of all other trades.
  - 2. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer and at no additional cost to the Owner.
  - 3. Store and protect materials and equipment in accordance with the manufacturer's recommendations.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

4. Provide suitable box or crate electrical equipment and cover with waterproof covers to protect against dirt, moisture or accidental damage during shipment or outdoors at the job site.
5. Store all conduits on skids.

## 1.12 SERVICEABILITY OF PRODUCTS

- A. Furnish all products to provide the proper orientation of serviceable components to access space provided.
- B. Coordinate installation of piping, ductwork, equipment, conduits, junction boxes, panels and other products to allow proper service of all items requiring periodic maintenance or replacement.
- C. Replace or relocate all products incorrectly ordered or installed to provide proper serviceability.

## 1.13 ACCESSIBILITY OF PRODUCTS

- A. Arrange all work to provide permanent, convenient and safe access to all serviceable and/or operable products. Layout work to optimize net usable access space within confines of space available. Advise Architect, in a timely manner, of areas where proper access cannot be maintained. Furnish layout drawings to verify this claim, if requested.
- B. Provide access doors in ceilings, walls, floors, etc. for access to automatic devices and all serviceable or operable equipment in concealed spaces. Location of panels shall be submitted for approval in sufficient time to be installed in the normal course of work.

## 1.14 UTILITY COSTS

- A. Provide complete utility service connections. The locations and elevations of the various utilities included within the scope of this work have been obtained from city and/or other substantially reliable sources as a general guide only, without guarantee as to accuracy. Verify the locations, elevations, and availability of all utilities and services required, and be adequately informed as to their relation to the work.
- B. Include all service charges required by the electric utility or telephone/data/cable utility. Reference General Conditions for further information. Keep all utility company charges as a separate line item in bid. If cost is not available from utility company, indicate utility contact person, telephone number and **date of contact**.

## 1.15 CLEAN-UP

- A. Remove debris and waste materials from within the construction areas and transport off-site, daily.
- B. Keep the construction area clean, free from hazard, and orderly arranged.
- C. Pay all costs of waste removal and disposal. Reference General Conditions for further information.
- D. Dispose of waste materials in accordance with all regulations which govern.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- E. Take all precautions to protect persons who enter the construction area from hazardous conditions, hazardous waste, toxic waste, or other unsafe conditions.
- F. Upon completion of construction, remove all debris, waste materials, unused materials, temporary constructions, vehicles, tools, fencing, etc. to Owner's satisfaction.
- G. All equipment and materials shall be protected from physical moisture absorption, metallic corrosion and weather damage from time of delivery to completion of project. Replace any damaged materials.

**PART 2 - PRODUCTS****2.01 EQUIPMENT AND MATERIALS**

- A. Unless otherwise indicated, provide only new equipment and materials.
- B. On all major equipment components, provide manufacturer's name, address, model number, and serial number permanently attached in a conspicuous location.
- C. All materials furnished under these specifications shall be the standard product of manufacturer's regularly engaged in the production of such equipment and shall be the manufacturer's latest approved standard design.
- D. Guarantees:
  - 1. The Contractor and Manufacturers shall provide a ONE (1) YEAR guarantee for all work under the Electrical Trade. However, such guarantees shall be in addition to and not in lieu of all other liabilities which the manufacturer and the Contractor may have by law or by other provisions of the Contract Documents. In any case, such guarantees and warranties shall commence when the Owner accepts the mechanical/electrical system, as determined by the Architect and shall remain in effect for a period of ONE (1) YEAR thereafter.
  - 2. All materials, items of equipment, all lighting, and workmanship furnished under each section shall carry a ONE (1) YEAR warranty against all defects in material and workmanship. Any fault under any contract, due to defective or improper material, equipment, workmanship or design which may develop shall be made good, forthwith, by and at the expense of the Contractor for the work under his Contract, including all other damage done to areas, materials and other systems resulting from this failure.
  - 3. The Contractor shall guarantee that all elements of the system, which are to be provided under his Contract, are of sufficient capacity to meet the specified performance requirements as set forth herein or as indicated.
  - 4. Upon receipt of notice from the Owner of failure of any part of any systems or equipment during the guarantee period, the affected part or parts shall be replaced by the Contractor for his respective work, as applicable.
  - 5. Furnish, before the final payment is made, a written guarantee covering the above requirements.
  - 6. Reference other guarantee information elsewhere in these specifications.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

## 2.02 STANDARDS

- A. Where the Underwriters' Laboratories (UL) have established standards and issued labels for a particular group, class or type of material, apparatus, appliance or device, provide the UL label on all such items in that category incorporated into the work.
- B. Where such items are not covered by UL standards, they shall meet or exceed the requirements of the current National Electrical Code (NEC), or if not covered there, by the applicable, published, recognized standard of the American National Standards Institute (ANSI), or of the industry and of the related engineering society. Example: National Electrical Manufacturers Association (NEMA) and Institute of Electrical and Electronics Engineers (IEEE).
- C. Contractor is to follow the most current version adopted for all codes and standards.

## PART 3 - EXECUTION

## 3.01 CUTTING AND PATCHING

- A. Carefully lay out all work in advance so as to minimize cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, etc. Perform all cutting, channeling, drilling, etc., as required for the proper support, concealment, installation, or anchorage of raceways, outlets, or electrical equipment in a careful manner. Any damage to the building, structure, piping, ducts, equipment, or defaced finish, tile, plaster, woodwork, or metal work shall be repaired by skilled mechanics of the trades involved at the Contractor's expense and to the satisfaction of the Engineer. All cutting, channeling, chasing, or drilling of unfinished masonry, tile, etc., or cutting, drilling, anchoring to or welding of structural members shall be performed in a manner having the Engineer's prior approval. All openings made in fire rated or smoke rated walls, floors, and ceilings shall be patched and made tight in a manner to conform to the fire rating or smoke rating for the enclosure.
- B. Where conduits pass through exterior walls, thoroughly caulk with sealant the annular space around the conduit to provide a watertight closure at the interior wall cavity and exterior wall surface. Provide  $\frac{1}{4}$ " maximum annular space around the conduit. Provide and install all counterflashing of all conduit, pipe and supports which pierces roofs and other weather barrier surfaces. Verify detail with Architect before installation. All work shall be performed in a workmanlike manner to assure weatherproof installation. Any leaks developed shall be repaired at his expense, to Architect's satisfaction. All waterproofing, flashing and counterflashing shall be compatible with roofing system so as not to void any roof warranties. Confirm installation with Architect and Roofing Contractor.

## 3.02 SEALING AND FIREPROOFING

- A. **SEALING OF PENETRATIONS THROUGH RATED WALLS, FLOORS, CEILING AND ROOF ASSEMBLIES SHALL BE INSTALLED PER UL "FIRE RESISTANCE DIRECTORY." UL SYSTEM NUMBERS INDICATED ARE FOR A PARTICULAR LISTED INSTALLATION AND ARE FOR GENERAL INFORMATION AND INTENT. OTHER LISTED UL SYSTEM DESIGNS MAY BE USED. IN ALL CASES, SUBMIT MATERIALS, UL SYSTEM DESIGN NUMBERS AND UL DETAILS TO BE USED THROUGHOUT THE PROJECT AND IDENTIFY WHICH DETAIL IS TO BE USED FOR EACH SPECIFIC CONDITION. POST REVIEWED DETAIL AT JOB SITE FOR REFERENCE.**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

1. Only materials tested in the specific UL System No. may be used.
  - a. Caulk Manufacturer:
    - 1) 3M Type CP-25 W/B + for all assemblies requiring 3M caulk.
    - 2) For WL3045 and WL3046 use Hilti FS611A sealant.
  - b. Steel Sleeve (stud wall) (UL System No. WL1003): Cylindrical sleeve shall be fabricated from minimum 0.019" thick (no. 28 gauge) galvanized sheet steel and having a minimum two inch (2") lap along the longitudinal seam. Length of steel sleeve to be equal to thickness of wall plus one inch (1") such that, when installed, the ends of the sleeve will project approximately 1/2" beyond the surface of the wall on both sides of the wall assembly. The diameter of the openings cut on each side of the wall assembly (concentric with conduit) to be 2 to 2-1/2" larger than the outside diameter of conduit such that, when the steel sleeve is installed, a 1 to 1-1/4" annular space will be present between the steel sleeve and the conduit around the entire circumference of the conduit. Install sleeve by coiling the sheet steel to a diameter smaller than the through opening, inserting the coil through the openings and releasing the coil to let it uncoil against the circular cutouts in the gypsum wallboard layers.
  - c. Optional Steel Sleeve (concrete or block wall): Except for single insulated cables, provide sleeve cast in floor/wall or mortared into CMU wall; Schedule 40 or heavier, length to extend a maximum one inch (1") from top surface of floor or a maximum of one inch (1") from both sides of wall.
  - d. Forming Material: Minimum one inch (1") thickness mineral-wool batt insulation material. Tightly pack into sleeve with minimum 1/2" recess on ends. Manufacturer: Thermafiber Safing Insulation.
2. Firestop system shall be installed at top surface of floor and symmetrically on both sides of wall assemblies and one (1) side of floor.
3. Alternate floor penetration system (with firestop mortar): UL System No. CAJ1032.
4. Wires and Cables:
  - a. For gypsum frame wall, single cable: Fireproof per UL System No. WL3001. Opening for cables to be hole-sawed through gypsum wall board layers. Diameter of opening to be 3/8" to 5/8" larger than outside diameter of cable. Cable to be rigidly supported on both sides of wall assembly. Caulk to fill annular space throughout thickness of gypsum wall board layers and apply 1/4" bead of caulk to perimeter of cable at its egress from wall (both sides).
  - b. For gypsum frame wall, multiple cables: Use UL system No. WL3021, WL3045, WL3046 or equivalent to maintain rating of wall.
  - c. For concrete walls/floors or CMU walls, single or multiple cables: Fireproof per UL System No. CAJ3030. Install sleeve in assembly flush with both sides. Cables to be a minimum of ten percent (10%) and a maximum of thirty-three percent (33%) of cross-sectional area of opening. Recess minimum one inch (1") thickness of mineral wool material into opening

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

around cables. Caulk openings around cable to minimum depth of one inch (1"). Optional sleeve may be used per UL detail requirements.

5. Reference Architectural for the exact location of all rated walls, floors, ceilings and ceiling/roof assemblies.
  6. Materials used in firestop systems shall be installed in accordance with the manufacturer's written instructions (shall be posted at job site, in General Contractors trailer), provided with materials for specific UL System No.
  7. Manufacturers: 3M, Metacaulk, Hilti, BioFireshield or equal.
- B. In non-rated walls identified for sound insulation, provide 1/2" space between conduit and sleeve packed with multiple layers of forming material. Allow 5/8" minimum space on each side and caulk with acoustical sealant.
- C. **Final condition to prevent passage of fire, smoke, noxious gas and water.**
- D. For non-rated electrical/mechanical rooms: Seal all conduit passing through room walls, floors and ceilings with 3M caulk, Type CP-25 WB+.

### 3.03 WORKMANSHIP AND COMPLETION OF INSTALLATION

- A. For the actual fabrication, installation and testing, use only thoroughly trained and experienced workmen completely familiar with the items required and with the manufacturer's recommended methods of installation. In acceptance or rejection of the installed work, no allowance will be made for lack of skill on the part of workmen.
- B. Install all specialties as detailed on plans. Where details or specific installation specifications are not included herein, follow approved manufacturer's recommendations.
- C. Install complete, thoroughly check, correctly adjust, clean, and leave ready for operation all equipment and material connected with this project.
- D. Ballasts, contactors, starters, transformers and like equipment which are found to be noticeably noisier than other similar equipment on the project will be deemed defective and shall be replaced.
- E. Electrical service stub locations, sizes and quantities for equipment are approximate only. The Contractor must verify all service locations, sizes and quantities with the equipment supplier before rough-in.
- F. The Electrical Contractor shall make all final connections to all electrical equipment furnished and set in place by others, including millwork with outlets. The Electrical Contractor shall provide and install all disconnect switches as required.
- G. The Electrical Contractor shall provide/install all circuit breakers, power wiring, conduit systems and final connections required for operation of heating cable systems.
- H. Provide and install all adjustable mounting brackets, steel bar hangers, T-bar mounting clips, support channels and universal support bridges as required for installation of recessed light fixtures, speakers, alarm devices and other ceiling mounted devices. Ceiling tile shall not be used to support ceiling mounted devices in lay-in ceilings.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- I. Provide wood trim for any semi-recessed panels installed. Verify finishes with the Owner/Architect.
- J. Provide Hoffman enclosure (#A-244208WFLP) wall mounted at location shown on plans. Provided in enclosure shall be spare fuses, three (3) of each amperage used in project up to 100 amp size and spare smoke detectors (see Section 28 31 00.)
- K. Equipment and materials shall be listed by an organization that evaluates products and states that the equipment or material, either meets appropriate designated standards or has been tested and found suitable for a specified purpose or shall be labeled by the manufacturer to indicate compliance with appropriate standards or performance in the specified manner to be used.
  - 1. Listed or labeled equipment and materials shall be applied, installed, connected, erected, used, cleaned, adjusted, and conditioned in accordance with any instructions included in the listing or labeling.
- L. The installation shall be performed by licensed, competent workmen to provide a thorough and complete installation.
- M. All work shall be accomplished in conjunction with other trades in a manner which will allow each trade adequate time at the proper stage of construction to fulfill his work.
- N. Exact locations shall be determined by reference to the general plans and measurements at the building and shall be subject to reasonable change by the Owner's representative without additional cost.
- O. Prior to and during construction, provide adequate storage facilities and properly protect items subject to any damage. Failure to comply with this provision will be sufficient cause for the rejection of the particular apparatus involved.
- P. At completion, the installation shall be thoroughly cleaned. All tools, equipment, obstructions, temporary power, temporary lighting and debris shall be removed from the premises.

## 3.04 BALANCING SYSTEM

- A. Balance the electrical system between the respective phases of the system. Balance individual circuits in each panel of the system. Where phase assignments or circuit numbers are indicated on the drawing, do not deviate without the Engineer's approval. All deviations shall be noted on panelboard submittals and on Record Drawings and schedules

## 3.05 COOPERATION WITH OTHER CONTRACTORS

- A. Cooperate with other Contractors so that the installation of the electrical materials and equipment may be properly coordinated. Where a conflict occurs with piping, duct work, etc., it shall be resolved as directed by the Engineer.
- B. Interferences between conduit and other trades shall be handled by giving precedence to pipe lines requiring grade for proper operation. Where space requirements conflict, the following order of precedence shall generally be observed:
  - 1. Building Lines
  - 2. Structural Members



## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

3. Drainage Waste and Vent Piping
4. Refrigerant Piping
5. Ductwork
6. Water and Gas Piping
7. Electrical Conduit
8. Fire Protection Piping

**3.06 COORDINATION OF WORK**

- A. Each Contractor shall compare his drawings and specifications with those of other Trades and report any discrepancies between them to the Architect and obtain from the Architect written instructions to make the necessary changes in any of the affected work. All work shall be installed in cooperation with other Trades installing inter-related work. Before installation, all Trades shall make proper provisions to avoid interferences in a manner approved by the Architect.
- B. Locations of conduit and equipment shall be adjusted to accommodate the work with interferences anticipated and encountered. Exact routing and location of systems shall be determined prior to fabrication or installation.
- C. Offsets and changes of direction in all conduit systems shall be made as required to maintain proper headroom and pitch of sloping lines whether or not indicated on the drawings.
- D. Where discrepancies in scope of work as to what Trade provides items such as starters, disconnects, flow switches and the like exist, such conflicts shall be reported to the Architect prior to signing of the Contract. If such action is not taken, the various Trades shall furnish such items as part of their work for complete and operable systems.
- E. Verify voltage, phases, termination points, termination requirements and required disconnects for all equipment provided as part of this contract or equipment furnished by Owner prior to rough-in. Report any discrepancies to Architect/Engineer.
- F. The Contractors are to avoid routing conduit through fire rated assemblies where practical. Each trade is responsible for proper coordination of required sleeves or block-outs with rated assembly installers. Each trade is responsible for providing sleeves, as required, for his work. Each trade shall verify acceptable tolerances around penetrating item in fire assembly before beginning fire sealing.
- G. **The Electrical Subcontractor shall verify with HVAC, Plumbing and Fire Protection Subcontractors the required electrical characteristics for all motors and equipment before ordering and submitting of electrical gear. Verify actual connection points prior to installation and roughing-in. Mechanical and Electrical Contractor are responsible for coordination of electrical requirements and final fuse sizes of all A/C equipment. When Mechanical Contractor substitutes equipment that requires additions or upgrades to electrical system, he shall bear all costs arising from such substitutions. Reference "Mechanical/Electrical Coordination Sheet" in specifications.**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**3.07 SAFETY PRECAUTIONS AND PROGRAMS**

- A. It shall be the duty and responsibility of the Contractor and all of its subcontractors to be familiar and comply with all requirements of Public Law 91-696, 29 U.S.C. Secs. 651 et. seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto, and to enforce and comply with all of the provisions of this Act. IN ADDITION, ON PROJECTS IN WHICH TRENCH EXCAVATION WILL EXCEED A DEPTH OF FIVE FEET, THE CONTRACTOR AND ALL OF ITS SUBCONTRACTORS SHALL COMPLY WITH ALL REQUIREMENTS OF 29 C.F.R. SECS. 1926.652 AND 1926.653, OSHA SAFETY AND HEALTH STANDARDS.

**3.08 OPERATING AND MAINTENANCE MANUALS**

- A. Provide one (1) Operation and Maintenance manuals for training of Owner's personnel in operation and maintenance of systems and related equipment in the manner described elsewhere in these specifications. In addition, organize manuals and include data and narrative as noted below (bind each manual in a hard-backed loose-leaf binder. Use 8-1/2" x 11" white paper). Provide PDF copy of O&M for owner records
- B. Operating Sequence and Procedures:
1. Contents: In each chapter, describe the procedures necessary for personnel to operate the system and equipment covered in that chapter.
  2. Typewritten Operating Procedures: Write procedures for start-up, operation and shutdown.
    - a. Start-up: Give complete step-by-step instructions for energizing equipment, making initial setting and adjustments whenever applicable.
  3. Shutdown Procedures: Include instructions for stopping and securing the equipment after operation. If a particular sequence is required, give step-by-step instructions in that order.
- C. Maintenance Instructions:
1. Provide a schedule of preventive maintenance for each product. Recommend frequency of performance for each preventive maintenance task: i.e., cleaning, inspection, etc.
- D. Manufacturer's Brochures: Include manufacturers' descriptive literature covering all appurtenances used in each system, together with illustrations, exploded views and renewal parts lists. Provide the nearest manufacturer's representatives name, address and phone number.
- E. Shop Drawings: Provide two copies of all corrected, approved submittals and shop drawings covering equipment for the project either with the manufacturer's brochures or properly identified in a separate subsection.
- F. Spare Parts Lists: Include a list of all equipment furnished for the project, with a tabulation of descriptive data of all the spare parts proposed for each type of equipment or systems. Properly identify each part by part number and manufacturer.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

## 3.09 IDENTIFICATION

## A. Equip the following items with nameplates:

1. Motor Starters
2. Main Switchboard and Overcurrent Devices and Spares
3. Panelboards and Branch Circuits
4. Safety Disconnect Switches
5. Contactors
6. Control/Power Equipment in Separate Enclosures Including Relays
7. Bypass Switches and Transfer Switches
8. Emergency Generator Sets
9. UPS System and Battery Racks
10. Motor Control Centers
11. Transformers

## B. No dymo (stick on indented plastic) type label will be permitted.

## C. Identify equipment listed above. COORDINATE EQUIPMENT NUMBERS WITH MECHANICAL AND/OR KITCHEN PLANS. Each piece of equipment shall be numbered consistently throughout.

## D. Fabricate nameplates as follows:

1. Provide three (3) ply, 1/16" laminated plastic nameplate material with white core for lettering and black background. All nameplates, for equipment powered from emergency circuits, shall have white core for lettering and red background.
2. Use capital letters.
3. Unless otherwise indicated, provide minimum 3/4" high x 2" long nameplates with 1/4" letters.
4. All labels shall be permanently affixed to the front of all required equipment using two (2) round head self tapping screws. Self-adhesive labels are not acceptable. Align labels with equipment.

## E. All junction boxes shall have the panel/circuit number(s) identified on the blank coverplate, handwritten with a permanent black marker. Disconnects, combination motor starter/disconnects and manual motor starter shall have the panel/circuit number(s) identified on the inside of the front cover, hand written with a permanent black marker.

## F. Provide engraved coverplates for all switches and control devices which are not otherwise clearly related to the equipment they serve.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- G. Label all receptacles and light switches with circuit number using electronic labeler (black on clear). Install label level on front of face plate for receptacles and back side of face plate for light switches.**
- H. Spray paint J-Boxes red for Fire Alarm System. All other special systems J-Boxes to be painted white.**
- I. Color code all 600 volt insulated conductors by installing conductors with factory colored insulation for conductors No. 10 AWG and smaller.**
- J. Install colored tape on all 600 volt conductors No. 8 AWG and larger. Apply tape 6 inches from terminal points. Do not cover factory applied cable identification markings with taping; tape locations may be adjusted slightly to prevent the covering of factory markings. Tape shall be Scotch No. 35 or approved equal, 7-mil thick by 3/4" wide vinyl adhesive tape.**
- K. Install engraved plastic laminate nameplates as listed below.**

| EQUIPMENT                                                                         | LETTERING SIZE | INFORMATION                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switchboards, Panelboards, MCCs and other distribution system overcurrent devices | 1/4" / 1/8"    | Switchboard name designation, ampere rating of the supply conductors, voltage characteristics, power source and room number(s).<br>EX: MDP, 1900A, 480Y/277V, Served from Utility<br>EX: HVA, 175A, 480Y/277V, source DP-1,3,5. in Room 100. |
| Transformers                                                                      | 1/4" / 1/8"    | Transformer name designation, load served, power source and room number(s).<br>EX: Trans. TR-1, serves PANEL LV-1, source DP-7,9,11 in Room 203.                                                                                             |
| Remotely mounted Safety Switches and Starters                                     | 1/8"           | Load served, power source and room number(s).<br>EX: HWP-1, HVA 37,39,4 1 in Room 203.<br>EX: PANEL LV-2 in Room 303, source TR-2.                                                                                                           |
| Contactors                                                                        | 1/8"           | Load served, power source and room number(s).<br>EX: Room 502, Science Lab, LVA 31,33 35, 37,39,4 1.<br>EX: Building security lights, HVA 2, 4.<br>EX: Parking lot lights, HVA 6, 8, 10.                                                     |

- L. Prepare a neatly typed panelboard circuit directory. Identify all circuits by the equipment served and by the room number, room numbers may be different from those shown on drawings. Verify room numbers prior to typing directories. Indicate spares and spaces with light, erasable pencil marking.**

## 3.10 TESTING

- A. Test and record results for all power feeders for Megger Readings, including phase to phase and phase to ground as recommended by the cable manufacturer.**
- B. Measure and record service ground resistance.**
- C. For equipment having ground-fault protection the ground-fault protection system shall be performance tested when first installed on site. The test shall be conducted in accordance with instructions which shall be provided with the equipment. A written record of this test shall be made and shall be submitted to the Engineer and a copy put in the Operation and Maintenance Manuals.**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

## 3.11 CERTIFICATE OF COMPLETION

A. Submit, at time of request for final inspection, a completed letter in the following format:

I, (Name) , of (Firm) , certify that the electrical work is complete in accordance with Contract Plans and Specifications, and authorized change orders (copies attached) and will be ready for final inspection as of (Date). I further certify that the following specification requirements have been fulfilled:

1. Megger readings performed, six (6) copies of logs attached.
2. Ground tests performed, six (6) copies of method used and results attached, including service ground readings and ground fault test results.
3. Operating manuals completed and instructions of operating personnel performed for all systems, (Date) , (Signature, Owner's Representative).
4. Record drawings up-to-date and ready to deliver to Engineer.
5. Fire alarm system final connections, check-out and start-up completed on (Date) by (Signature, Factory Authorized Representative and Trained Technician) .
6. All other tests required by Specifications have been performed.
7. Final clean-up is completed.
8. All systems are fully operational.

Signed: \_\_\_\_\_

## 3.12 SITE OBSERVATION

- A. Periodically, the Engineer will visit the site and review the construction progress. Field Reports will be issued noting any discrepancies or items that do not meet the intent of the contract documents found during said site visit. The contractor must answer each item listed on each field report, item by item.
- B. It shall be the duty of the Contractor to personally make a careful inspection trip of the entire project, assuring himself that the work on the project is ready for final acceptance before calling upon the Owner, Architect or Engineer to make final acceptance of the work. Subsequent trips required because of Contractor's failure to do so, will be made at Contractor's expense, billed at current Engineer's hourly rates.**
- C. The final acceptance of the work will be made jointly by the Architect and the Owner.
- D. Time spent for Investigation/Site Trips due to Contractor lack of installation capabilities/skills or knowledge is not part of Engineer's scope. Therefore time spent assisting contractor in these matters or problems that arise due to these matters will be billed to Contractor. Engineer will bill the contractor at the current hourly rates of the Engineer. These fees will be paid in full prior to release of contingency.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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**3.13 DURING FINAL INSPECTION**

- A. Demonstrate installation to operate satisfactorily in accordance with requirements of Contract Documents.
- B. Should any portion of installation fail to meet requirements of Contract Documents, repair or replace items failing to meet requirements until items can be demonstrated to comply.

**3.14 CLOSE-OUT DOCUMENTS:**

- A. Furnish three signed letters of guarantee.
  - 1. Clearly and individually, document all material, equipment and service guarantees beyond a single year.
- B. Furnish one original and two copies, of a statement from the inspecting authority stating that the installation has been accepted and approved.
- C. Furnish one reproducible, two copies and an electronic "AutoCad" version, of complete, full-size sets of drawings showing conduit locations by accurate dimensions from permanent structures.
  - 1. **"Record Drawings"** are to include:
    - a. A sheet legend shall be present on the 1<sup>st</sup> sheet of the required set which identifies each sheet making-up the set.
    - b. Site plan(s) with primary and secondary electric power and communication lines to the property line (may be a civil sheet).
    - c. Site plan(s) with all underground conduits to other buildings, structures, fixtures and equipment.
    - d. Marked-up electrical plans and schedules.
- D. Furnish three complete sets of overload settings and motor data records.
- E. Furnish three complete sets of the electrical testing results.
- F. Furnish three complete sets of the power system study final report.
- G. Furnish all manufacturer's software if required for start-up or modifying products furnished.
- H. Furnish two complete sets of the AC Drive's comprehensive manual that includes operation, programming, diagnostics, applications, wiring diagrams, layout diagrams, and outline dimensions.
  - 1. Identify each AC Drive's model number on a cover sheet.
- I. All major Owner training sessions to be videotaped in non-pixelated video in Windows file format.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

MEP/ENERGY CONSULTANTS



115 East Main Street

COMMISSIONING • FIELD INVESTIGATIONS

Round Rock, Texas 78664

PH: (512) 218-0060

FIRM F-4095

FAX: (512) 218-0077

**PRE-CONSTRUCTION INSTRUCTION SHEET****Submittal/RFI Requirements**

- A. 'Individual submittals' means separate submittals with unique submittal numbers. One single giant PDF will be rejected.
- B. 2 Submittal CATEGORIES (Reference Specifications)
  - a. Not required unless deviating from specification
  - b. PDF allowed.

**PDF SUBMITTAL/RFI FILE TITLE REQUIREMENT:**

For submittal sections listed below as allowed pdf's the following requirements must be met or the submittal will not get through email security and will be auto-deleted and not checked. Each pdf submittal must be a separate pdf file.

**PDF FILE: MUST BE NAMED AS FOLLOWS:**

JOB NAME – SUBMITTAL No. XX – SUBMITTAL DESCRIPTION

JOB NAME – RFI No. XX – RFI DESCRIPTION

Example: Texas ISD ES No. 2 – Submittal 8 – Plumbing Fixtures

Example: Texas ISD ES No. 2 – RFI 3 – Library Light Fixture Mounting Height

**EMAIL TITLE/SUBJECT REQUIREMENTS:**

Emails without Job Name and proper format will not get through email security and will be auto-deleted and not checked.

JOB NAME – SUBMITTAL No. XX – SUBMITTAL DESCRIPTION

JOB NAME – RFI No. XX – RFI DESCRIPTION

- C. If submittals are submitted early relative to construction phasing, submittals may be held, reviewed and returned at the appropriate time for construction phasing, not necessarily 2 weeks. In some cases, if submittals are received vastly out of order of construction, submittal may be rejected.
- D. Time Critical Submittal Coordination Items
  - Mechanical to provide to General Contractor for Structural Roof Coordination**
    - a. Mechanical to provide roof opening shop drawing as early as possible for structural coordination. Per specifications.
  - Mechanical to provide to General and Electrical Contractors for Gear Coordination**
    - b. Mechanical to complete "MECHANICAL/ELECTRICAL COORDINATION SHEET" prior to electrical gear submittals for coordination with electrical contractor. Per specifications.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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- E. **Do not submit non pre-approved substitutions during submittal time. These submittals will be automatically REJECTED. Substitution Pre-approval was at bid time.**
- F. **Review time for multiple resubmittals of non-approved equipment will result in Contractor being billed for review time that is not part of Engineer's Scope. Engineer will bill Contractor at Engineer's Current hourly rates.**
- G. **Email of all Submittals/RFI's must go directly to Architect. Do not Copy Engineer.**
- H. **Engineer is not the Contractors plan reference resource. Do not submit an RFI until drawings and specifications have been reviewed first. If the answer is clearly on the drawings the response will be "The answer is clearly on the drawings, Engineer is not the Contractors plan reference resource."**
- I. **Call before submitting a written RFI.**
- J. **All formal Job emails must come from Architect.**
- K. **Do not email send recurring jobsite meeting requests to Engineer. Engineer does not attend all weekly meetings. Architect will coordinate when Engineer is to be required at job site for specific meetings.**

**Shop Drawings and Cad Files**

- A. Contractor Shop Drawings must use Architectural Backgrounds and Architectural RCP's (when available or lighting floorplan) and **Mechanical Contractor Shop Drawings** for coordination purposes. Do not request MEP floorplans, this will be cut and paste into an email for you to read. Engineer cannot send architectural backgrounds.
- B. If no Architectural RCP is available for light locations. Lighting Floorplans will be released.
- C. Mechanical Floorplan will be released to Mechanical Contractor for aid in production of his own shop drawings. HCE mechanical drawings may not be submitted as shop drawings.
- D. Fire Alarm, Sprinkler, Intercom etc. all to use Architectural Backgrounds, must be obtained from Architect.
- E. Schedule and Details sheets will not be released.



## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

MEP/ENERGY CONSULTANTS

**SUBSTITUTION REQUEST**

FROM: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT: \_\_\_\_\_

RE: \_\_\_\_\_

COMMISSIONING • FIELD INVESTIGATIONS

The following has been submitted for consideration on the aforementioned project:

Specification Title, Section, Page and Article/Paragraph: \_\_\_\_\_

Drawings and Details Affected: \_\_\_\_\_

Proposed Substitution/Description: \_\_\_\_\_

Installer's Name: \_\_\_\_\_

Manufacturer's name: \_\_\_\_\_

☐ Point by Point Comparative Data attached - REQUIRED BY A/E (\_\_\_\_\_ # of pages including cover)***Why is Substitution Being Submitted?***

- ☐ Pre-Bid Substitution (Prior Approval): Include detailed analysis comparing proposed substitution against specified product, including redlined Specifications showing differences or deviations.
- ☐ Specified product is not available. Explain in detail as attachment.
- ☐ Cost Savings to Owner. Indicate comparative cost analysis as attachment.
- ☐ Other. Explain.

***Effects of Proposed Substitution?***

(Attach complete explanations and technical data, including laboratory test, if applicable.) Include complete information changes to Drawings and/or Specification that proposed substitution would require for its proper installation. Fill in blanks below:

- A. Does substitution affect dimensions shown on drawings? ☐ No ☐ Yes
- B. Will undersigned pay for changes to building design, including engineering and detailing costs caused by requested substitution? ☐ No ☐ Yes
- C. What affect does substitution have on other trades?

D. Differences between proposed substitution and specified item? \_\_\_\_\_

E. Indicate how proposed substitution meets LEED requirements. (if applicable)

F. Manufacturer's guarantees of proposed and specified items are:

☐ Same ☐ Different (explain on attachment)

The Contractor and Subcontractor certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Similar maintenance service and source of replacement parts, as applicable is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By: (name, address, telephone and contact person of manufacturer and installer of proposed substitution)

For A/E Use: SR# \_\_\_\_\_

- ☐ Accepted ☐ Accepted as Noted
- ☐ Not Accepted ☐ Received Too Late
- ☐ Incomplete Information
- ☐ No Substitutions Accepted

Reviewed by/date: \_\_\_\_\_

Comments: \_\_\_\_\_

Subcontractor's signature and date: \_\_\_\_\_

Contractor's signature and date: \_\_\_\_\_

COPY TO:

- ☐ FILE ☐ OWNER ☐ CONTRACTOR
- ☐ ENGINEER ☐ \_\_\_\_\_



115 E. Main Street  
Round Rock, Texas 78664  
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(512)218-0077-fax

SEPTEMBER 29, 2017

**END OF SECTION**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 10 - SCHEDULE OF VALUES****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. The Contractor shall breakdown the final Schedule of Values to be used for pay application into the following minimum categories.
- B. **ALL CATEGORIES SHALL HAVE APPROPRIATE MATERIAL AND LABOR BREAKDOWN.**
- C. Definitions:
  - 1. Service: Conduit for utility company and conduit and wire from utility transformer to main switchboard.
  - 2. Feeders: Include all conduit and wire serving transformers and panelboards.
  - 3. Branch Circuit: Any circuit from a panelboard to a utilization device.
  - 4. Gear: Main switchboard, panelboards, transformers, disconnects, etc.
  - 5. Site conduit voice/data.

**1.02 SCHEDULE OF VALUES**

- A. Mobilization
- B. Utility Company Fees
- C. Service - Wiring and Conduit
- D. Site Light Fixtures, Wiring and Conduit
- E. Gear
- F. Site Lighting Fixtures
- G. Branch Circuit - Wiring and Conduit
- H. Feeders - Wiring and Conduit
- I. Testing/Labeling of Equipment
- J. Record Drawings and O&M Manuals (\$1500 minimum)

**END OF SECTION**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 19 - WIRE AND CABLE****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide a complete system of conductors in raceway systems as shown on the drawings and hereinafter specified. Route all wire through an approved raceway unless otherwise indicated, regardless of voltage application.
- B. Provide 200% neutral conductors to all panels with 200% neutral specified. Reference Panel Schedules.
- C. Provide individual neutrals for each circuit, no shared neutrals allowed.**
- D. No de-rating of neutrals allowed.**

**1.02 STANDARDS**

Provide conductors in accordance with the applicable sections of UL and IPCEA Standards.

**1.03 SUBMITTALS**

- A. Furnish Engineer shop submittals for each type of wire and cable.
- B. Provide shop submittals which includes the following information:
  - 1. Insulation type.
  - 2. Insulation temperature rating.
  - 3. Manufacturer

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Wire and Cables: (600 Volts)
  - 1. Provide copper wire and copper ground conductors **only**. Conductors shown on plans are thusly sized. **No aluminum conductors** will be allowed unless specifically noted.
    - a. Minimum wire size for branch circuits shall be #12, however, #14 may be used for motor control circuits where specified on the drawings.
    - b. All conductors #12 and smaller shall be solid and #10 and larger shall be stranded.
  - 2. Provide copper conductors of annealed, 98 percent conductivity soft drawn copper. Provide stranded conductors for control circuits.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- B. Metal clad cable shall not be acceptable except from junction box to light fixture, maximum 6 feet in length.**
- C. Metal-clad cable shall not be acceptable for receptacles.**
- D. Insulation: (600 Volts)
1. Provide all conductor insulation types rated for wet and dry locations and approved by the National Electrical Code for the particular application. Provide all wire and cable with the following (or better) insulation classes:
    - a. All feeders and branch circuits are to be dual-rated Type THHN/THWN **copper** conductors.
    - b. Insulation rated for operation at 600 volts.
    - c. In areas where the temperature will exceed 167°F, provide wire rated 105°C. minimum and a type approved by the local code. Include any wiring within three feet (3') horizontally or ten feet (10') above any heating appliance.
  2. Color code in accordance with the wiring diagrams furnished with equipment. All wiring for control systems to be installed in conjunction with mechanical and/or miscellaneous equipment. Color code by line or phase all branch circuit wiring including circuits to motors and feeders as follows: Wire No. 10 and smaller shall be factory color coded. Wire No. 8 and larger may be color coded by color taping within six inches (6") of exposed ends. **Color coding for each nominal voltage shall be consistent throughout building from point of origination to the termination point including tap conductors to luminaire. Mixing of colors between voltages will not be allowed.**

120/240 Volts

Phase A - Red  
Phase B - Black  
Phase C - Orange  
Neutral - White  
Ground - Green  
(Orange is High Leg)
- E. Wire and Cable: (50 volts or less)
1. Provide copper wire, minimum size #18 AWG for controls, #18 AWG minimum for fire alarm and #20 AWG minimum for communications. All wire and cable shall be solid. Stranded conductors are not acceptable.
  2. All conductors shall be routed in conduit or shall have an insulation approved for plenum installation, unless otherwise noted.
- F. ROMEX not allowed.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**PART 3 - EXECUTION****3.01 INSTALLATION**

- A. Unless otherwise indicated wiring size noted on the drawings extend for the entire length of a circuit. Install wire in raceways in strict conformance with the manufacturer's recommendations. Use a UL approved wire-pulling lubricant. Strip insulation so as to avoid nicking of wire.
- B. Wire Connections and Devices:
  - 1. Provide all terminating fittings, connectors, etc., of a type suitable for the specific cable. Make all fittings up tight. Make up all terminations in strict conformance with manufacturer's recommendations using special washers, nuts, etc., as required.
  - 2. Connect No. 8 and larger wire to panels and apparatus with properly sized, solderless, or compression lugs or connectors.
  - 3. Join No. 10 and smaller wire by twisting tight and applying UL listed twist-on connectors.
  - 4. Leave at least an eight inch (8") loop of wire for ends at each outlet box for the installation of fixtures or devices.
- C. Flashover or insulation value of joints shall equal that of the conductor. Provide connectors rated at 600 volts for general use and 1000 volts for use within fixtures.
- D. Grouping shall be 3 Hots and 3 Neutrals or 6 Hots max. Derating shall be based on the 90 degree chart of NEC 310-16 and table 310.15 (B)(2)(2).
- E. Where the distance between the supplying panel and the first branch circuit receptacle, light fixture or equipment is more than 100 feet, upsize wire to allow for maximum of 3% voltage drop for actual routing of conduit to device.
- F. Wiring for emergency systems shall be kept entirely independent of all other wiring and equipment as required by Article 700 of the NEC.
- G. Mechanically protect conductors by installing in raceways. Do not install the conductors until raceway system is complete and properly cleaned. Use an approved wire-pulling compound when pulling conductors. Wiring pulling compound shall be listed and as recommended by the conductor manufacturer. Do not bend any conductor either permanently or temporarily during installation to radii less than four times the outer diameter of the insulated conductors. Do not exceed manufacturer's recommended values for maximum pulling tension.
- H. Pull conductors simultaneously where more than one conductor is being installed in the same raceway.
- I. Use pulling means including fish tape, cable, rope and basket weave wire/cable grips which will not damage cables or raceway.
- J. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Standard 486A.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- K. Neatly and securely bundle all conductors in enclosures using nylon straps with a locking hub.
- L. At least 6 inches (measured from the finished surface) of each conductor shall extend outside a box's opening.

## 3.02 SPLICES AND TERMINATIONS

- A. Splices shall be kept to a minimum.
- B. Splices shall be made in junction and/or pull boxes.
  - 1. Splices in conduit fittings (i.e., conduit bodies), and in panelboards are not acceptable.
- C. All materials shall prevent corrosion or electrolysis between dissimilar metals.
- D. Use terminal blocks within a junction box for all splices of No. 6 and larger conductors.
- E. Use mechanical, crimp or compression type connectors for terminations of stranded conductors.

## 3.03 CONDUCTOR SIZING

- A. Install conductor size required by the more stringent requirements of the drawings or specifications.
- B. Install No. 10 AWG conductors the entire length of the circuit for single-phase, 120-volt, 20-ampere branch circuits for which the distance from panelboard to the first outlet is more than 100 feet.
- C. Install No. 10 AWG conductors the entire length of the circuit for single-phase 277 volt, 20-ampere branch circuits for which the distance from panelboard to the first outlet is more than 200 feet.
- D. General use circuit numbers may be changed. Equipment circuits have numbering to balance loads. This contractor is responsible for maintaining a balanced load and recording the actual circuit numbers.
- E. Comply with ampacity adjustment factors as required by the NEC Article 310-16.

## 3.04 TESTING

- A. Prior to energizing feeders, perform insulation resistance tests at 500 Volts D.C. for 30 seconds on each cable with respect to ground and adjacent cables. Maintain the following log for feeder tests:

FEEDER DESCRIPTION: \_\_\_\_\_

TESTER'S NAME: \_\_\_\_\_

TEST INSTRUMENT SERIAL #: \_\_\_\_\_

TEST DATE: \_\_\_\_\_

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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## RESISTANCE:

A-BA-CA-GB-CB-GC-G

- B. Test all circuits for proper neutral connections.
- C. Upon completion of all testing, prepare a detailed report of all voltage and insulation resistance measurements. Deliver report to Engineer with request for final inspection.

**END OF SECTION**



## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 26 – GROUNDING AND BONDING****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide a complete grounding system in strict accordance with Article 250 of the National Electrical Code and as hereinafter specified and shown on the Drawings.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Provide copper clad 5/8" x 8 ft. - 0" long ground rods, appurtenances, bonding plates, clamps, connectors and grounding conductors as required. Furnish rods to which the copper cladding is permanently and inseparably bonded to a high strength steel core.

**2.02 CONNECTORS**

- A. Provide exothermic weld type ground connections for concealed, underground, and concrete encased ground connections.
- B. Exposed connections may be made with copper or bronze bolted or compression lugs.

**2.03 INTER-SYSTEM GROUNDING BUS-BAR (communications)**

- A. Provide surface mounted terminal blocks sufficient to except 20 individual conductors of sizes 14 AWG thru 4 AWG.

**2.04 CONDUCTORS**

- A. Furnish copper conductors.
- B. Furnish 600-volt, insulated conductors for equipment grounding.
- C. Size the system grounding electrode conductors to comply with NEC section and table 250-66, unless shown larger.
- D. Size the main and separately derived system bonding jumpers to comply with NEC section 250-28 (D).
- E. Size equipment grounding conductors to comply with NEC section and table 250-122, unless shown larger.

**PART 3 - EXECUTION****3.01 INSTALLATION**

- A. Properly ground all service equipment conduit systems, supports, cabinets, equipment, motor frames, fixtures, etc., and the grounded circuit conductor in accordance with the latest issue of the National Electrical Code. Provide all bonding jumpers and wire, grounding bushings, clamps, etc., as required for complete grounding. Route ground conductors to provide the

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

shortest and most direct path to the ground electrode system. Bond conduit if made of current conducting material. All ground connections shall have clean contact surfaces. Bond the service equipment to a grounding electrode as shown on the Drawings.

- B. Provide a grounding type bushing for all feeder and branch circuit conduits which do not have a grounding conductor and individually bond this raceway to the enclosure's ground bus or lug.
- C. Provide a grounding type bushing on the end of each isolated section of metal conduit and bond the conduit to the equipment grounding conductor, or using a conductor of the same size, bond directly to the equipment ground buss of the equipment at the end of the run.
- D. Make single or dual connections to ground rods, plates, and other buried connections by the exothermic process (Cadweld) or Burndy Hyground TM Compression Systems and "hammer tested" to insure that a good bond has been made. Alternatively, all below grade compression grounding systems must meet all UL467, CSA, IEEE837 test requirements and conform to the National Electrical Code Standards. The material at the connectors shall be pure wrought copper extrusions, rod and seamless tubing and be identical material to the conductor. Connectors must be of heavy duty design and be of range taking design to accept conductor ranges of #6 solid to 500 Kcmil plus 5/8" ground rods. Compression connectors need to be compressed with system engineered tooling which makes a circumferential or round crimp. Hex crimp is not acceptable due to sharp flashes and spurs that may occur. Each connector must be clearly marked with catalog number, conductor size and installation die information. Inspection ports must be provided on lug terminations and splices. The system must emboss all the appropriate die index numbers on all connectors after completion of the crimp. Connectors must be prefilled with penetrox copper type oxidation inhibitor and be individually sealed in clear polyethylene sheet to keep out dirt and contamination.
- E. Drive grounding electrodes as required. Where rock is encountered, grounding plates of copper, 1/4-in. x 24-in. x 24-in may be used in lieu of grounding rods. Plates must be installed at 36" minimum below finished grade.
- F. Connect grounding electrode conductor to building steel and metallic waterline per NEC 250-81. Allow a minimum of 25 feet of grounding conductor in foundation footing and make 3 connections to Rebar. Connections shall utilize an acceptable compression method with connectors listed for contact with respective metal types.
- G. Provide a grounding terminal pad in all panelboards, switchboards, and other electrical equipment.
- H. Directly ground to the work piece welding machines used in construction. The use of the building or equipment steel or conduits of any kind as a common ground point is not allowed under any conditions. Contractor is responsible for any electrical pieces of equipment damaged by not using the welder grounding method described above.
- I. Provide a green insulated grounding conductor in all conduit serving receptacles and/or equipment. Refer to panelboard schedules for sizing.
- J. Ground all receptacles to outlet box with a conductor.
- K. Flexible conduit will not be allowed as a grounding means.
- L. Install metallic fittings on clean contact surfaces to ensure electrical conductivity.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- M. Tighten connectors, terminals, screws and bolts, in accordance with manufacturer's published torque tightening values or comply with torque tightening values specified in UL 486A to assure permanent and effective grounding.
- N. Apply a corrosion-resistant finish to places where factory applied protective coatings have been damaged.
- O. Protect all exposed, grounding electrode conductors with Schedule 40 PVC nonmetallic conduit.
  - 1. Grounding electrode conductors shall not be protected with metallic materials.

**3.02 GROUNDING ELECTRODE SYSTEM**

- A. At each building's service or disconnecting means install a grounding electrode system which includes;
  - 1. A concrete encased electrode connected to the concrete reinforcing bars and;
  - 2. The building structural steel and;
  - 3. The building's metal underground (10 ft.) water pipe.
    - a. This connection must be within the first 5 ft. of the water pipe's entrance into the building. Water piping cannot be the sole ground and must be supplemented.
  - 4. Other electrodes such as a rod, plate or ring may be used to supplement but cannot be used as a substitute.
- B. At each grounded separately derived system install a grounding electrode conductor to connect the grounded (XO-neutral) conductor to;
  - 1. The nearest one of the following electrodes:
    - a. An effectively grounded structural steel member or;
    - b. An effectively grounded metal underground (10 ft.) water pipe.
      - 1) This connection must be within the first 5 ft. of the water pipe's entrance into the building.
  - 2. If neither of these is available, install a 3/0, copper, common grounding electrode conductor from the building's service or disconnecting means. Connect taps from this common grounding electrode conductor to the separately derived system's grounded (XO-neutral) conductor.

**3.03 SYSTEM BONDING****A. SERVICES**

- 1. Install a main bonding conductor between the service ground bus and the grounded (neutral) bus-bar.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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## B. SEPARATELY DERIVED SYSTEMS

1. Install a bonding jumper between the equipment ground bus and the separately derived electrical system's (transformer, UPS, central battery/inverter or generator) grounded (XO-neutral) bus.

## 3.04 ADDITIONAL BONDING

- A. Install 3/0 AWG bonding jumpers around all structural metal expansion joints.
- B. Each building's interior metal water piping system which does not qualify to be used as a grounding electrode shall be bonded to the building's service or disconnecting means.
- C. Bond the grounded (XO-neutral) conductor of each separately derived system to the nearest available point of the interior metal water piping system(s).
  1. When the structural steel is being used as the grounding electrode for the separately derived system the interior metal water piping system(s) may be bonded to the structural steel.
- D. Install bonding jumpers around raceway expansion joints.
- E. Install bonding jumpers around insulated water pipe joints.
- F. Install a bonding jumper between all grounding electrodes used for communications, radio and television or antenna systems and the building's grounding electrode system.

## 3.05 COMMUNICATION GROUNDING

- A. Provide a surface mounted, inter-system grounding bus-bar at the service equipment or a separate building's disconnecting equipment and in each communications room.
- B. At the service or separate building's disconnecting means, provide an insulated 6 AWG, stranded conductor to connect the inter-system grounding bus-bar to the equipment ground bus.
- C. At communications rooms, provide an insulated 6 AWG, stranded conductor to connect the inter-system grounding bus-bar to the building's structural steel.

## 3.06 EQUIPMENT GROUND

- A. Raceways shall not be used as the sole equipment ground.
- B. Bond the equipment grounding conductors to all boxes and enclosures.
- C. Each receptacle shall be bonded to its respective device box. The connection shall be made by means of a bonding jumper between the device and the box. Where the receptacle mounting yoke is designed and listed for the purpose of grounding; the bonding jumper may be omitted. This does not substitute for the need of grounding the outlet box.
- D. Each isolated ground receptacle shall have an isolated ground conductor installed complete from receptacle to the isolated ground bus in the panelboard. No other grounding connections shall be made to these receptacles, specifically connections to the device box or raceway system.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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**3.07 TESTING**

- A. Following completion of installation, test system ground for continuity and test resistance to ground by "fall of potential" method and all feeders or sub-feeders with appropriate meggers, or other approved instruments and methods, to determine ground and insulation resistance values.
- B. Submit logs of values obtained, nameplate data of instruments used and instrument calibration data prior to final inspection. Instruments used are subject to acceptance.

**END OF SECTION**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 33 - RACEWAYS****PART 1 - GENERAL****1.01 SCOPE OF WORK**

Provide a complete conduit system as shown on the drawings and as hereinafter specified.

**1.02 STANDARDS**

Conform with the latest requirements of the NEMA, the National Electrical Code, and be UL listed.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Rigid Metal Conduit (RMC): Hot-dip galvanized, threadable steel raceway, galvanized after fabrication. Fittings shall be malleable iron, either cadmium plated or hot-dip galvanized.
- B. Intermediate Metal Conduit (IMC): Conduit shall be similar to rigid steel conduit except thinner wall. Fittings shall be malleable iron, either cadmium plated or hot-dip galvanized.
- C. Electrical Metallic Tubing (EMT): EMT shall be made of hot-dip galvanized strip steel. Fittings shall be die cast compression or set screw type.
- D. PVC - Schedule 40 and Schedule 80 polyvinyl chloride conduit (PVC Duct) shall be UL rated. Conduit fittings and cement shall be produced by the same manufacturer and approved for such use.
- E. Flexible Metal Conduit (FMC): Spirally wound continuously interlocked zinc coated strip steel. Fittings shall be die cast zinc, either screw-in or squeeze type.
- F. Flexible Conduit (LFMC): Liquid-tight (vibration and/or wet areas) fabricate from continuous lengths of spirally wound galvanized steel strip interlocked with a gray polyvinyl chloride cover extruded over the core to make the conduit liquid tight, oil proof and bendable to a small radius. Fittings shall be compression type, die cast zinc, with insulated throat.
- G. Metal-Clad Cable (MC): Galvanized interlocking steel armor. 600 volt, type THHN/THWN, integrally colored insulation. Size #12 AWG or #10 AWG, copper conductors. Fittings shall be listed for MC usage and include anti-short bushings. Reference Section 3.03 for acceptable uses.
- H. Metal Wire-ways.
  - 1. Furnish with wire retainers on not less than 12 inch centers. All screws installed towards the inside shall be protected to prevent possible wire insulation damage.
  - 2. The finish shall be the manufacturers' standard color and shall consist of not less than two coats of enamel over a rust-inhibiting prime coat.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- I. Surface Metal Raceway (2000 series).
  - 1. Surface metal raceway shall consist of a single compartment base, blank cover, and appropriate fittings to complete the installation per the electrical drawings.
  - 2. The base and cover shall be manufactured of steel and finished with a white color.
  - 3. Approximately  $\frac{3}{4}$ " deep,  $1\frac{1}{4}$ " high and 5' sections.
- J. Non-Metallic Multi-outlet Assemblies (5400 series).
  - 1. Surface raceway system shall consist of a dual compartment raceway base, twin cover, appropriate fittings, outlets and device mounting plates necessary for a complete installation.
  - 2. Duplex receptacles and data outlets ("activate connectivity inserts") mounted at 24" centers or as noted on plans. Connect adjacent receptacles on alternate circuits.
  - 3. Approximately  $1\frac{3}{4}$ " deep,  $5\frac{1}{4}$ " high and 8' sections with equal compartments.
  - 4. The finish shall be white color and shall consist of not less than one coat of enamel over a prime coat.

**PART 3 - EXECUTION****3.01 GENERAL INSTALLATION REQUIREMENTS**

- A. Raceway and cable usage and installation shall conform to the appropriate article of the National Electrical Code (NEC), as a minimum.
- B. Do not install conduit that is crushed or deformed in any way.
- C. Provide a nonmetallic (nylon, polypropylene, or approved equal) drag line of suitable strength in spare conduits and telephone conduits. Tightly plug spare conduits at both ends.
- D. Do not pull wire into conduit system until the conduit system is complete in all details; in the case of concealed work, until all rough plastering or masonry has been completed.
- E. No wiring systems of any type shall be installed in ducts used to transport dust, loose stock, or flammable vapors.
- F. No wiring system of any type shall be installed in any shaft containing ducts used for vapor removal or for ventilation of commercial-type cooking equipment.
- G. Fasten and support the wiring method employed to the permanent structure using listed straps with corrosion resistant hangers and fasteners.
- H. Ceiling system wires or lay-in type ceiling grid components shall not be used as a means of support.
  - 1. Independent support wires and associated fittings which are installed in addition to the ceiling system support wires, shall be permitted: (300.11.A)

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

2. Independent wires within the cavity of a fire-rated floor-ceiling or roof-ceiling assembly shall be distinguishable by color. (300.11.A.1)
3. Independent support wires that provide support for device boxes shall be secured at both ends. (300.11.A).
- I. Bends shall be made with factory elbows or field bent. Field bends shall be made using equipment designed for the particular raceway material and size. Bends shall be free from dents or flattening.
- J. Conduit bodies may be used in lieu of conduit elbows where covers will be accessible and ease of installation and appearance warrants their use.
- K. Install expansion-deflection fittings where raceways cross structural expansion joints or where required to compensate for thermal expansion and contraction. Install bonding jumpers across expansion-deflection fittings in metal raceway systems.
- L. Openings through fire-resistant-rated or sound-resistant-rated walls, partitions, floors or ceilings shall be fire-stopped by installing raceways or cables through sleeves set through the walls, partitions, floors or ceilings and fire-sealing all openings and voids around the sleeves, raceways and cables.
- M. Do not drill or pierce structural steel members under any circumstances without the Engineer's specific approval.
- N. Minimize roof penetrations by routing conduit through the equipment roof opening. If roof penetration is necessary, coordinate with the Architectural Specifications and penetrate as directly below the equipment disconnect or wiring connection point as possible. Do not use flexible conduit in a pitch pan.
- O. Arrange all conduits to drain away from the building.
- P. Perform all necessary excavation and backfilling. Tamp backfill in six inch (6") layers to original grade, moistening as required for proper compaction. All backfilling shall be free from harmful materials. Provide shoring, bracing, and de-watering as necessary. Remove all excess and materials not suitable for backfill from the site. Provide barricades to prevent endangering the public. Provide warning beacon lighting at night to adequately mark all excavations.
- Q. A tracer tape wire shall be installed in all trenches which do not contain conductive conductors within them. This will include future use raceways, optical fiber, etc.
- R. Raceway systems shall be complete before installing conductors.
- S. The interior of all raceways shall be cleaned before installing conductors.
- T. Terminate future use raceways with a capped coupling within an accessible area.
- U. Workmanlike manner: Type MC cable shall be installed in a neat and workmanlike manner. Cable shall not cross other cable or have excess slack. Cable that is installed vertically, must be plumb with the vertical framing of the structure.
- V. Bundling of cable is limited to three cables for each support ring.



## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- W. Type MC cable may be only supported by fasteners or clamps that are approved and UL tested for cable support.

## 3.02 INSTALLATION BELOW GRADE

- A. Minimum size raceway is 3/4 inch.
- B. Provide rigid galvanized steel conduit or PVC where conduits are installed in concrete floor slab  $\frac{3}{4}$ " maximum. Maintain proper concrete coverage as directed by structural engineer. PVC conduit shall not penetrate slab above finished grade.
- C. Provide rigid galvanized steel or PVC conduit where conduits are installed below grade.
- D. Swab clean all conduits before cable installation. Waterproof all conduit joints after cable installation.
- E. Provide conduit wall sleeves for all conduits penetrating walls, grade beams, etc. and other locations shown on the Drawings.
- F. Where required to bend PVC ducts to satisfy indicated routing, preform ducts to allow ends of duct sections to be in a straight alignment. Accomplish preforming of ducts by utilizing proper duct heater units.
- G. Perform all necessary excavation and backfilling for proper installation of work. Take precautions not to excavate below depth required. Backfill trenches with sand, 3" below conduits and 3" above. Tamp remainder of backfill in six inch (6") layers to original grade, moistening as required for proper compaction. All backfilling shall be free from harmful materials. In areas to be paved, compact to density to receive pavement. Where pavement is broken for the installation of conduit, repair to original condition. Provide shoring, bracing, and de-watering if necessary for installation of work. Remove from site all materials encountered which are not suitable for backfill.
- H. When and if damage is caused to underground utility lines or structures, above ground utility lines or structures, or other purposeful surface conditions, either on or off the right-of-way, make immediate temporary repairs. At the first opportunity, make permanent repairs which are acceptable to the Owner. All such repairs shall be made at the Contractor's expense.
- I. Where necessary, provide barricades around open excavations to prevent endangering the public. Provide warning beacon lighting at night to adequately mark all excavations.
- J. Where conduits embedded in concrete floor or roof deck cross expansion joints, they shall be joined together using O.Z. Gedney type DX expansion fittings and bonding jumpers. Straight runs of conduit over 150' long shall have O.Z. Gedney Type AX expansion fittings installed to minimize movement. Fittings shall be installed at a maximum of 150' on center.
- K. Where horizontal runs of conduit transition to vertical and continue above finished grade or finished floor; the transition shall be made with a 90 degree long radius sweep. The sweep may be PVC (2" and smaller) and shall be RGS (2-1/2" and larger). No PVC conduit will be allowed above finished grade or finished floor.
- L. **CONDUITS RUN BELOW FINISHED FLOOR SHALL NOT PENETRATE GRADE BEAMS. UNLESS APPROVED BY STRUCTURAL ENGINEER.**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

## 3.03 PERMITTED RACEWAY USAGE:

## A. Raceway transitions at all locations;

1. Rigid nonmetallic conduit runs from below grade level shall transition to galvanized rigid steel or intermediate steel conduit, wrapped with corrosion protection tape, prior to exiting at grade level and continue thereafter in accordance with their usage requirements.
  - a. Caulk concrete-to-conduit joints with a silicone rubber compound.
2. Continue the more protective conduit type into an area where a less protective conduit type is permitted for a distance of not less than 1 foot.

## B. Electrical metallic tubing at;

1. Interior locations when;
  - a. Concealed within walls and ceilings or; **do not use in the mortar filled cells of concrete masonry units.**
  - b. Exposed and more than 8 feet above finished floor or;
  - c. Exposed and more than 3 feet above finished floor in electrical or mechanical rooms or;
  - d. Exposed and more than 1 foot above a finished attic or mezzanine floor.
  - e. Do not use where exposed to standing water or other continuously damp or wet areas.
2. Exterior locations when;
  - a. More than 10 feet above the finished ground surface or;
  - b. More than 1 foot above the finished ground surface within a lockable equipment yard or;
  - c. In the crawl space below a building with the 1<sup>st</sup> level elevated.

## C. Rigid or intermediate metal conduit at;

1. Interior locations when;
  - a. Exposed, in other than electrical or mechanical rooms, and installed less than 8 feet above finished floor or;
  - b. Exposed in electrical or mechanical rooms and installed less than 3 feet above finished floor or;
  - c. Exposed and less than 1 foot above a finished attic floor or mezzanine floor.
2. Exterior locations when;
  - a. Less than 10 feet above the finished ground surface or;

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

---

- b. Less than 1 foot above the finished ground surface within a lockable equipment yard.
    - 1) Malleable iron straps will be required at these locations.
- D. Rigid metal and intermediate metal conduit wrapped with corrosion protection tape or rigid nonmetallic conduit at;
  - 1. Underground locations with a  $\frac{3}{4}$ " minimum size when;
    - a. Located outside of the building line or;
    - b. Located below a concrete slab on grade or;
    - c. Located below a beam of a slab on grade or.
    - d. Located within a concrete slab on grade where the outside diameter is equal to or less than 20 percent of the slab thickness.
      - 1) Seal conduit ends at each building entry.
  - 2. Below grade;
    - a. The minimum size shall be  $\frac{3}{4}$  inch.
    - b. Seal conduit ends at each building entry.
    - c. Coordinate covering with Structural Engineer.
- E. Rigid nonmetallic conduit for;
  - 1. An exposed grounding electrode or bonding conductor below 10 ft. to guard from physical damage.
- F. Flexible metal conduit in;
  - 1. Dry interior locations with a minimum length of 2 feet and maximum length of 6 feet to;
    - a. The final connection of transformers, motors and vibrating equipment.
- G. Flexible metal conduit or metal-clad cable for light fixtures or ceiling mounted devices.
  - 1. Dry or damp interior locations with a maximum length of 6 feet to;
    - a. The final connection of light fixtures; or
    - b. The final connection of ceiling mounted outlet boxes or.
- H. Flexible metal conduit is not allowed for any technology rough-in, must be EMT.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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- I. Liquid-tight flexible metal conduit in;
  - 1. All locations with a minimum length of 2 feet and maximum length of 6 feet for;
    - a. The final connection of all liquid pump motors and associated control connections or;
  - 2. Damp or wet interior and all exterior locations with a minimum length of 2 feet and maximum length of 6 feet to;
    - a. The final connection of transformers, motors, and vibrating equipment.

**END OF SECTION**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 34 - OUTLET BOXES, PULL BOXES AND JUNCTION BOXES****PART 1 - GENERAL****1.01 SCOPE OF WORK**

Provide outlet boxes in accordance with the National Electrical Code at locations shown on the Drawings and hereinafter specified.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Provide standard hot-dipped galvanized pressed steel boxes, minimum 4"x4" by 1-1/2" deep. Use 4 11/16" by 2 1/8" deep box when using 1" conduit.**
- B.** Cabinets with screw covers or as specifically noted for junction or pull boxes larger than 150 cubic inches.
- C.** All junction, pull and splice boxes to conform to NEC Article 370.
- D.** All metallic boxes are to have an internal means of grounding.
- E.** Flush mounted wall and finished ceiling boxes.
  - 1. Within framed, drywall, plastered or tile covered walls, with 3/4" max. raceway, furnish galvanized steel, 4" square, minimum 1 1/2 inch deep boxes with a raised tile cover and a far-side support.
  - 2. Within drywall or plaster covered or suspended ceilings, with 3/4" max. raceway, furnish galvanized steel, 4" square, minimum 1 1/2 inch deep boxes with a raised tile cover.
  - 3. Within masonry walls, with 3/4" max. raceway, furnish galvanized steel boxes, minimum 2-1/2-inch deep.
- F.** Surface mounted boxes.
  - 1. Mounted at or below 10' above the finished surface, 3/4" max. raceway size, furnish cast aluminum boxes with a surface mounted cover.
- G.** Junction and Pullboxes.
  - 1. Furnish, minimum 4" square, 1 - 1/2" deep, galvanized steel junction and pullboxes where installation conditions warrants their use. Boxes shall be furnished with screw-on covers or hinged covers. Covers shall be such that it can easily be handled by one person. All hardware and fasteners shall be galvanized steel.
- H.** Flush mounted floor boxes.
  - 1. Furnish adjustable, concrete tight, corrosion resistant, duplex type. Compartmental type for combination receptacle and communication. The coverplate shall be brass with hinged flap and carpet flanges. The minimum below ground/slab conduit size shall be 3/4".

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- I. Underground boxes.
  - 1. U. L. listed.
  - 2. Pre-cast, polymer concrete.
  - 3. Minimum size of 10" W X 10" L X 10" H.
  - 4. Bolt down cover.
  - 5. Stainless steel hex-bolts and replaceable nuts.
  - 6. Minimum load rating of 5,000 lbs. (select by location)

**PART 3 - EXECUTION****3.01 INSTALLATION**

- A. Through wall boxes and boxes mounted back-to-back are not permitted. Provide 8 inch minimum separation in order to minimize sound transmission.
- B. Set flush with wall or ceiling finish in accordance with N.E.C., Article 370. Extension sleeves are not permitted for boxes improperly set.
- C. Verify location of outlets prior to rough-in. When necessary, relocate outlets to avoid interference with other work or equipment. Where fixtures are mounted on or in an accessible type ceiling, provide a junction box and extend flexible conduit to each fixture. Fit outlet boxes in finished ceilings or walls with appropriate covers.
- D. Where more than one (1) switch or device is located at one (1) point, unless otherwise indicated, provide gang boxes and covers. When the voltage between switches exceeds 300 volts, provide barrier partitions between adjacent switches located in the same box. Sectional switch boxes or utility boxes not permitted.
- E. Provide pressed steel boxes for all interior work. Provide square boxes with plaster rings. Provide appropriate size multi gang box for group devices. Single gang boxes screwed together is not acceptable.
- F. Where boxes are installed in masonry walls, use only approved masonry type boxes for single gang and multi-ganged applications. Standard 4" square boxes with plaster rings are not allowed. Caulk around joint between receptacle box and masonry. Verify color with architect.
- G. Do not drill and pierce structural concrete members and structural steel without prior approval of the Engineer.
- H. Mount all boxes plumb.
- I. Mount boxes completely rigid without conduit or finished wall support.
- J. Where outlets are installed in steel stud type systems, provide additional cross bracing, bridging, and/or straps as required to make the outlet completely rigid. Support boxes with "caddy screw gun brackets", "caddy box mounting bracket", "caddy quick mount box brackets" or acceptable alternates.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- K. **Dimensions are from finished floor to centerline of outlets.** Adjust heights of outlets in masonry walls from that indicated so that receptacles are not lower than 16" A.F.F. and switches are not higher than 48" A.F.F. Outlet height so adjusted shall be consistent. Unless otherwise indicated, mount outlets at the following heights:
- |                                        |                      |
|----------------------------------------|----------------------|
| Wall switches/Wall Phone               | 4 ft. - 0 in.        |
| General Duplex receptacles             | 1 ft. - 6 in.        |
| Receptacles at Millwork                | verify with millwork |
| Receptacle for Refrigerators           | 2' – 6"              |
| Weatherproof duplex receptacles        | 1 ft. - 6 in.        |
| Telephone/Data outlets/Teacher Station | 1 ft. - 6 in.        |
| Telephone/Data at millwork             | verify with millwork |
| Garages/Apparatus Bay receptacles      | 2 ft. - 0 in.        |
| Clocks                                 | 8 ft – 0 in          |
| Access Point Data Drops (wall mounted) | 10 ft – 0 in         |
- L. For boxes installed above ceilings, label the box cover with the circuit numbers installed. Labeling shall be with a permanent, black marker with broad tip.
- M. Boxes installed in rated walls shall have a minimum horizontal separation of 24". Maximum surface area of boxes shall not exceed 16 square inches.
- N. Completely envelope floor boxes in concrete except at the top. Increase slab thickness at boxes if required for bottom covering. Adjust covers flush with finished floor.
- O. Where outlets are indicated adjacent to each other, mount these outlets in a symmetrical pattern with all tops at the same elevation. Where outlets are indicated adjacent, but with different mounting heights, line up outlets to form a symmetrical vertical pattern on the wall.
- P. Install recessed boxes flush to the finished wall or ceiling line by the use of manufactured tile rings to extend the box forward.
- Q. Boxes to which light fixtures or pendants are mounted shall NOT contain any conductors foreign to the operation of such light or pendant application. Removal of lights, pendants and cord drops to access other branch circuits is NOT acceptable.
- R. Where fixtures are mounted on or in an accessible type ceiling, provide a junction box and extend flexible conduit to each fixture.
- S. Install knockout closures to cap all unused openings.
- T. All boxes shall be installed with coverplates.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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- U. Install boxes as required to facilitate conductor installation in raceway systems. Junction and pull boxes shall be sized to accommodate conductors, splices, devices and fittings.
- V. Raceways are NOT allowed to terminate to extension rings.
- W. Install boxes so that covers are accessible and easily removable after completion of the installation. The minimum clear space in the direction of the box opening shall be 36".
- X. Include suitable access doors, with the proper fire rating, for boxes above inaccessible ceilings. Boxes shall be located within reach of the access.
- Y. Install underground boxes with cover slightly above finished grade.
- Z. **Spray paint J-Boxes red for Fire Alarm Systems. All other special system J-Boxes to be painted white.**

**END OF SECTION**



## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 05 80 - EMPTY RACEWAY ROUGH-IN****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. The Contractor shall furnish and install all equipment, accessories and material required for the rough-in of empty raceway systems in accordance with the specifications and drawings.
- B. Rough-in raceway sections for indicated devices and outlets in all walls, floors and underground sufficient to facilitate installation of the following systems without cutting or otherwise damaging walls, ceilings or floors installed in this contract:
  - 1. Communications
  - 2. Fire Alarm
  - 3. Television
  - 4. Data
  - 5. Security
  - 6. Controls
- C. **ALL CONDUITS SHALL HAVE A PULL CORD INSTALLED. INSTALL BLANK COVERS ON ALL UNUSED JUNCTION BOXES.**
- D. **3/4" CONDUIT MINIMUM.**
- E. Electrical Contractor shall provide all conduit, junction boxes and outlet boxes for HVAC controls as specified in Section 26 05 00, 1.03, D. Coordinate locations and requirements with Mechanical Contractor and Controls Contractor prior to rough-in. Provide outlet box for sensor and conduit to above accessible ceiling. Provide conduit for all wiring in areas with no ceiling. Provide conduit from outdoor units to above accessible ceilings. Provide conduit between make-up air units and associated condensing units.
- F. **REFERENCE TECHNOLOGY DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS CONCERNING CONDUIT ROUGH-IN FOR VOICE/DATA SYSTEMS.**
- G. Floor mounted devices: Provide pathway to nearest accessible ceiling for all floor mounted devices called for in this specification.

**1.02 QUALITY ASSURANCE**

- A. Construct each item of equipment, including parts and accessories, in a workmanlike manner, using new materials or the best quality obtainable for the purpose intended. Design and build materials in accordance with the best practices of the electrical industry.
- B. Comply with all requirements of serving utility.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

---

**PART 2 - EXECUTION****2.01 INSTALLATION**

- A. Interior conduit systems shall have runs less than 100 feet from point to point.
- B. Provide accessible pull boxes when necessary. Provide blank covers for all outlet boxes, unless otherwise noted.
- C. All bends for telephone and cable television service shall be 36 inch radius, minimum.
- D. Provide outlet box in wall at 18" A.F.F. (UON) and conduit with string to above accessible ceiling location. Provide insulated bushing on end of conduits.

**END OF SECTION**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 24 16 - BRANCH CIRCUIT PANELBOARDS****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide branch circuit panelboards as shown on the Drawings and as herein specified.
- B. Panelboard feeders are sized from the "Panelboard Connection Schedule". When a panel is fed from a transformer use the "Transformer Connection Schedule" for feeder size. When there is a conflict between the sizes, use the largest of the two.
- C. This section specifies the furnishing and installation of molded case, thermal-magnetic circuit breakers. Electronic, solid-state trip circuit breakers are NOT allowed.
- D. Maximum circuits per panelboard section shall be 42 circuits.

**1.02 STANDARDS**

- A. Provide U.L. label.
- B. Comply with applicable standards of NEMA and the NEC.

**1.03 ACCEPTABLE MANUFACTURERS**

- A. Square D/Schneider Electric
- B. ITE Siemens
- C. Cutler Hammer/Westinghouse/Eaton
- D. General Electric

**1.04 SUBMITTALS**

- A. Furnish Engineer shop submittal for each branch circuit panelboard.
- B. Submit shop drawings for each panelboard which include outline and support points, dimensions, voltage, main bus ampacity, short circuit ampere interrupting rating, circuit breaker arrangement, sizes and number of poles. Shop drawing shall list all spaces and circuit breakers to be installed in each panelboard.
- C. Provide shop submittal which includes the following:
  - 1. Cabinet
    - a. Housing
    - b. Trim
    - c. Outline dimensions
    - d. Available spaces

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

---

- e. Panelboard mounting
- 2. Circuit breakers
  - a. Frame size
  - b. Trip setting
  - c. Class
  - d. Interrupting rating in RMS Symmetrical amperes
  - e. Mounting
  - f. Voltage rating
- 3. Busing
  - a. Ampere rating
  - b. Material
  - c. Incoming cable lug size
  - d. Bus bracing
- 4. Manufacturer's catalog numbers.
- 5. Other descriptive data as may be required.
- D. Circuit breaker arrangement must be identical to the schedules or one line diagram unless there is a technical reason for deviation. All reasons for deviation must be stated on the shop drawings.**
- E. Unless specifically noted, only Max 42 circuits per section will be allowed.**

**PART 2 - PRODUCTS****2.01 GENERAL.**

- A. All new panelboards and switchboards on this project shall be by the same manufacture. The manufacture shall be the same as the manufacturer of the circuit breakers.
- B. Interior trim shall be of dead-front construction to shield user from energized parts. Dead-front trims shall have pre-formed covers for unused mounting space.
- C. Interior leveling provisions shall be provided for flush mounted applications.
- D. Panelboards shall be designed such that switching and protective devices can be replaced without disturbing adjacent units and without removing the main bus connectors.
- F. Furnish suitable lugs for each conductor requiring a connection.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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## 2.02 BUS CONSTRUCTION

- A. Fabricate all buses of 98 percent IACS conductivity, copper. Size buses to limit their temperature rise within the panelboard to 65°C based on a 40°C ambient temperature.
- B. Provide one continuous, un-reduced in size, bus bar per phase with “distributed phase” or “phase sequence” type connections to the branch circuit breakers. Extend the buses the height of the panelboard.
- C. Provide circuit breaker connections to the bus by means of a bolt. Square D “I-Line” may be provided.
- D. Insulate each individual phase bus to withstand 2000 volts a-c for 1 minute.
- E. Support the bus systems using non-carbonizing, non-tracking insulators.
- F. Furnish fully equipped spaces, include all appropriate connectors or mounting hardware.
- G. Furnish an insulated neutral bus which is the same size as the phase buses. Larger sizes may be required by the schedules or one line diagram.
- H. Furnish a solidly bonded equipment ground bus. Include terminals for feeder and branch circuit grounding conductors.
- I. Furnish an isolated ground bus, with terminals, where scheduled or noted on the drawings.
- J. Provide full size or larger insulated neutral bus bar. Where specified on the panel schedule, provide 200% rated neutral bus bar. Coordinate with plans.

## 2.03 RATINGS

- A. Panelboards and circuit breakers shall be rated for 60 hertz and have a voltage and current rating as indicated on the drawings or schedules.
- B. The finished panelboard assembly shall be fully rated to withstand mechanical forces exerted during short-circuit conditions when connected directly to a power source having available fault currents indicated on the drawings or schedules. The minimum rating for a 240 volt a-c panelboard shall be rated 10,000 AIC RMS symmetrical and a 480 volt a-c panelboard shall be rated 14,000 AIC RMS symmetrical minimum. Series ratings are not permitted.
- C. **Final AIC ratings for all panels shall be determined and provided by the gear manufacturer to meet minimum allowable fault current from utility company transformer. Provide coordination study and fault current analysis as required for justification of sizes. Make all changes required by coordination study and include in bid price. Coordination study must be completed prior to submitting gear.**

## 2.04 ENCLOSURES

- A. Enclosures shall be at least 20 inches wide and made from galvanized steel with welded interior mounting studs. Provide gutter space in accordance with the National Electrical Code. Where conductors are carried through a box, the box shall be sized to include the additional space. Enclosures shall be fully enclosed.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**B. ALL MULTI-SECTION PANEL ENCLOSURES SHALL BE THE SAME HEIGHT.****2.05 HINGED FRONT COVER**

- A. Mounting shall be flush or surface as indicated on associated schedules or drawings. Surface trims shall be the same height and width as the box. Flush trims shall overlap the box by 3/4 of an inch on all sides.
- B. Fronts shall be of the concealed hinged type. Front shall not be removable with the door closed.
- C. Doors on front shall have rounded corners; edges shall be free of burrs. Doors shall have a flat latch type lock with a catch and spring loaded stainless steel door pull. All lock assemblies shall be keyed alike. One key shall be provided with each lock.
- D. Furnish a nameplate, circuit directory frame, card and a clear plastic covering on the inside of the door. All loads shall be identified as specified in Section 16075.

**2.06 FINISH**

- A. Surfaces of the trim assembly shall be properly cleaned, primed, and a finish coat of gray paint applied.
- B. Nema 3R enclosures shall be properly cleaned, primed, and a finish coat of gray paint applied.
- C. Supply one quart of finish paint for each project. Touch-up after installation.

**2.07 MOLDED CASE THERMAL-MAGNETIC CIRCUIT BREAKERS**

- A. Furnish molded case, thermal-magnetic circuit breakers in lighting / appliance and power distribution panelboards for the specified service with the number of poles and ampere ratings indicated on the schedule or drawings. Incorporate inverse time characteristic by bi-metallic overload elements and an instantaneous characteristic by magnetic trip.
- B. Current carrying components shall be completely isolated from the handle and the accessory mounting area.
- C. Circuit breakers shall have a trip free, toggle operating mechanism which will provide quick-make, quick-break contact action. The circuit breaker shall have common tripping of all poles.
- D. The circuit breaker handle shall reside in a tripped position between ON and OFF to provide local trip indication. Circuit breakers shall be clearly marked ON and OFF.
- E. Circuit breakers shall be factory sealed.
- F. All circuit breakers shall be suitable for mounting in any position.
- G. Circuit breakers shall be equipped with factory installed mechanical lugs.
- H. Circuit breakers shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

## 100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- I. Thermal trip elements shall be factory preset and sealed. Circuit breakers shall be true rms sensing and thermally responsive to protect circuit conductor(s) in a 40° C ambient temperature.
- J. For 2-pole and 3-pole breakers, use the common-trip type so that an overload or fault on one pole will trip all poles simultaneously. Handle ties are not acceptable except where multiple single breakers are used to serve modular furniture.
- K. Where indicated, provide ground fault (GFCB) or shunt trip breakers.

## 2.08 LISTING

- A. The completed panelboard shall be UL listed.
- B. Certification standards, with applicable voltage systems and corresponding interrupting ratings, shall be clearly marked on the face of each circuit breaker.
- C. Circuit breakers shall be equipped with listed electrical accessories as noted on the schedules or drawing.
- D. When required, circuit breakers shall be listed as HACR type.
- E. When required, circuit breakers shall be listed as Switch Duty type.
- F. When required or indicated on the drawings or schedules, equipment shall be listed for the environment in which it is installed.

**PART 3 - EXECUTION**

## 3.01 INSTALLATION

- A. Install box, trim and interior rigid and plumb. Center interior with opening.
- B. Install panelboards in accordance with the instructions of the manufacturer and as shown on the Drawing. Install complete with all required electrical connections.
- C. Unless otherwise noted, install panelboards with the top of the trim 6 ft. 0 in. above finished floor.
- D. Field check panelboard loading and reconnect circuits as required to provide balanced phase and line loads.
- E. Neatly bundle, route and support cables installed in wiring gutters of panelboards. Minimum bending radii as recommended by the wire and cable manufacturer.
- F. Install five (5) 3/4" conduits from top of flush mounted panelboards to accessible void above ceiling. Cap end of conduits above ceiling.
- G. All recessed panels are to be installed in 6" minimum wall thickness. Coordinate clear dimensions with Architect and General Contractor prior to rough-in.
- H. Provide wood trim for any semi-recessed panels, including panelboards. Coordinate with General Contractor and verify finishes with the Owner/Architect.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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- I. Install filler blanks for any unused breaker space.
- J. All panel interior to be free of debris and dirt prior to installing panel covers.
- K. Check bolted and circuit breaker connections using a torque wrench.
- L. The faces of all circuit breakers shall be flush with each other.
- M. Affix permanent and individual circuit numbers to each circuit breaker in a uniform position.

**END OF SECTION**



## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 28 25 - CONTACTORS****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide lighting contactors as shown on the drawings and as hereinafter specified.

**1.02 STANDARDS**

- A. Approved per UL 508 and designed in accordance with NFPA 1C52-211B.
- B. UL listed.
- C. Conform to the latest NEMA Standards.

**1.03 ACCEPTABLE MANUFACTURERS**

- A. Square D
- B. ITE Siemens
- C. Cutler Hammer/Westinghouse
- D. General Electric

**1.04 SUBMITTALS**

- A. Furnish Engineer shop submittals for contactors.
- B. Provide shop submittal which includes the following information:
  - 1. Voltage and ampere rating
  - 2. Wiring diagram
  - 3. Enclosure type
  - 4. Coil voltage

**PART 2 - PRODUCTS****2.01 GENERAL**

- A. Continuously current rated.
- B. Capable of making and breaking all cases of loads without the aid of auxiliary arcing contacts. Auxiliary arcing contacts are not acceptable.
- C. Industrial duty rated for applications to 600 volts maximum.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

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**2.02 MATERIALS**

- A. Totally closed, double break, silver to silver power contacts. Contact inspection and replacement shall be possible without disturbing line or load wiring.
- B. Provide terminals with straight through wiring and accept copper wire.
- C. Provide switches or provisions for switches as indicated on the drawings.
- D. Unless otherwise indicated, provide contactor in NEMA Type 1 enclosure.

**PART 3 - EXECUTION****3.01 INSTALLATION**

- A. Securely mount lighting contactor. Provide all mounting hardware.

**END OF SECTION**

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

**SECTION 26 43 00 - SURGE PROTECTIVE DEVICES (SPDs)****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide a complete grounding system in strict accordance with Article 250 of the National Electrical Code and as hereinafter specified and shown on the Drawings.

**PART 2 - PRODUCTS****2.01 SURGE PROTECTIVE DEVICES (SPDs)**

- A. SPD shall be UL 1449 labeled with 200kA Short Circuit Current Rating (SCCR). Fuse ratings shall not be considered in lieu of demonstrated withstand testing of SPD, per NEC 285.6.
- B. SPD shall be UL 1449 labeled as Type 1 intended for use without need for external or supplemental overcurrent controls. Every suppression component of every mode, including N-G, shall be protected by internal overcurrent and thermal overtemperature controls. SPDs relying upon external or supplementary installed safety disconnectors do not meet the intent of this specification.
- C. SPD shall be UL 1449 labeled with 20kA I-nominal (I-n) (verifiable at UL.com) for compliance to UL 96A Lightning Protection Master Label and NFPA 780.
- D. Standard 7 Mode Protection paths: SPD shall provide surge current paths for all modes of protection: L-N, L-G, L-L, and N-G for Wye systems; L-L, L-G in Delta and impedance grounded Wye systems.
- E. True 10 Mode Protection paths: SPD shall provide "directly connected protection elements" between all possible modes of protection: L-N, L-G, L-L, and N-G for Wye systems; L-L, L-G in Delta and impedance grounded Wye systems.
- F. Maintenance: Provide SPDs with a serviceable replaceable module, with indicator lights for normal and faulted conditions. Provide audible alarm and visual status indicators to indicate need for renewal or replacement. Provide units which are UL listed for installation in accessible areas.
- G. Disconnecting Means: If a dedicated breaker for the SPD is not provided in the switchboard, the service entrance SPD shall include an integral UL Recognized disconnect switch. A dedicated breaker shall serve as a means of disconnect for distribution SPD's.
- H. Styles: The following styles are defined for determining ratings, installation method, and applications.
  - 1. Style E: Exterior to panelboard enclosure, enclosure suitable for same environment as panelboard enclosure, connected through branch circuit breaker in panelboard. Meet UL 1449 3<sup>rd</sup> Edition performance parameters.
  - 2. Style S: Switchboard type, for mounting inside switchboard, connected to buss through instrument power type of disconnect and protection, provided under this section and installed by switchboard manufacturer. SPD shall be rated as either a [Type 1 or as Type 4 intended for Type 1 or Type 2 applications](#). Meet UL 1449 3<sup>rd</sup> Edition performance parameters.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

- I. Voltage Protection Ratings : For the applicable voltage configuration the SPDs UL 1449 3<sup>rd</sup> edition Voltage Protection Rating (VPR) in any mode (L-N, L-G, and N\_G), shall not exceed the following:

| Voltage Configuration     | UL 1449 3 <sup>rd</sup> Edition VPR |
|---------------------------|-------------------------------------|
|                           | Standard or 10-Mode                 |
| 120 Volt, 1 Phase         | 700                                 |
| 120/240 Volt, 1 Phase     | 700                                 |
| 120/208 Volt, 3 Phase Wye | 700                                 |
| 240 Volt, 1 Phase         | 1200                                |
| 240 Volt, 3 Phase Delta   | 1200                                |
| 277/480 Volt, 3 Phase Wye | 1200                                |
| 480 Volt, 3 Phase Delta   | 1800                                |

- J. SPD shall meet or exceed the following criteria:
1. Style S: Surge current capability shall be 300kA/phase
  2. Style E: Surge current capability shall be 150kA/phase
- K. Available Manufacturers: Subject to compliance with requirements, manufacturers offering SPDs which may be incorporated in the work included, but are not limited to the following:
1. Basis of Design: Current Technology
  2. Alt. Manufacture: All substitutions must get prior approval submit as an Alternate with 3<sup>rd</sup> party test to verify performance matches specification. Performance can not be reduced to be considered an alternate.
  3. Substitutions not following substitution requirements outlined in general electrical section and criteria outlined in this section will not be considered.

**PART 3 - EXECUTION****3.01 INSTALLATION OF SURGE PROTECTIVE DEVICES (SPDs)**

- A. General: Install surge arrestors where indicated. Follow the manufacturer's instruction and NEC Article 285 for installation on line or load side of services.
- B. Limit the length of tap conductors to the least length practicable. In no case extend unprotected tap conductors more than ten (10) feet, or beyond the enclosure of the panelboard, switchboard or disconnect served.
- C. For Style S SPDs, the switchboard manufacturer will supply their own UL 1449 3<sup>rd</sup> edition listed SPDs meeting the specification criteria. Include complete installation instructions.

## WILLIAMSON COUNTY EXPO CENTER RV PARK

100% CONSTRUCTION DOCUMENTS

HALFF ASSOCIATES 32388

SEPTEMBER 29, 2017

Surge Protection: PROJECT NAME

(Manufacturer to fill out entire form)

1. Surge Manufacturer Name: \_\_\_\_\_
2. Model Numbers for:
  - a. "MSB":  
Model: \_\_\_\_\_
  - b. Panel s \_\_\_\_\_:  
Model: \_\_\_\_\_
  - b. Panel s \_\_\_\_\_:  
Model: \_\_\_\_\_
3. Does MSB Surge have Advance Monitoring \_\_\_\_ Yes \_\_\_\_ No  
(Advanced Monitoring: Voltmeter, Surge Counter, Event Logger)  
Attached specification sheet on monitor \_\_\_\_ Yes \_\_\_\_ No
4. Does MSB have Over-Voltage Protection \_\_\_\_ Yes \_\_\_\_ No
5. Surge ratings:
  - a. Model \_\_\_\_\_ Rating \_\_\_\_\_
  - b. Model \_\_\_\_\_ Rating \_\_\_\_\_
  - c. Model \_\_\_\_\_ Rating \_\_\_\_\_
6. Testing
  - a. Have units been tested for Surge Impulse Surge Current by a third party independent laboratory? \_\_\_\_ Yes \_\_\_\_ No
  - b. Attached 3<sup>rd</sup> party Test Report \_\_\_\_ Yes \_\_\_\_ No
  - c. Can SPD be tested in field and compared to factory test \_\_\_\_ Yes \_\_\_\_ No
7. Warranty Period
  - a. Standard Warranty \_\_\_\_\_ Years
  - b. Life Expectancy \_\_\_\_\_ Years

**END OF SECTION**

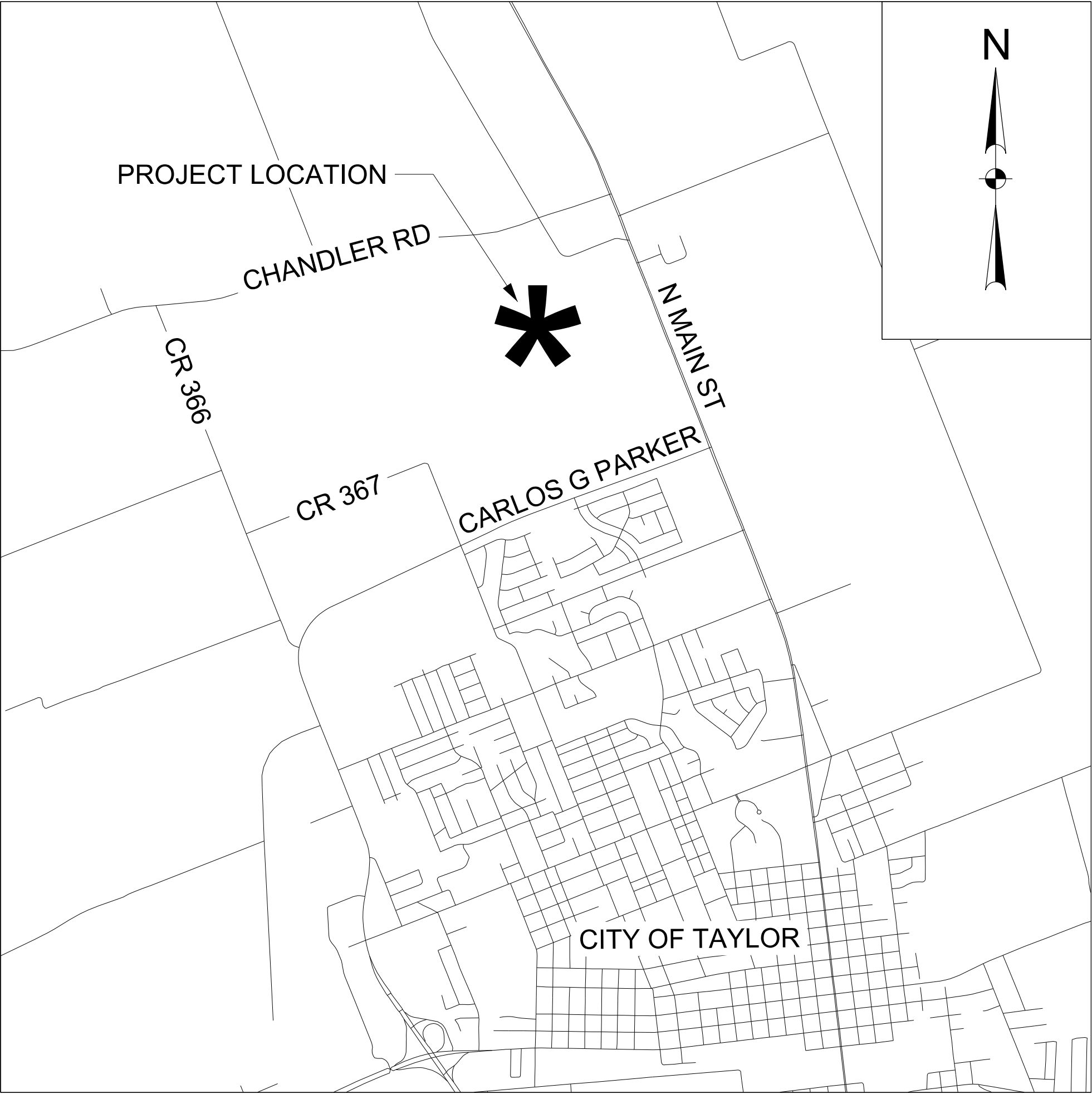


# Williamson County Expo Center

RV PARK



## Location Map



COUNTY JUDGE  
DAN GATTIS

COUNTY COMMISSIONER  
TERRY COOK

COUNTY COMMISSIONER  
CYNTHIA LONG

COUNTY COMMISSIONER  
VALERIE COVEY

COUNTY COMMISSIONER  
LARRY MADSEN

### SHEET LIST

- C0.0 COVER SHEET
- C0.1-C0.2 GENERAL NOTES
- C0.3 ALIGNMENT DATA SHEET
- C1.1 SITE PLAN & SURVEY CONTROL
- C2.1 EXISTING DRAINAGE AREA MAP
- C2.2 PROPOSED DRAINAGE AREA MAP
- C3.1 GRADING PLAN
- C3.2 EROSION CONTROL PLAN
- C4.1 WASTEWATER PLAN
- C4.2 WASTEWATER PROFILES
- C4.3 WATER PLAN
- C5.1 SIGNAGE & DIMENSION CONTROL
- C6.1 STORM PLAN & PROFILES
- C7.1 ROADWAY PLAN
- C7.2 DRIVEWAY PLAN & PROFILE
- C7.3 TRAIL PLAN
- C8.1 TRAFFIC CONTROL PLAN
- C9.1- C9.21 STANDARD DETAILS
- L1.0 LANDSCAPE/AMENITY PLAN
- L2.0 LANDSCAPE/AMENITY DETAILS
- E100 SITE PLAN - ELECTRICAL
- E101 SCHEDULES, NOTES AND LEGENDS - ELECTRICAL
- E102 RISER & SCHEDULES
- E103 SCHEDULE & DETAILS



**HALFF**  
TBPE FIRM \*F-312  
9500 AMBERGLEN BLVD, BUILDING F, SUITE 125  
AUSTIN, TEXAS 78729  
TEL (512) 777-4600  
FAX (512) 252-8141

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DECEMBER 2017  
AVO 32388



# City of Taylor, Texas - General Construction Notes

1.)General Contractor shall call for all utility locates prior to any construction. Water & wastewater owned by the City of Taylor can be located by calling the Utility Department 512-352-3251. Allow three business days for utility locates by the City of Taylor.

2.)All construction shall be in accordance with the latest City of Taylor ENGINEERING MANUAL.

3.)~~The contractor shall give the City a minimum of 48 hours notice before beginning each phase of construction. See Traffic Control Plans for construction phasing.~~

4.)~~Prior to City acceptance of all improvements, all graded and disturbed areas are to be re-vegetated in accordance with the City of Austin Specification Item #604 unless another revegetation specification is specifically identified in the plans and/or bid form. When appropriate in the opinion of the Public Works Department, the City of Taylor may require native grasses to be used.~~

5.)The Contractor shall provide Williamson County copies of all test results prior to acceptance of this project.

6.)~~City, owner, engineer, contractor, representatives of all utility companies, and a representative from the testing lab shall attend pre-construction conference prior to start of construction. The contractor shall schedule the meeting with the City of Taylor Engineering Department 48 hours prior to this pre-construction meeting (512-352-3633).~~

7.)~~Excess soil shall be removed at the contractor's expense. Notify the City of Taylor for approval if the disposal site is inside the City's jurisdictional boundaries.~~

8.)Burning is prohibited. No blasting is allowed.

9.)~~Any changes or revisions to these plans must first be submitted to the City by the design engineer for review and written approval.~~

10.)The Contractor will reimburse the City (or County) for all cost incurred as a result of any damage to any City utility by the Contractor, regardless of the plans.

11.)~~Prior to City acceptance of this project, an engineer's concurrence letter and 22"x34" record drawings (one Mylar copy, one blue-line or Xerox, and a digital copy on a CD-ROM) shall be submitted to the Engineering Department. The Consulting Engineer and Contractor shall verify that all final revisions and changes have been made to the Mylar, blue-line, and digital copy prior to City submittal. Record construction drawings shall be provided to the City in digital format as AutoCad ".dwg" files, or ESRI ".shp" files on CD-ROM. Line weights, line types and text size shall be such that if half-size prints (11"x-17") were produced, the plans would still be legible. All required digital files shall contain a minimum of two (2) control points referenced to the State Plane Grid Coordinate System - Texas Central Zone (4203), in US feet and shall include rotation information and scale factor required to reduce surface coordinates to grid coordinates in US feet. Half-size plans may also be required (see contract).~~

12.)ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS, THE CITY OF TAYLOR MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

13.)A traffic control plan, in accordance with the Texas Manual on Uniform Traffic Control Devices, shall be submitted to the County for review and approval prior to any partial or complete roadway closures.

14.)~~The contractor shall keep the site clean and maintained at all times, to the satisfaction of the City. This project will not be accepted until the site has been cleaned and re-vegetated to the satisfaction of the City.~~

15.)Signs are not permitted in Public Utility Easements or Drainage Easements.

16.)Inspect temporary erosion controls on a daily basis. Adjust the controls and/or remove any sediment buildup as necessary.

17.)Contractor will be responsible for keeping roads and drives adjacent to and near the site free from soil, sediment and debris. ~~Contractor will not remove soil, sediment or debris from any area or vehicle by means of water, only shoveling and sweeping will be allowed.~~ Contractor will be responsible for dust control from the site.

18.)The Contractor shall be responsible for all damage to private property, which occurred as a result of any portion of this project. Any damage to private property shall be repaired to equal or better condition. The Contractor shall coordinate all repairs to private property with the property owner. Contractor shall pay and/or settle with private property owner for all costs related to any damage. The County will not provide separate pay for repair of any damages, reimbursements or settlements.

19.)~~Contractor shall provide the services of the City's approved SGADA consultant and controls instrumentation consultant. (When applicable to SGADA) The cost of the consultant and/or any equipment shall be subsidiary to the cost of the project (no separate pay) unless specifically identified on the bid form.~~

20.)Contractor shall be responsible for any and all utility relocations. Including but not limited to: ONCOR Electric, ATMOS Gas, AT&T Telephone, United Stated Post Office, Time Warner Cable Television, City of Taylor Water & Wastewater. Contractor shall call 800-DIG-TESS and maintain all confirmation numbers.

21.)~~If telephone service is required by this project, the contractor shall coordinate with phone company to provide/extend/re-locate the service. No separate pay will be provided and the City shall not be responsible for scheduling or coordinating with phone company.~~

22.)Electric and/or telephone poles that need to be re-located for this project will be at the expense of the contractor. The County will not provide separate pay for pole re-location and the cost of the relocation is considered subsidiary to the project bid. The contractor is responsible for identifying poles that may conflict with these plans and making arrangements to resolve the conflict with the appropriate utility. If electric, telephone, or CATV service will be interrupted as a result of the re-location; the County shall approve the maximum allowable time the service will be interrupted.

23.)The contractor shall make applications to the electric company for electric service if new service is required. ~~The City will assume the service upon acceptance of the project (if required). The contractor will pay for electric power until the meter is transferred to the City of Taylor.~~ Impact fees and Application Fees required by the electric company will be the responsibility of the Contractor unless specifically identified in the contract.

24.)The contractor shall provide combination locks for all gates, hatches, vaults, and MCC boxes. Each lock shall be pre-approved and set to the County's requirements. ~~(No separate pay)~~

25.)All work on these plans shall be performed. Pay for work shown on these plans, which are not identified in the contract, shall be considered incidental to the items specifically identified for payment.

26.)The contractor shall provide a competent and qualified superintendent to supervise all work. The superintendent shall be present during all construction activities.

27.)Any survey monuments damaged or moved as a result of this project shall be replaced to equal or better condition. A Texas Registered Land Surveyor shall oversee the replacement and certify the replacement for its intended use. No separate pay will be provided.

28.)Adequate drainage conditions, in accordance with the City Engineering Manual, shall be maintained at all times.

29.)Any tree removed or damaged by this project, which is not specifically identified to be removed by the plans, will be replaced according to the requirements of the City of Taylor Code of Ordinances. ~~No separate pay will be provided.~~

30.)~~The contractor shall uncover all utilities within the limits of construction and verify their location prior to any construction activities. The contractor shall notify the County and the Engineer, IN WRITING, of any conflicts prior to any other construction including but not limited to exact locations of conflicts with proposed or existing utilities. No additional pay unless specifically identified for payment in the contract documents. The contractor shall also make his own sub-surface investigation prior to bid.~~

31.)Only stainless steel casing spacers are allowed in encasement pipe(s).

32.)~~No separate pay will be given to de-water trenches or other excavated areas. Soil material imported for re-vegetation of disturbed areas shall be approved by the Public Works department prior to placement. A sample (submittal) is required.~~

33.)~~Soil material imported for re-vegetation of disturbed areas shall be approved by the Public Works department prior to placement. A sample (submittal) is required.~~

34.)~~The contractor shall perform pumping stations and/or lift station start-up independently; prior to requesting witness or acceptance by the City. When a final start-up fails to be complete and acceptable and when City personnel are present at start-up, each additional start-up will be charged to the contractor, as liquidated damages, \$500.00 per additional meeting.~~

35.)Shutout of any customers of the City's utility due to tie-ins shall only be scheduled for nighttime work unless approved by the Engineering Department. The City's field representative shall coordinate and inspect all nighttime shutouts and tie-ins. The contractor shall request shutouts two weeks in advance and notify County representative. Shutouts will only be allowed in the following times and are subject to approval by the City: 10 PM - 6 AM; beginning on Tuesday, Wednesday or Thursday night(s). No extra time will be granted to the contract for unscheduled work in the time.

36.)Contractor shall document existing conditions prior to beginning any construction activities, either by photograph or video. Consider subsidiary to Preparing R.O.W.

Street Notes:

4.)~~No trenching of compacted base will be allowed. A penalty and/or fine may be imposed to the general contractor if trenching of compacted base occurs without City approval; regardless of who performed the trenching.~~

2.)All sidewalks shall comply with the Americans With Disabilities Act. The County has NOT reviewed these plans for compliance with the Americans With Disabilities Act, or any other accessibility legislation, and does not warranty or approve these plans for any accessibility standards.

3.)Street barricades shall be installed on all dead end streets and as necessary during construction to maintain job safety.

4.)Any damage caused to existing pavement, curbs, sidewalks, ramps, etc., shall be repaired by the contractor ~~to the satisfaction of the City prior to acceptance of this project.~~

5.)~~Density testing of compacted subgrade material, first course and second course compacted base, shall be made at 500 foot intervals. Any failed tests will be re-tested at the expense of the contractor.~~

6.)~~The contractor shall coordinate with the City's field representative 48 hours prior to scheduled density testing. The City's field representative shall witness all testing.~~

7.)~~The CONTRACTOR shall schedule all testing with County approved materials testing laboratory vendor and notify the City's field representative of the time and location of all tests.~~

8.)Traffic control signs and pavement markings in accordance with the Texas Manual on Uniform Traffic Control Devices to be installed ~~as directed by the City of Taylor prior to City acceptance of this project.~~

9.)~~Slope of natural ground adjacent to the right-of-way shall not exceed 4:1. If a 4:1 slope is not possible, a retaining wall or some other form of slope protection approved by the City shall be placed in a location acceptable to the City.~~

40.)~~The City, engineer, contractor, and a representative from the testing lab shall attend a pre-paving conference prior to the start of paving. The contractor shall give the City's field representative 48 hours notice prior to this meeting.~~

11.)Failed tests shall be the financial responsibility of the contractor.

Water Notes:

1.)The top of valve stems shall be at least 18", and no more than 36", below finished grade. Valve stem risers shall be welded on each end ~~to the City's satisfaction.~~

2.)Fire hydrant leads to be ductile iron, Class 350, and installed per City of Taylor standard specifications and detail.

3.)The contractor shall provide cuts for all water lines and FH bury lines in accordance with the contract.

4.)Approved 5 1/4" fire hydrants: American Flow Control, B84B Mueller Company, Super Centurion 250, Clow Medallion Hydrant

5.)\*All fire hydrants must meet City of Taylor thread specifications (National Thread)

6.)\*Blue reflector markers shall be located on the centerline of the pavement across from all fire hydrants. Pavement markers at intersections shall be four-sided.

7.)~~All water lines, including service lines, shall be pressure and leak tested per City of Austin Standard Specifications and witnessed by the City of Taylor representative. All failed tests shall be the fiscal responsibility of the contractor, and the contractor may be required to re-test lines if the testing is not witnessed by the City. Contractor must notify the City of Taylor 48 hours prior to any testing.~~

8.)~~All water lines shall be sterilized and bacteriologically tested in accordance with City of Austin Standards. The contractor is responsible for sterilization and the City of Taylor is responsible for submitting bacteriological samples to the State unless otherwise approved by the Engineering department.~~

9.)All water valve risers not in pavement shall be set in concrete in accordance with the City's specifications and details. The standard detail is available on the City's web site.

40.)~~Density testing of compacted backfill shall be made at a rate of one test per two foot lifts per 500 feet of installed pipe unless otherwise approved by the Public Works department.~~

41.)~~Contractor to obtain a water meter from the City of Taylor for any water that may be required during construction. (512-352-3251)~~

12.)All water pipe and appurtenances larger than 12" shall have a maximum operating pressure greater than 250 psi unless specifically identified on the bid form.

13.)The location of any existing utility lines shown on these plans is the best available and may not be totally accurate. Any damage to existing utility lines, both known and unknown shall be repaired at the expense of the contractor. The Engineer and/or the City make no guarantee or warranty to the accuracy of these plans.

14.)All iron pipe and fittings shall be wrapped with at least 8-mil polyethylene wrap in accordance with the COA specification.

15.)All water mains, wastewater mains and service lines shall meet City of Taylor Specifications minimum cover requirements. All streets are to be cut to subgrade prior to installation of water mains.

46.)~~City to be given 48 hours notice prior to all testing of water and wastewater lines. City inspection is required for all testing of water and wastewater lines.~~

47.)~~All water valves over 24" in size shall have a by-pass line and valve installed. By-pass valves and lines are subsidiary to the cost of the valve unless specifically identified on the bid form.~~

18.)Contractor to notify City of Taylor 48 hours prior to connecting to existing utilities. Inspection is required.

49.)~~All pipe bedding material shall conform to City of Taylor Standard Details.~~

20.)Tracer tape shall be installed on all water and wastewater mains in accordance with City of Austin Standards regardless of the type of pipe or depth of pipe installed.

21.)~~Unless otherwise specified by the Engineer all concrete is to be Class "A" (5 sack, 3000 psi — 28 days); and all reinforcing steel to be ASTM A615-60.~~

22.)The City considers protection of its water system paramount to construction activities. City personnel will operate, or authorize the contractor to operate, all water valves that will pass through the City's potable water. The contractor may not operate any water valve, existing or proposed, that will allow water from the City's water system to flow to a proposed or existing water system without the express consent of the City. Notify the City two business days in advance of any request to operate a water valve. The general contractor may be fined \$500 or more, including additional theft of water fines, if a water valve is operated in an unauthorized manner, regardless of who operated the valve.

Wastewater Notes:

1.)The contractor, ~~with City approval~~, shall raise manhole frames to finished pavement grade at the contractor's expense. All utility adjustments shall be completed prior to final paving construction.

2.)The location of any existing utility lines shown on these plans may not be accurate. Any damage to existing utility lines, both known and unknown, shall be repaired at the expense of the contractor. The contractor shall locate all utilities prior to bidding the project.

3.) All iron pipe and fittings shall be wrapped with a least 8-mil polyethylene wrap, according to the COA Specification.

4.)All water mains, wastewater mains and service lines shall meet City of Taylor minimum cover specifications, All streets are to be cut to subgrade prior to installation of water mains.

5.)~~All wastewater lines shall be TV Video taped according to GOA 510. The contractor shall supply two copies to the City's Field Representative.~~

6.)Gasketed PVC sewer main fittings shall be used to connect SDR-35 PVC to SDR-26 PVC pressure pipe or C-900.

7.) SDR-35 WW is not allowed.

8.)All sanitary sewers, excluding service lines, shall be mandrel tested per TCEQ criteria. A mandrel test will not be performed until backfill has been in place for a minimum of 30 days.

9.)All sanitary sewers, including service lines, shall be air tested per City of Austin Standard Specifications.

40.)~~Density testing of compacted backfill shall be made at a rate of one test per two foot lifts per 500 feet of installed pipe, unless specified otherwise by the City.~~

41.)~~City to be given 48 hours notice prior to all testing of water and wastewater lines. City inspection is required for all testing of water and wastewater lines.~~

12.)Water or wastewater line crossings shall be installed per TCEQ requirements.

13.)All manhole lids outside the pavement shall be bolted.

14.)Contractor to notify City of Taylor 48 hours prior to connecting to existing utilities. Inspection of connections to existing utilities is required.

15.)All pipe bedding material shall conform to City of Austin Standard Specifications.

46.)~~Unless otherwise specified by the Engineer all concrete is to be Class "A" (5 sack, 3000 PSI 28 days); and all reinforcing steel to be ASTM A615-60.~~

47.)~~Piping in and around lift station valve vaults will be painted and/or coated to the City's specifications.~~

48.)~~MGG's, junctions boxes or any housing for electrical components shall be NEMA 4X stainless steel. Painted metal or any other type of box will not be accepted unless specifically identified in the plans.~~



| Revision No. | Date | Description |  |  |  |
|--------------|------|-------------|--|--|--|
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THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY SHAWN M. BERTRAM, P.E. #98190 ON 12/04/2017. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT. THE RECORD COPY OF THIS DRAWING IS ON FILE AT THE OFFICES OF HALFF ASSOCIATES, INC. 9500 AMBERGLEN BLVD. BUILDING F, SUITE 125, AUSTIN, TEXAS 78729. TBPE FIRM#F-312

|                    |
|--------------------|
| Project No.: 32388 |
| Issued: 12/04/2017 |
| Drawn By: JN       |
| Checked By: SB     |

## GENERAL NOTES



# City of Taylor, Texas - General Construction Notes (Cont.)

## Storm Sewer Notes:

- 1.)The contractor ~~with City inspection~~ shall raise manhole frames and covers and water valve boxes to finished pavement grade. All utility adjustments shall be completed prior to final paving construction. The contractor will backfill around manholes and junction boxes with Class A concrete.
- 2.)All manhole lids shall be 32" or larger, unless expressly approved in writing by the Engineering Department. All lids outside the pavement will be bolted.
- 3.)The location of any existing utility lines shown on these plans is the best available and may not be totally accurate. Any damage to existing utility lines, both known and unknown, shall be repaired at the expense of the contractor.
- 4.)Contractor to notify City of Taylor 48 hours prior to connecting to existing utilities.
- 5.)~~All pipe bedding material shall conform to City of Taylor Standard Details.~~
- 6.)~~Unless otherwise specified by the Engineer all concrete is to be Class "A" (5 sack, 3000 psi -- 28 days); and all reinforcing steel to be ASTM A615 60.~~
- 7.)Contractor to install and maintain geo-textile fabric barrier (inlet protection) around storm sewer leads and inlets to prevent silt and other material from entering the storm sewer collection system.

# PROJECT GENERAL CONSTRUCTION NOTES:

## General Notes:

- 1.) Contractor to submit traffic control plan, in accordance with the Texas Manual on Uniform Traffic Control Devices, prior to any partial or complete roadway closures.

## Erosion and Sedimentation control notes:

- 1.)Prior to any site preparation work, the contractor shall install erosion controls in accordance with the erosion control plan.
- 2.)Sedimentation and temporary erosion controls shall be provided in accordance with TxDOT specification 506.
- 3.)Prior to final acceptance, haul roads and waterway crossings constructed for temporary access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed in approved soil disposal sites.

## Street Notes:

- 1.)Density testing of compacted subgrade material shall be done in accordance with the testing schedule provided in the specification book.
- 2.)The contractor shall coordinate with the County's field representative 48 hours prior to scheduled density testing. The County's field representative shall witness all testing.
- 3.)The CONTRACTOR shall schedule all testing with a County approved materials testing laboratory and notify the County's field representative of the time and location of all tests.
- 4.)Traffic control signs and pavement markings in accordance with the Texas Manual on Uniform Traffic Control Devices to be installed as directed by Williamson County prior to County acceptance of this project.
- 5.)Slope of natural ground adjacent to the right-of-way shall not exceed 6:1.
- 6.)Hot mix asphalt shall be in accordance with Williamson County Hot mix specification.
- 7.)Flexible base shall be in accordance with Williamson County Flexible Base specification.
- 8.)Flexible base shall extend a minimum of (12") inches past the back of curb line for soils with pi of 20 or less, (36") for all other soils.
- 9.)Roadway excavation shall be done in accordance with TxDOT Specification Item 110 Excavation.
- 10.)Contractor to fill behind curbs and walks and shape to insure proper drainage.
- 11.)Construction joints to existing pavement shall be made by either cutting back existing pavement to produce a slightly beveled edge for the full thickness of the wearing course or a suitable lap joint shall be made. Saw cutting required.
- 12.)No traffic shall be allowed on the finished wearing surface until at least 12 hours after completion of rolling.
- 13.)Hot mix concrete transport trucks to be equipped with canvas covers to be utilized during material hauling. Material delivered to site at improper temperature shall be rejected. Hot mix shall be laid per Williamson County Hot Mix specifications.
- 14.)Any settlement under pavement due to inadequate compaction of utility line back fill shall be cause for recompaction of trench and replacement of pavement section.
- 15.) See additional Williamson County Roadway General Notes this sheet.

## Wastewater Notes:

- 1.)Water shall be flowed into the pipe to permit meaningful observations. Any pipe settlement which causes excessive ponding of water in the pipe shall be cause for rejection. Excessive ponding shall be defined as a golf ball (1-5/8" dia.) submerged at any point along the line.
- 2.)All sanitary sewers, including service lines, shall be air tested per City of Austin Standard Specification 510-26 (e), in lieu of exfiltration/infiltration testing.
- 3.)Density testing of compacted backfill shall be made in accordance with the testing schedule provided in the specification book.
- 4.) All sanitary sewers shall be laid on Class B (compacted granular material) bedding and back filled with compacted granular material.
- 5.) All sanitary sewers shall be PVC SDR-26.

## Water Notes:

- 1.)All water lines, shall be pressure and leak tested per City of Austin standard specifications.
- 2.)All water lines shall be sterilized and bacteriologically tested in accordance with TCEQ requirements. Contractor is fiscally responsible for all testing and costs subsidiary to item 510.
- 3.)All pipe bedding material shall conform to City of Taylor Standard Details and City of Austin specifications.
- 4.)Tracer tape shall be installed on all water and wastewater mains (8 inch and larger) in accordance with City of Austin Standards regardless of the type of pipe or depth of pipe installed.

## Storm Sewer Notes:

- 1.)Pipe excavation, trenching, and embedment shall meet TxDOT specification item 400, Excavation and Backfill for Structures.
- 2.)All storm drain culverts and storm drains shall meet TxDOT specification Item 462, Concrete Box Culverts and Storm Drains.
- 3.)All storm drain pipe shall meet TxDOT specification Item 464, Reinforced Concrete Pipe.
- 4.)All proposed storm sewer manholes shall conform to City of Taylor Standard Details.
- 5.)All storm drain pipe under paving shall be class IV with class B bedding (compacted granular material).



| Revision No. | Date | Description |  |  |  |  |  |  |
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|              |            |
|--------------|------------|
| Project No.: | 32388      |
| Issued:      | 12/04/2017 |
| Drawn By:    | JN         |
| Checked By:  | SB         |

## GENERAL NOTES

C0.2



## HORIZONTAL ALIGNMENT DATA

Beginning chain ROAD A description

Point ROADA001      N 10,196,025.7591 E   3,210,639.6889 Sta      1+00.00

Course from ROADA001 to PC ROAD A-1 N 25° 14' 19.3078" E Dist 68.0604

Curve Data  
\*-----\*

Curve ROAD A-1  
P.I. Station      2+86.06 N   10,196,194.0586 E      3,210,719.0235  
Delta      =   42° 56' 34.5278" (RT)  
Degree      =   19° 05' 54.9354"  
Tangent      =      118.0006  
Length      =      224.8486  
Radius      =      300.0000  
External      =      22.3727  
Long Chord =      219.6227  
Mid. Ord.      =      20.8200  
P.C. Station      1+68.06 N   10,196,087.3224 E      3,210,668.7092  
P.T. Station      3+92.91 N   10,196,237.9153 E      3,210,828.5713  
C.C.              N   10,195,959.4053 E      3,210,940.0710  
Back      = N 25° 14' 19.3066" E  
Ahead      = N 68° 10' 53.8344" E  
Chord Bear = N 46° 42' 36.5705" E

Course from PT ROAD A-1 to ROADA002 N 68° 10' 53.8285" E Dist 20.0000

Point ROADA002      N 10,196,245.3486 E   3,210,847.1386 Sta      4+12.91

Ending chain ROAD A description

Chain TRAIL contains:  
TRAIL001 CUR TRAIL-1 CUR TRAIL-2 CUR TRAIL-3 CUR TRAIL-4 CUR TRAIL-5 CUR TRAIL-6 CUR TRAIL-7 TRAIL002 TRAIL003

Beginning chain TRAIL description

Point TRAIL001      N 10,196,792.0001 E   3,210,655.2728 Sta      1+00.00

Course from TRAIL001 to PC TRAIL-1 S 21° 40' 53.4182" E Dist 465.7499

Curve Data  
\*-----\*

Curve TRAIL-1  
P.I. Station      5+94.00 N   10,196,332.9515 E      3,210,837.7788  
Delta      =   50° 25' 20.4873" (RT)  
Degree      =   95° 29' 34.6771"  
Tangent      =      28.2482  
Length      =      52.8022  
Radius      =      60.0000  
External      =      6.3171  
Long Chord =      51.1147  
Mid. Ord.      =      5.7154  
P.C. Station      5+65.75 N   10,196,359.2011 E      3,210,827.3426  
P.T. Station      6+18.55 N   10,196,308.1834 E      3,210,824.1957  
C.C.              N   10,196,337.0343 E      3,210,771.5875  
Back      = S 21° 40' 53.4181" E  
Ahead      = S 28° 44' 27.0692" W  
Chord Bear = S   3° 31' 46.8255" W

Curve Data  
\*-----\*

Curve TRAIL-2  
P.I. Station      6+46.89 N   10,196,283.3385 E      3,210,810.5705  
Delta      =   50° 33' 33.1761" (LT)  
Degree      =   95° 29' 34.6766"  
Tangent      =      28.3357  
Length      =      52.9455  
Radius      =      60.0000  
External      =      6.3545  
Long Chord =      51.2443  
Mid. Ord.      =      5.7459  
P.C. Station      6+18.55 N   10,196,308.1834 E      3,210,824.1957  
P.T. Station      6+71.50 N   10,196,257.0325 E      3,210,821.1020  
C.C.              N   10,196,279.3325 E      3,210,876.8040  
Back      = S 28° 44' 27.0692" W  
Ahead      = S 21° 49' 06.1070" E  
Chord Bear = S   3° 27' 40.4811" W

Course from PT TRAIL-2 to PC TRAIL-3 S 21° 49' 06.1079" E Dist 38.4498

Curve Data  
\*-----\*

Curve TRAIL-3  
P.I. Station      7+49.95 N   10,196,184.2023 E      3,210,850.2590  
Delta      =   90° 00' 00.0001" (LT)  
Degree      =   143° 14' 22.0156"  
Tangent      =      40.0000  
Length      =      62.8319  
Radius      =      40.0000  
External      =      16.5685  
Long Chord =      56.5685  
Mid. Ord.      =      11.7157  
P.C. Station      7+09.95 N   10,196,221.3370 E      3,210,835.3924  
P.T. Station      7+72.78 N   10,196,199.0689 E      3,210,887.3937  
C.C.              N   10,196,236.2036 E      3,210,876.5271  
Back      = S 21° 49' 06.1070" E  
Ahead      = N 68° 10' 53.8929" E  
Chord Bear = S 66° 49' 06.1070" E

Course from PT TRAIL-3 to PC TRAIL-4 N 68° 10' 53.8950" E Dist 38.7443

Curve Data  
\*-----\*

Curve TRAIL-4  
P.I. Station      8+25.52 N   10,196,218.6697 E      3,210,936.3536  
Delta      =   50° 00' 46.1554" (LT)  
Degree      =   190° 59' 09.3542"  
Tangent      =      13.9933  
Length      =      26.1867  
Radius      =      30.0000  
External      =      3.1031  
Long Chord =      25.3632  
Mid. Ord.      =      2.8122  
P.C. Station      8+11.52 N   10,196,213.4689 E      3,210,923.3626  
P.T. Station      8+37.71 N   10,196,231.9653 E      3,210,940.7169  
C.C.              N   10,196,241.3199 E      3,210,912.2127  
Back      = N 68° 10' 53.8929" E  
Ahead      = N 18° 10' 07.7375" E  
Chord Bear = N 43° 10' 30.8152" E

Curve Data  
\*-----\*

Curve TRAIL-5  
P.I. Station      8+51.70 N   10,196,245.2610 E      3,210,945.0803  
Delta      =   50° 00' 46.1555" (RT)  
Degree      =   190° 59' 09.3748"  
Tangent      =      13.9933  
Length      =      26.1867  
Radius      =      30.0000  
External      =      3.1031  
Long Chord =      25.3632  
Mid. Ord.      =      2.8122  
P.C. Station      8+37.71 N   10,196,231.9653 E      3,210,940.7169  
P.T. Station      8+63.90 N   10,196,250.4618 E      3,210,958.0712  
C.C.              N   10,196,222.6108 E      3,210,969.2212  
Back      = N 18° 10' 07.7375" E  
Ahead      = N 68° 10' 53.8929" E  
Chord Bear = N 43° 10' 30.8152" E

Course from PT TRAIL-5 to PC TRAIL-6 N 68° 10' 53.8929" E Dist 575.9435

Curve Data  
\*-----\*

Curve TRAIL-6  
P.I. Station      14+82.70 N   10,196,480.4506 E      3,211,532.5502  
Delta      =   71° 04' 55.9805" (RT)  
Degree      =   95° 29' 34.6771"  
Tangent      =      42.8626  
Length      =      74.4371  
Radius      =      60.0000  
External      =      13.7374  
Long Chord =      69.7544  
Mid. Ord.      =      11.1781  
P.C. Station      14+39.84 N   10,196,464.5201 E      3,211,492.7580  
P.T. Station      15+14.28 N   10,196,447.9726 E      3,211,560.5213  
C.C.              N   10,196,408.8181 E      3,211,515.0580  
Back      = N 68° 10' 53.8929" E  
Ahead      = S 40° 44' 10.1265" E  
Chord Bear = S 76° 16' 38.1168" E

Course from PT TRAIL-6 to PC TRAIL-7 S 40° 44' 10.1285" E Dist 47.6402

Curve Data  
\*-----\*

Curve TRAIL-7  
P.I. Station      15+83.35 N   10,196,395.6356 E      3,211,605.5958  
Delta      =   71° 04' 55.9806" (LT)  
Degree      =   190° 59' 09.3542"  
Tangent      =      21.4313  
Length      =      37.2186  
Radius      =      30.0000  
External      =      6.8687  
Long Chord =      34.8772  
Mid. Ord.      =      5.5890  
P.C. Station      15+61.92 N   10,196,411.8746 E      3,211,591.6102  
P.T. Station      15+99.14 N   10,196,403.6009 E      3,211,625.4919  
C.C.              N   10,196,431.4519 E      3,211,614.3419  
Back      = S 40° 44' 10.1265" E  
Ahead      = N 68° 10' 53.8929" E  
Chord Bear = S 76° 16' 38.1168" E

Course from PT TRAIL-7 to TRAIL002 N 68° 10' 53.8942" E Dist 49.9177

Point TRAIL002      N 10,196,422.1536 E   3,211,671.8338 Sta      16+49.05

Course from TRAIL002 to TRAIL003 N 30° 29' 11.9999" E Dist 6.9630

Point TRAIL003      N 10,196,428.1539 E   3,211,675.3664 Sta      16+56.02

Ending chain TRAIL description

Chain DRWYA contains:  
DRWYA001 DRWYA002

Beginning chain DRWYA description

Point DRWYA001      N 10,196,666.8748 E   3,210,721.5657 Sta      1+00.00

Course from DRWYA001 to DRWYA002 S 68° 10' 53.8942" W Dist 70.0000

Point DRWYA002      N 10,196,640.8583 E   3,210,656.5800 Sta      1+70.00

Ending chain DRWYA description

Chain DRWYB contains:  
DRWYB001 DRWYB002

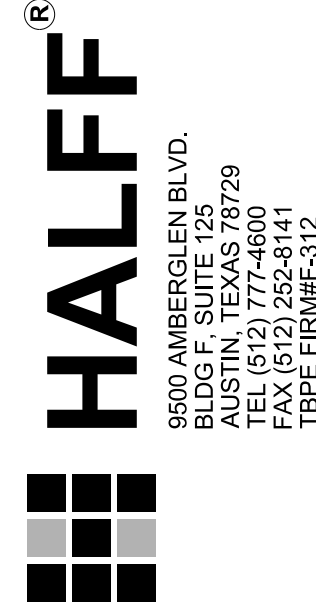
Beginning chain DRWYB description

Point DRWYB001      N 10,196,513.6344 E   3,210,782.7162 Sta      1+00.00

Course from DRWYB001 to DRWYB002 S 68° 10' 53.8915" W Dist 70.0000

Point DRWYB002      N 10,196,487.6178 E   3,210,717.7305 Sta      1+70.00

Ending chain DRWYB description



| Revision No. | Date | Description |  |  |  |  |  |  |  |
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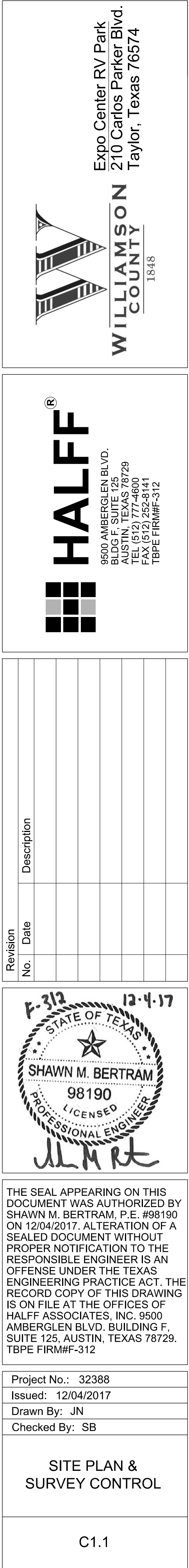
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY SHAWN M. BERTRAM, P.E. #98190 ON 12/04/2017. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT. THE RECORD COPY OF THIS DRAWING IS ON FILE AT THE OFFICES OF HALFF ASSOCIATES, INC. 9500 AMBERGLEN BLVD. BUILDING F, SUITE 125, AUSTIN, TEXAS 78729. TBPE FIRM#F-312

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| Project No.: 32388 |
| Issued: 12/04/2017 |
| Drawn By: JN       |
| Checked By: SB     |

HORIZONTAL ALIGNMENT DATA

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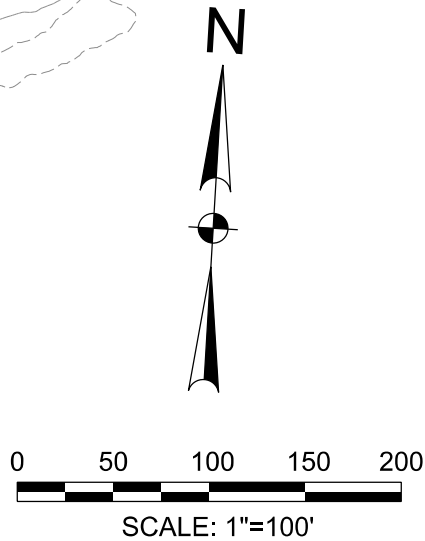
1.) HYDRAULIC CALCULATIONS DEVELOPED USING SCS METHOD AS DESCRIBED IN TR-55 "URBAN HYDROLOGY FOR SMALL WATERSHEDS" BY USDA DATED JUNE 1986 & HEC-HMS VERSION 3.5.

2.) 24-HOUR DEPTHS WERE OBTAINED FROM TXDOT WILLIAMSON COUNTY DEPTH-DURATION TABLES.

3.) EXISTING CONTOURS DISPLAYED ARE A MERGE OF 2017 GROUND SURVEY AND 2006 LIDAR FLOWN BY WILLIAMSON COUNTY.

|                                                                                     |                            |
|-------------------------------------------------------------------------------------|----------------------------|
|  | CONTROL POINT              |
|  | EXIST LAMP POST            |
|  | EXIST SIGN                 |
|  | EXIST ELEC MANHOLE         |
|  | EXIST POWER POLE           |
|  | EXIST WATER VALVE          |
|  | EXIST GUY WIRE             |
|  | EXIST SEWER MANHOLE        |
|  | EXIST EDGE OF CONCRETE     |
|  | EXIST EDGE OF ASPHALT      |
|  | EXIST CONTOUR              |
|  | DRAINAGE BASIN             |
|  | TIME OF CONCENTRATION PATH |
|  | FLOW ARROW                 |
|  | BASIN INFORMATION          |

| Area ID       | Sheet Flow |             |                |               |                            | Shallow Concentrated |       |               |                          | Channel     |                |                       | T <sub>c</sub> (min) | T <sub>C, Lag</sub> (T <sub>c</sub> * 0.6) [min] |
|---------------|------------|-------------|----------------|---------------|----------------------------|----------------------|-------|---------------|--------------------------|-------------|----------------|-----------------------|----------------------|--------------------------------------------------|
|               | n          | Length (ft) | P <sub>2</sub> | Slope (ft/ft) | T <sub>(sheet)</sub> (min) | Length (ft)          | K     | Slope (ft/ft) | T <sub>(SCF)</sub> (min) | Length (ft) | Velocity (fps) | T <sub>ch</sub> (min) |                      |                                                  |
| EXIST BASIN 1 | 0.15       | 100         | 3.44           | 0.004         | 17.99                      | 1234                 | 16.13 | 0.0025        | 25.50                    | 233         | 3              | 1.29                  | 44.79                | 26.87                                            |

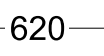
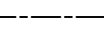




NOTES:

- 1.) HYDRAULIC CALCULATIONS DEVELOPED USING SCS METHOD AS DESCRIBED IN TR-55 "URBAN HYDROLOGY FOR SMALL WATERSHEDS" BY USDA DATED JUNE 1986 & HEC-HMS VERSION 3.5.
- 2.) 24-HOUR DEPTHS WERE OBTAINED FROM TXDOT WILLIAMSON COUNTY DEPTH-DURATION TABLES.
- 3.) EXISTING CONTOURS DISPLAYED ARE A MERGE OF 2017 GROUND SURVEY AND 2006 LIDAR FLOWN BY WILLIAMSON COUNTY.
- 4.) EXISTING DETENTION FACILITIES WERE DEVELOPED AS PART OF THE EXPO CENTER MASTER PLAN AS SHOWN IN WILLIAMSON COUNTY EXPO CENTER RECORD DRAWING SET DATED JAN. 20, 2017 BY HALFF ASSOCIATES WHICH INCLUDES THE PROPOSED IMPROVEMENTS AS PART OF THE CALCULATIONS FOR REQUIRED DETENTION.
- 5.) MASTER PLANNED CURVE NUMBER OF 94.98 EXCEEDS THE PROPOSED CURVE NUMBER OF 89.58 THEREFORE NO ADDITIONAL DETENTION IS REQUIRED.

LEGEND

-  CONTROL POINT
-  EXIST LAMP POST
-  EXIST SIGN
-  EXIST ELEC MANHOLE
-  EXIST POWER POLE
-  EXIST WATER VALVE
-  EXIST GUY WIRE
-  EXIST SEWER MANHOLE
-  EXIST EDGE OF CONCRETE
-  EXIST EDGE OF ASPHALT
-  EXIST CONTOUR
-  PROP CONTOUR
-  DRAINAGE BASIN
-  TIME OF CONCENTRATION PATH
-  FLOW ARROW
-  BASIN ID

 ACRE

 Q<sub>100</sub>
- BASIN INFORMATION

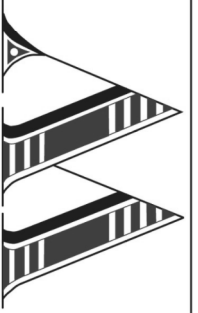
PROPOSED DRAINAGE AREA FLOWS

| BASIN ID            | AREA    | AREA     | IMP AREA | IMP % | SOIL TYPE | BASE CN | WEIGHTED CN* | TC CALC | TC USED | Q_2   | Q_10  | Q_25  | Q_100 |
|---------------------|---------|----------|----------|-------|-----------|---------|--------------|---------|---------|-------|-------|-------|-------|
|                     | [ACRE]  | [SQ MI]  | [ACRE]   | [%]   |           |         |              | [MIN]   | [MIN]   | [CFS] | [CFS] | [CFS] | [CFS] |
| CULVERT A (RV PARK) | 1.4739  | 0.002303 | 1.2535   | 85.0% | D         | 78      | 95.01        | 5.85    | 10.00   | 4.7   | 7.8   | 9.4   | 12.7  |
| CULVERT B (ROAD)    | 9.0109  | 0.01408  | 5.8241   | 64.6% | D         | 78      | 90.93        | 6.18    | 10.00   | 26.4  | 45.4  | 55.9  | 76.1  |
| BASIN 1             | 10.7299 | 0.016765 | 6.2151   | 57.9% | D         | 78      | 89.58        | 9.44    | 10.00   | 51.9  | 53.1  | 65.7  | 89.8  |

\*IMPERVIOUS AREA ASSUMED AT CN=98 PER FULLY DEVELOPED URBAN AREA PAVED SOIL GROUP D PER TR-55 "URBAN HYDROLOGY FOR SMALL WATERSHEDS TABLE 2-2A.

TIME OF CONCENTRATION CALCULATIONS: PROPOSED

| Area ID             | Sheet Flow |             |                |               |                            | Shallow Concentrated |       |               |                          | Channel     |                |                       |      | T <sub>c</sub> (calc) | T <sub>c</sub> (min) | T <sub>c, Lag</sub> (T <sub>c</sub> * 0.6) [min] |
|---------------------|------------|-------------|----------------|---------------|----------------------------|----------------------|-------|---------------|--------------------------|-------------|----------------|-----------------------|------|-----------------------|----------------------|--------------------------------------------------|
|                     | n          | Length (ft) | P <sub>i</sub> | Slope (ft/ft) | T <sub>(sheet)</sub> (min) | Length (ft)          | K     | Slope (ft/ft) | T <sub>(SCF)</sub> (min) | Length (ft) | Velocity (fps) | T <sub>Ch</sub> (min) |      |                       |                      |                                                  |
| CULVERT A (RV PARK) | 0.011      | 100         | 3.44           | 0.005         | 2.03                       | 102                  | 20.32 | 0.0050        | 1.18                     | 473         | 3              | 2.63                  | 5.85 | 10.00                 |                      | 6.00                                             |
| CULVERT B (ROAD)    | 0.011      | 87          | 3.44           | 0.005         | 1.82                       | 0                    | 20.32 | 0.0050        | 0.00                     | 784         | 3              | 4.36                  | 6.18 | 10.00                 |                      | 6.00                                             |
| BASIN 1             | 0.011      | 100         | 3.44           | 0.005         | 2.03                       | 91                   | 20.32 | 0.0050        | 1.06                     | 1143        | 3              | 6.35                  | 9.44 | 10.00                 |                      | 6.00                                             |



WILLIAMSON COUNTY  
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Revision No. Description Date

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12-312

12-4-17

STATE OF TEXAS

SHAWN M. BERTRAM

98190

LICENSED PROFESSIONAL ENGINEER



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Project No.: 32388

Issued: 12/04/2017

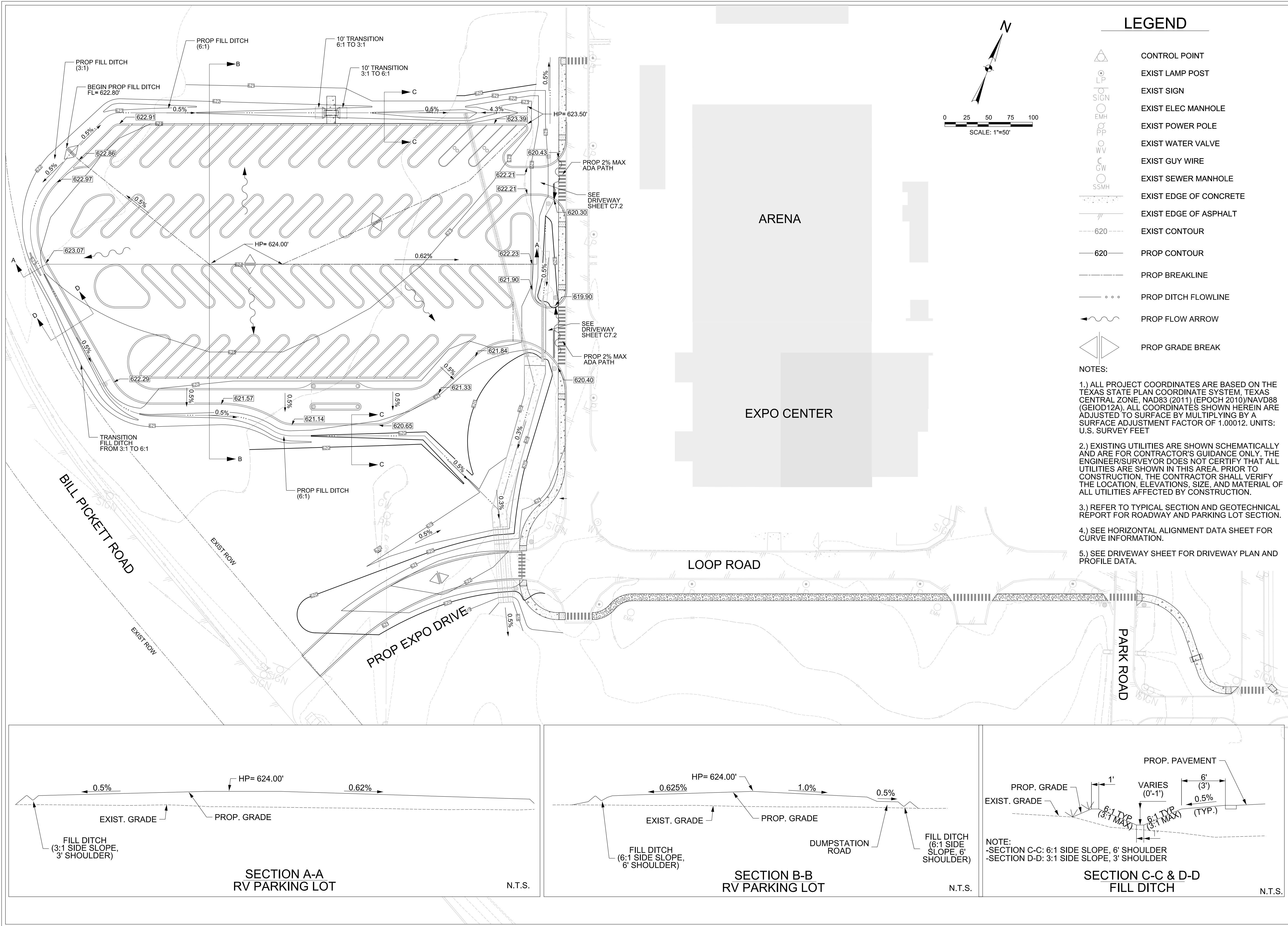
Drawn By: JN

Checked By: SB

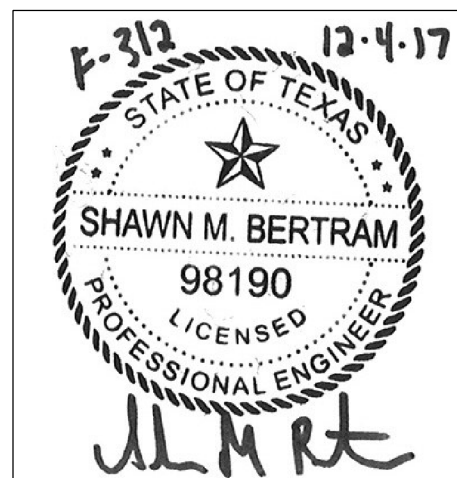
PROPOSED DRAINAGE AREA MAP

C2.2





| Revision No. | Date | Description |
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Issued: 12/04/2017  
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Checked By: SB

GRADING  
PLAN

C3.1



LEGEND

- EXIST EDGE OF CONCRETE
- EXIST EDGE OF ASPHALT
- EXIST CONTOUR
- PROP CONTOUR
- PROP SILT FENCE
- PROP CONCRETE TRAIL
- PROP GRANITE TRAIL
- PROP ROCK BERM

NOTES:

- 1.) CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROLS PRIOR TO BEGINING ANY OTHER WORK.
- 2.) EXISTING UTILITIES ARE SHOWN SCHEMATICALLY AND ARE FOR CONTRACTOR'S GUIDANCE ONLY. THE ENGINEER/SURVEYOR DOES NOT CERTIFY THAT ALL UTILITIES ARE SHOWN IN THIS AREA. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATIONS, SIZE, AND MATERIAL OF ALL UTILITIES AFFECTED BY CONSTRUCTION.
- 3.) CONTRACTOR TO COORDINATE LOCATION OF CONSTRUCTION ENTRANCE WITH COUNTY PRIOR TO INSTALLATION.

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12-4-17

STATE OF TEXAS

SHAWN M. BERTRAM

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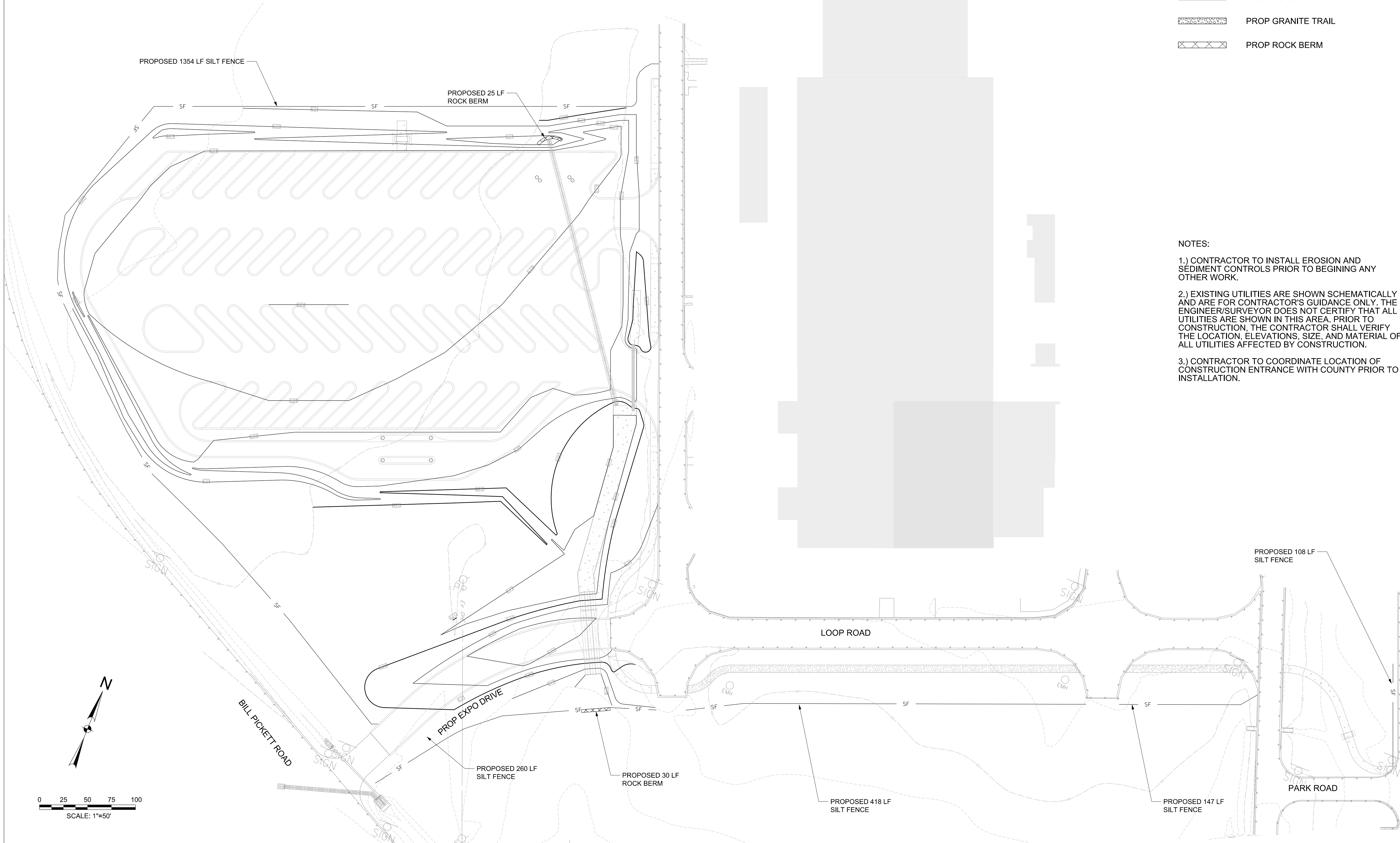
JLM Rt

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| Project No.: | 32388      |
| Issued:      | 12/04/2017 |
| Drawn By:    | JN         |
| Checked By:  | SB         |

EROSION CONTROL

C3.2





## LEGEND

|  |                                         |
|--|-----------------------------------------|
|  | CONTROL POINT                           |
|  | EXIST LAMP POST                         |
|  | EXIST SIGN                              |
|  | EXIST ELEC MANHOLE                      |
|  | EXIST POWER POLE                        |
|  | EXIST WATER VALVE                       |
|  | EXIST GUY WIRE                          |
|  | EXIST SEWER MANHOLE                     |
|  | EXIST EDGE OF CONCRETE                  |
|  | EXIST EDGE OF ASPHALT                   |
|  | PROP WASTEWATER                         |
|  | PROP WATER                              |
|  | PROP WASTEWATER                         |
|  | PROP WATER                              |
|  | PROP CONCRETE PEDESTAL PAD AND PEDESTAL |
|  | PROP WASTEWATER CLEANOUT                |
|  | PROP WASTEWATER MH                      |
|  | PROP ENCASEMENT                         |

## NOTES:

1.) THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED ON INFORMATION PROVIDED BY COUNTY STAFF TO THE BEST OF THEIR KNOWLEDGE. THERE MAY BE OTHER UNKNOWN EXISTING UTILITIES NOT SHOWN ON THE PLANS. ALL EXISTING UTILITIES SHALL BE FIELD VERIFIED AND PROTECTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

2.) SEE SHEET C4.2 FOR WW PROFILES.

3.) CONTRACTOR TO VERIFY DEPTH OF EXIST WWL PRIOR TO WORK. NOTIFY ENGINEER IMMEDIATELY IF EXIST WW FL DIFFERS FROM WHAT IS SHOWN ON PLANS.

4.) ALL WASTEWATER MAINS SHALL BE INSTALLED WITH CRUSHED STONE BEDDING.

5.) AT WATER - WASTEWATER CROSSING LOCATIONS WASTEWATER PIPE SHALL BE ASTM-2241 FOR MIN. 20-FT CENTERED ON CROSSING.

6.) WATERLINE TO BE INSTALLED MIN. 3-FT BELOW FINAL GRADE. WHERE WATERLINE CROSSES UNDER WASTEWATER, WATERLINE TO BE INSTALLED MIN 1-FT BELOW WASTEWATER.

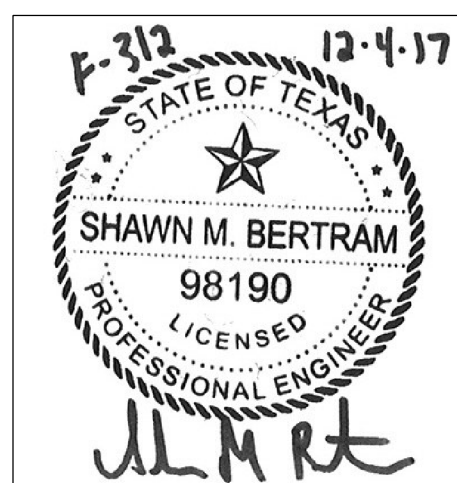
7.) SEWER SERVICES TO BE INSTALLED WITH FOOT OPERATED LOCKING LID ENVIRO DESIGN PRODUCTS FOOTLOOSE SEWER CAP OR EQUAL. SUBSIDIARY TO SEWER SERVICE BID ITEM

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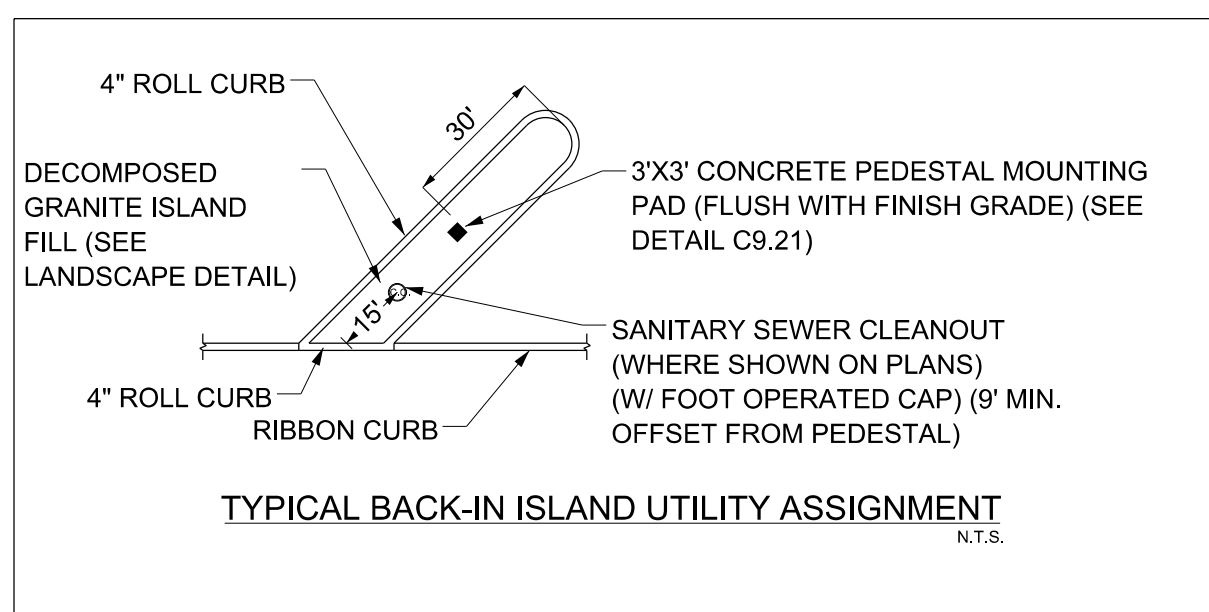
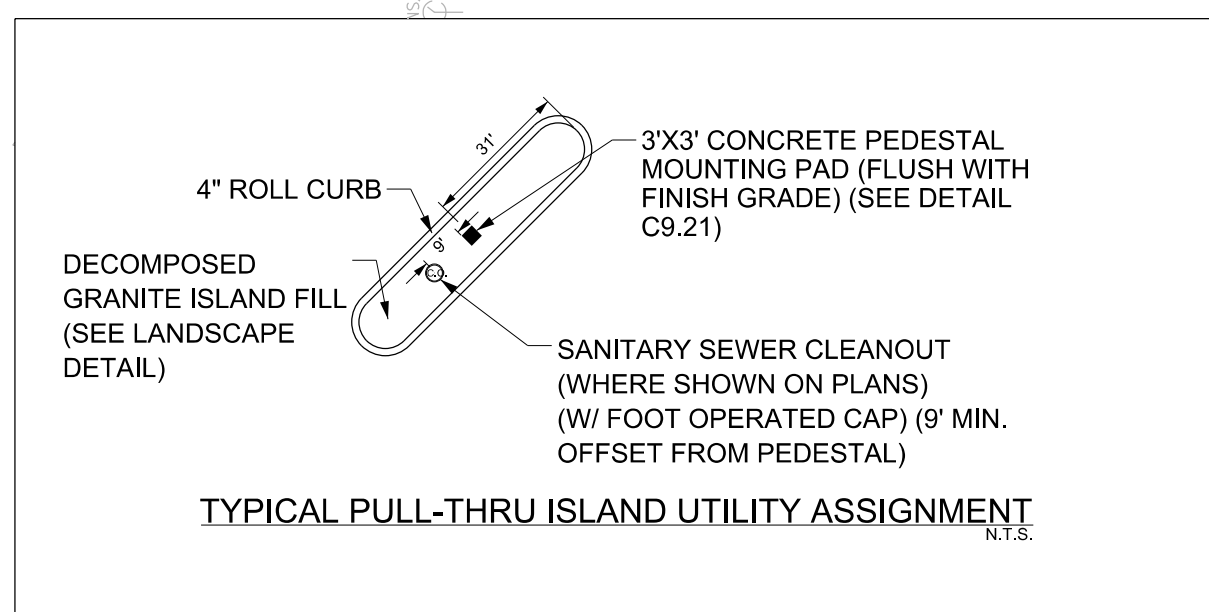
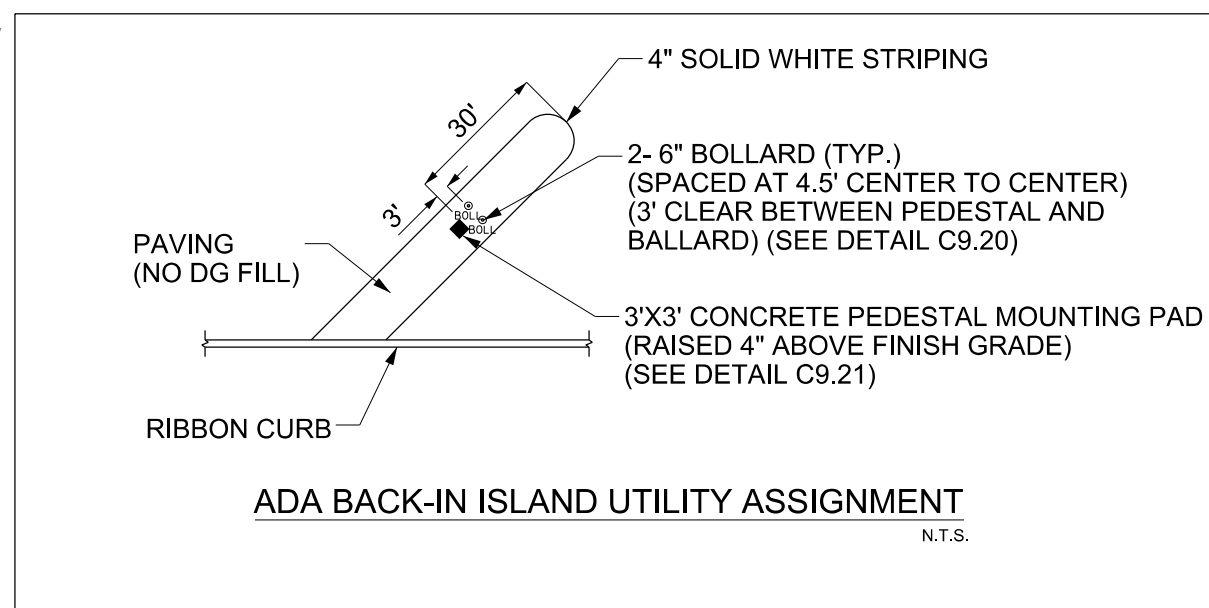
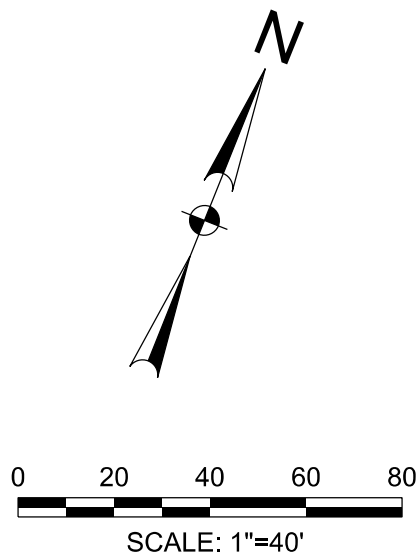


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Project No.: 32388  
Issued: 12/04/2017  
Drawn By: JN  
Checked By: SB

WASTE WATER  
PLAN

C4.1



ADA BACK-IN RV SPOT  
(SEE UTILITY ASSIGNMENT THIS SHEET)

BACK-IN RV SPOT (TYP.)  
(SEE UTILITY ASSIGNMENT THIS SHEET)

PULL-THRU RV SPOT (TYP.)  
(SEE UTILITY ASSIGNMENT THIS SHEET)

PULL-THRU RV SPOT (TYP.)  
(SEE UTILITY ASSIGNMENT THIS SHEET)

34'  
(TYP.)  
SERVICE  
SPACING

BACK-IN RV SPOT (TYP.)  
(SEE UTILITY ASSIGNMENT THIS SHEET)

INSTALL:  
1377 LF 8-IN PVC SEWER SDR-26 ASTM D3034 PIPE  
40 LF 8-IN PVC SEWER SDR-26 ASTM 2241 PIPE  
140 LF 6-IN PVC SEWER SDR-26 ASTM D3034 PIPE  
1 5-FT DIA. PRECAST WWMH  
3 4-FT DIA. PRECAST WWMH

PROPOSED 45 LF CONCRETE ENCASEMENT  
(STA 1+95.69 - STA 2+40.69)  
(SEE DETAIL C9.18)

PROPOSED 50 LF CONCRETE ENCASEMENT  
(STA 1+51.07 - STA 2+01.07)  
(SEE DETAIL C9.18)

WW1 STA 1+65.00 ~ 8" WW-A  
CONNECT TO EXIST 8"  
WASTEWATER STUB  
BEGIN WW-A  
N= 10196383.90  
E= 3210815.00

WW2 STA 1+83.93 ~ 8" WW-A  
= STA 1+00 ~ 8" WW-B  
BEGIN PROP. WW-B  
CONNECT PROP. 8" OUT LINE-A (E)  
CONNECT PROP. 8" IN LINE-B (N)  
CONNECT PROP. 8" IN LINE-A (NW)  
INSTALL:  
1 - 4" DIA. PRE-CAST WWMH A2  
N= 10196376.86  
E= 3210797.43

WW3 STA 2+87.08 ~ 8" WW-A  
= STA 1+00 ~ 8" WW-C  
BEGIN PROP. WW-C  
CONNECT PROP. 8" OUT LINE-A (SE)  
CONNECT PROP. 8" IN LINE-A (NW)  
CONNECT PROP. 8" IN LINE-C (W)  
INSTALL:  
1 - 5" DIA. PRE-CAST WWMH A3  
N= 10196405.77  
E= 3210698.40

WW4 STA 2+31.61 ~ 8" WW-C  
= STA 1+00 ~ 8" WW-F  
INSTALL:  
1-45° WYE (8"x8")  
N= 10196356.86  
E= 3210576.22

WW5 STA 1+33.23 ~ 8" WW-F  
INSTALL:  
1- CLEANOUT  
1-DUMPSTATION LOCKING LID  
(SEE DETAIL)  
END WW-F  
N= 10196326.31  
E= 3210563.14

WW6 STA 2+55.11 ~ 8" WW-C  
INSTALL:  
1-CLEANOUT  
1-DUMPSTATION LOCKING LID  
(SEE DETAIL)  
END WW-C  
N= 10196348.13  
E= 3210554.41

WW7 STA 3+30.95 ~ 8" WW-A  
= STA 1+00 ~ 8" WW-D  
BEGIN PROP. WW-D  
CONNECT PROP. 8" OUT LINE-A (SE)  
CONNECT PROP. 8" IN LINE-A (N)  
CONNECT PROP. 8" IN LINE-D (W)  
INSTALL:  
1 - 4" DIA. PRE-CAST WWMH A4  
N= 10196418.07  
E= 3210656.30

WW8 STA 1+34.90 ~ 8" WW-D  
INSTALL:  
1-45° WYE (8"x6") (TYP.)  
9 LF 6-IN SEWER @ 0.5% (SW) (TYP.)  
1-CLEANOUT (6") (SW) (TYP.)  
TYPICAL ALL SERVICES LINE D  
N= 10196405.10  
E= 3210623.90

WW9 STA 2+41.02 ~ 8" WW-D  
INSTALL:  
1-TWO-WAY CLEANOUT  
N= 10196365.66  
E= 3210525.39

WW10 STA 2+35.02 ~ 8" WW-D  
INSTALL:  
1-CLEANOUT (8")  
END WW-D  
N= 10196293.55  
E= 3210345.28

WW11 STA 4+06.63 ~ 8" WW-A  
= STA 1+00 ~ 8" WW-E  
BEGIN PROP. WW-E  
CONNECT PROP. 8" OUT LINE-A (S)  
CONNECT PROP. 8" IN LINE-E (E)  
CONNECT PROP. 8" IN LINE-A (W)  
INSTALL:  
1 - 4" DIA. PRE-CAST WWMH A5  
14 LF 6-IN SEWER @ 0.5% (NW)  
1-CLEANOUT (6") (NW)  
N= 10196488.32  
E= 3210628.17

WW12 STA 4+41.40 ~ 8" WW-A  
INSTALL:  
1-45° WYE (8"x6") (TYP.)  
4 LF 6-IN SEWER @ 0.5% (NW) (TYP.)  
1-CLEANOUT (6") (NW) (TYP.)  
TYPICAL ALL SERVICES LINE A  
N= 10196475.40  
E= 3210595.89

WW13 STA 5+40.00 ~ 8" WW-A  
INSTALL:  
1-TWO-WAY CLEANOUT  
N= 10196438.76  
E= 3210504.36

WW14 STA 7+19.56 ~ 8" WW-A  
INSTALL:  
1-CLEANOUT (8")  
END WW-A  
N= 10196372.02  
E= 3210337.66

WW15 STA 1+27.25 ~ 8" WW-E  
INSTALL:  
1-45° WYE (8"x6") (TYP.)  
10 LF 6-IN SEWER @ 0.5% (NE)  
1-CLEANOUT (6") (NE)  
N= 10196498.45  
E= 3210653.47

WW16 STA 1+67.74 ~ 8" WW-E  
INSTALL:  
1-CLEANOUT (8")  
END WW-E  
N= 10196513.50  
E= 3210691.06

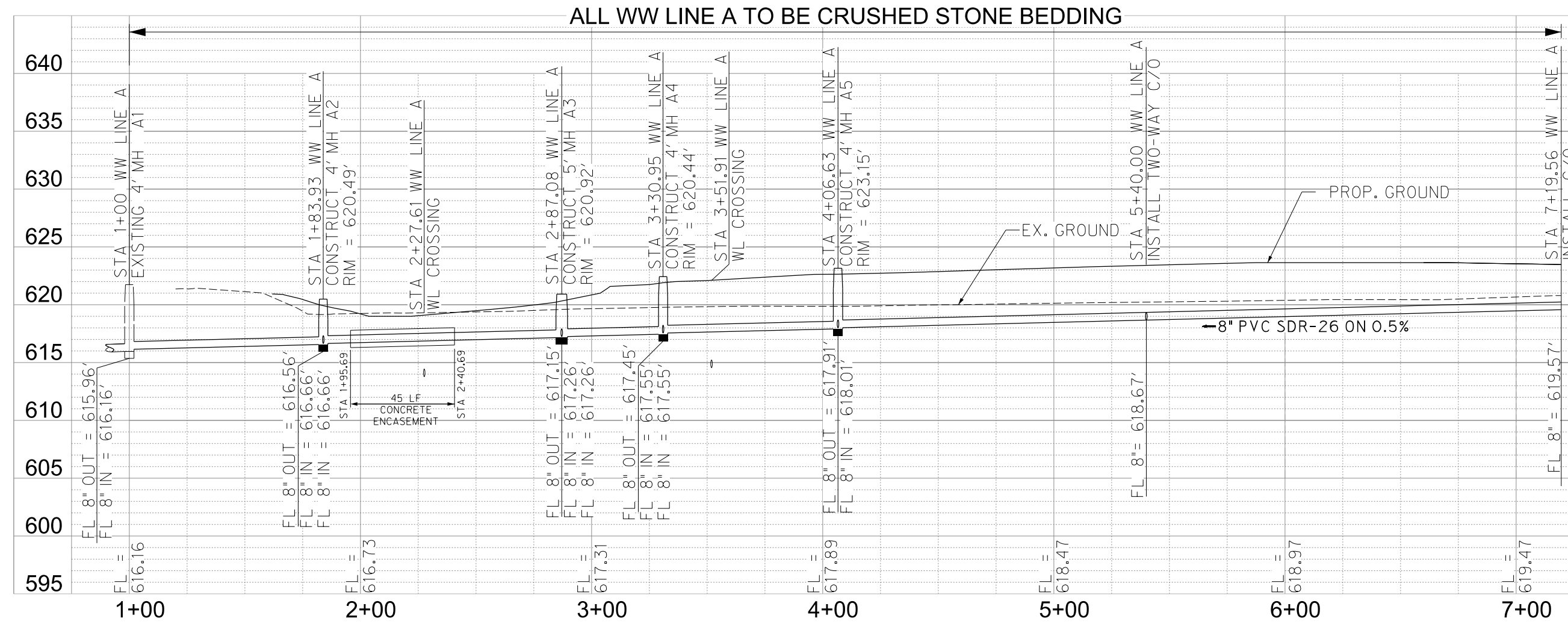
WW17 STA 3+38.56 ~ 8" WW-B  
INSTALL:  
1-45° WYE (8"x6")  
23 LF 6-IN SEWER @ 0.5% (NE)  
1-CLEANOUT (6") (NW)  
N= 10196601.50  
E= 3210717.12

WW18 STA 3+67.00 ~ 8" WW-B  
INSTALL:  
1-CLEANOUT (8")  
END WW-B  
N= 10196628.27  
E= 3210707.55

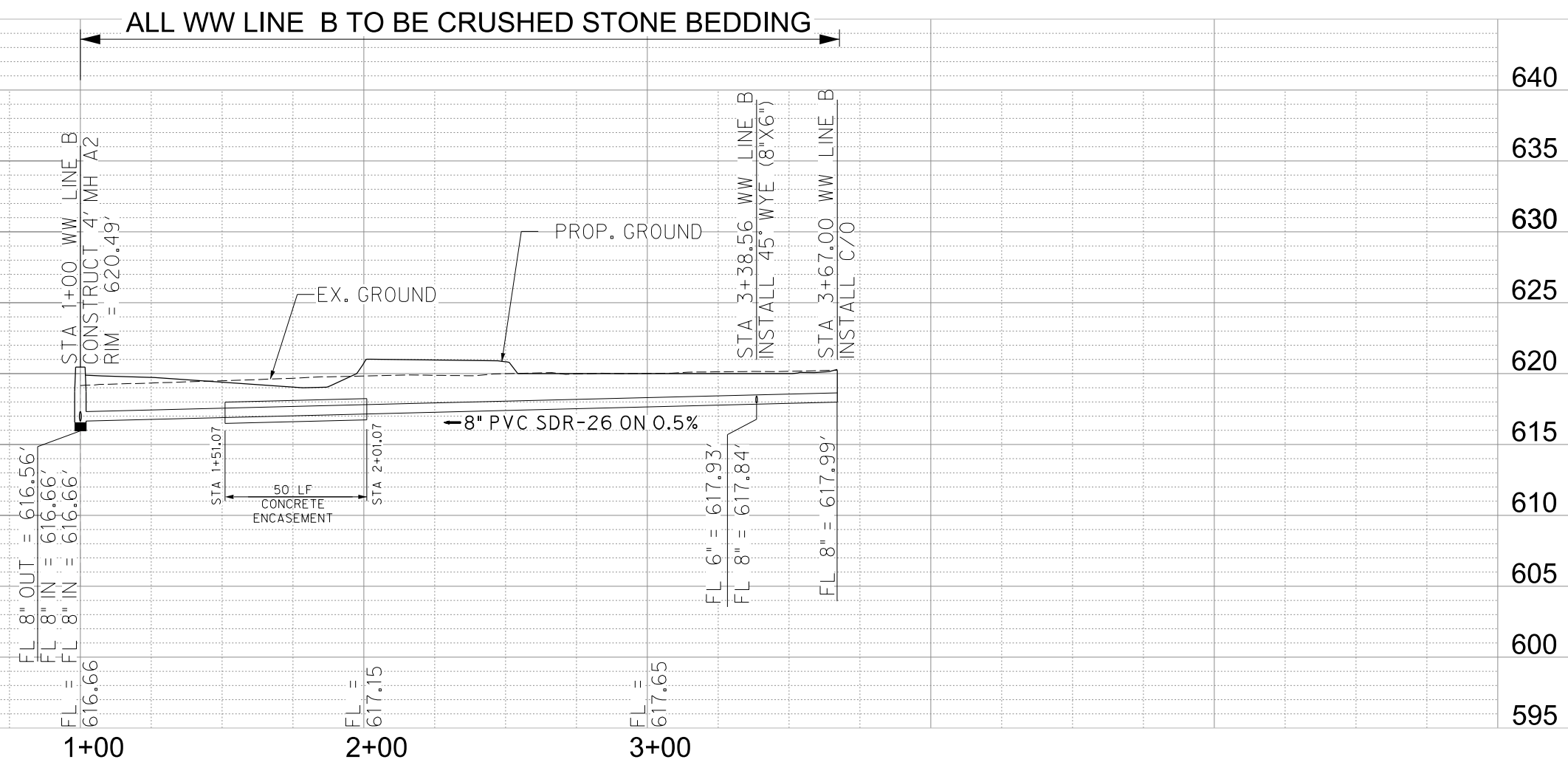


H: 1" = 50'  
V: 1" = 10'  
ON 22X34

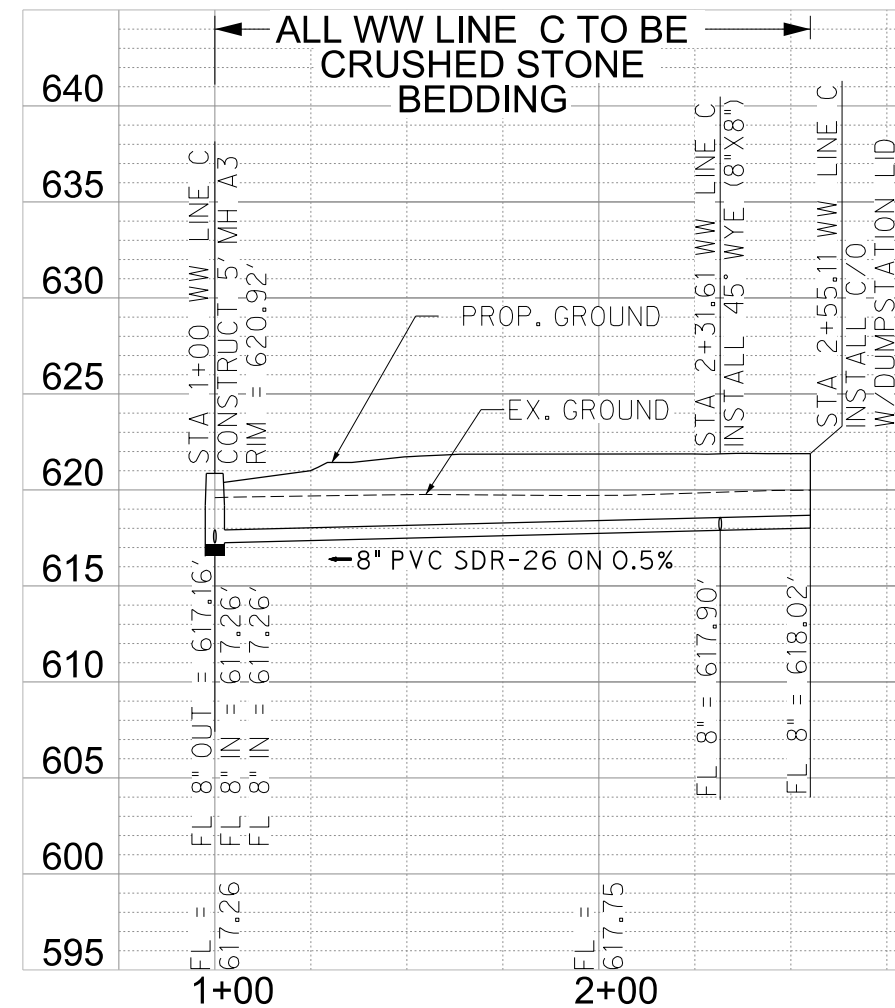
## WW LINE A



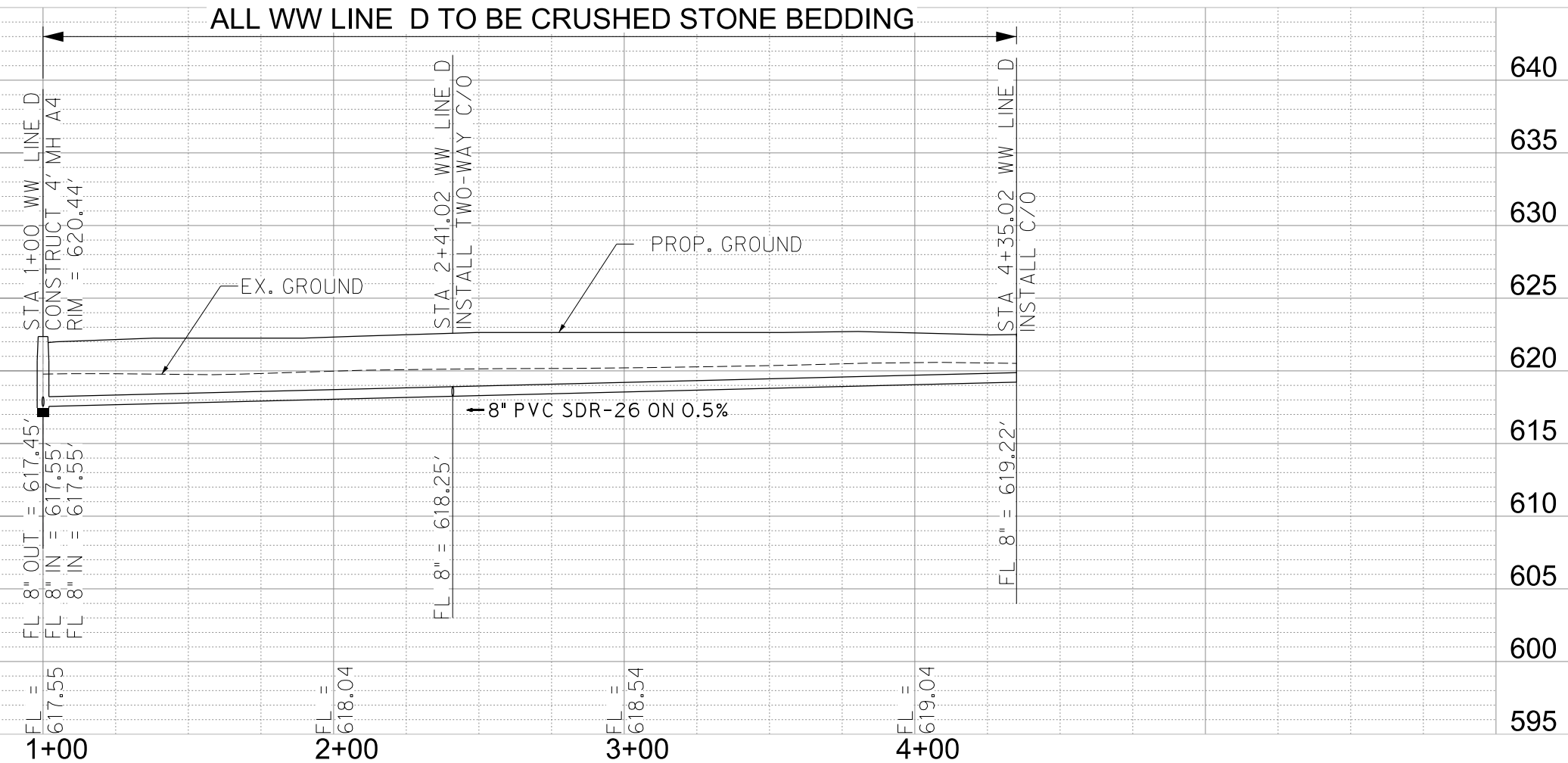
## WW LINE B



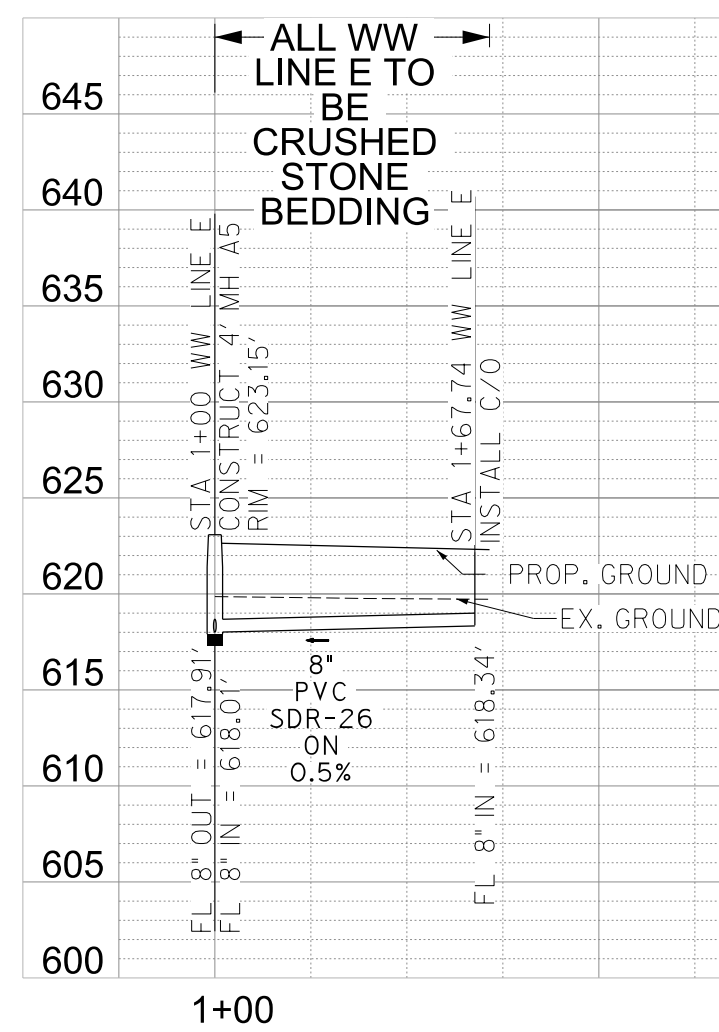
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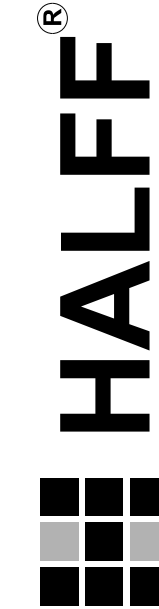
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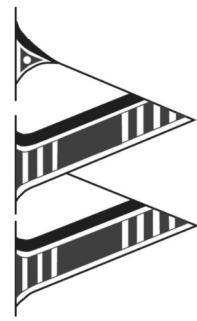
## WW LINE E



## WW LINE F

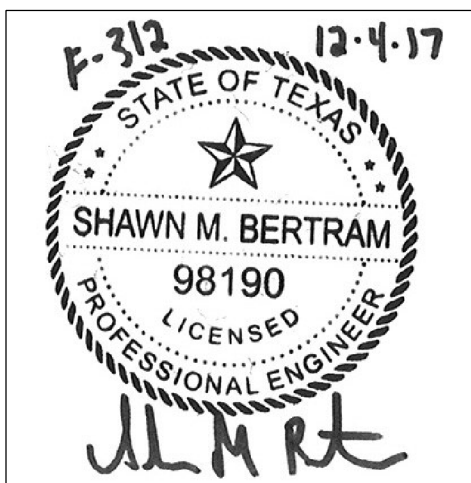


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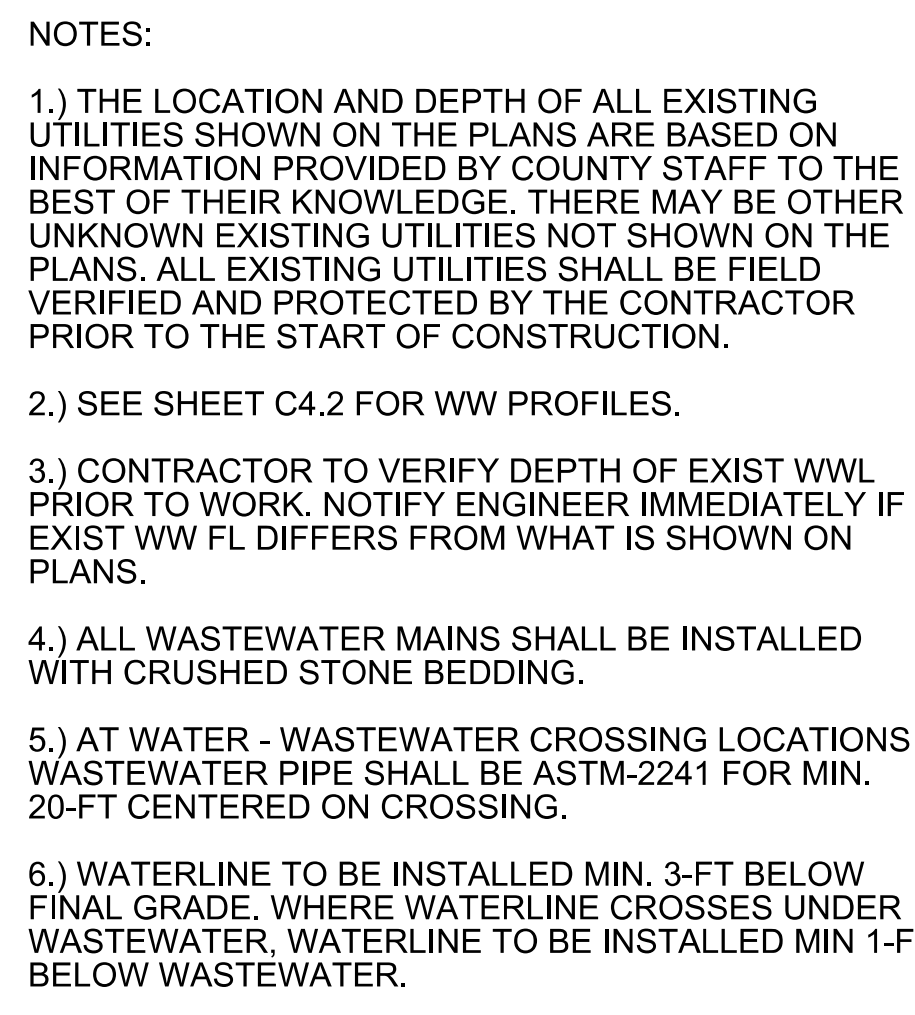
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Checked By: SB

WASTE WATER  
PROFILES

C4.2

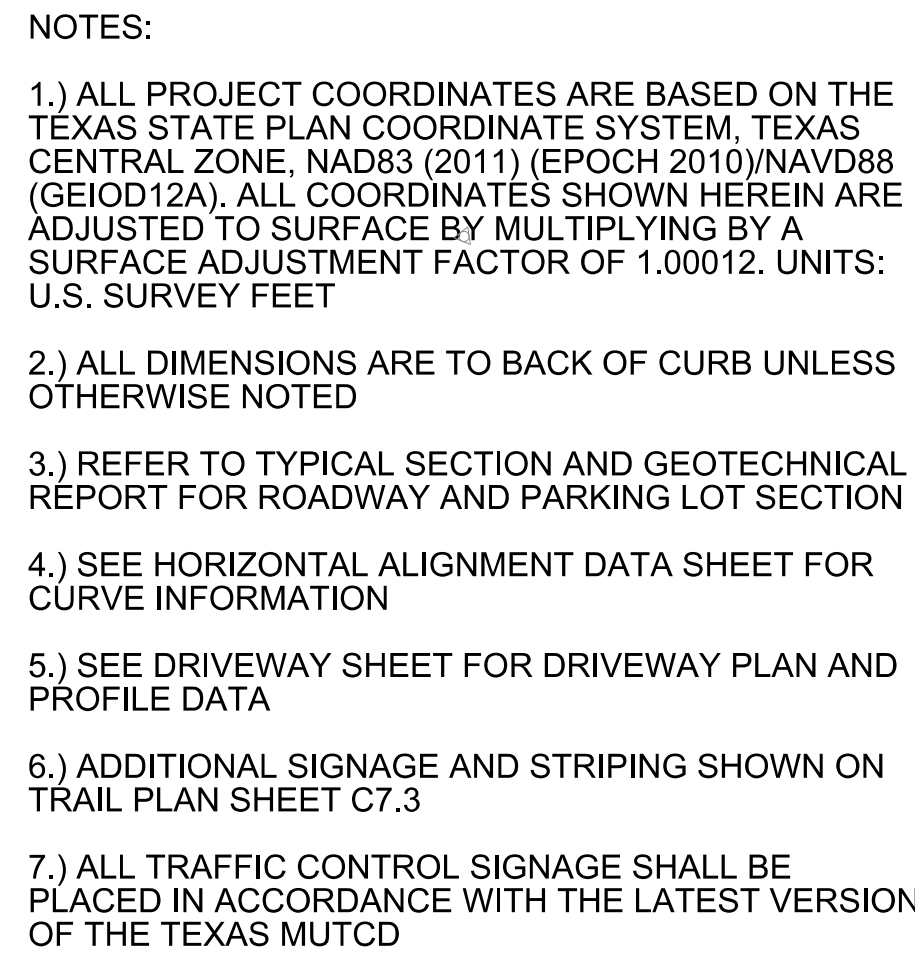




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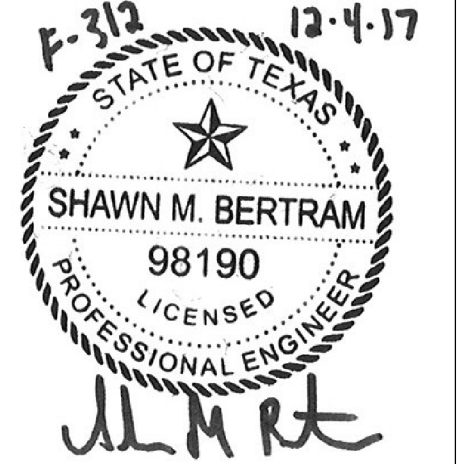
C4.3





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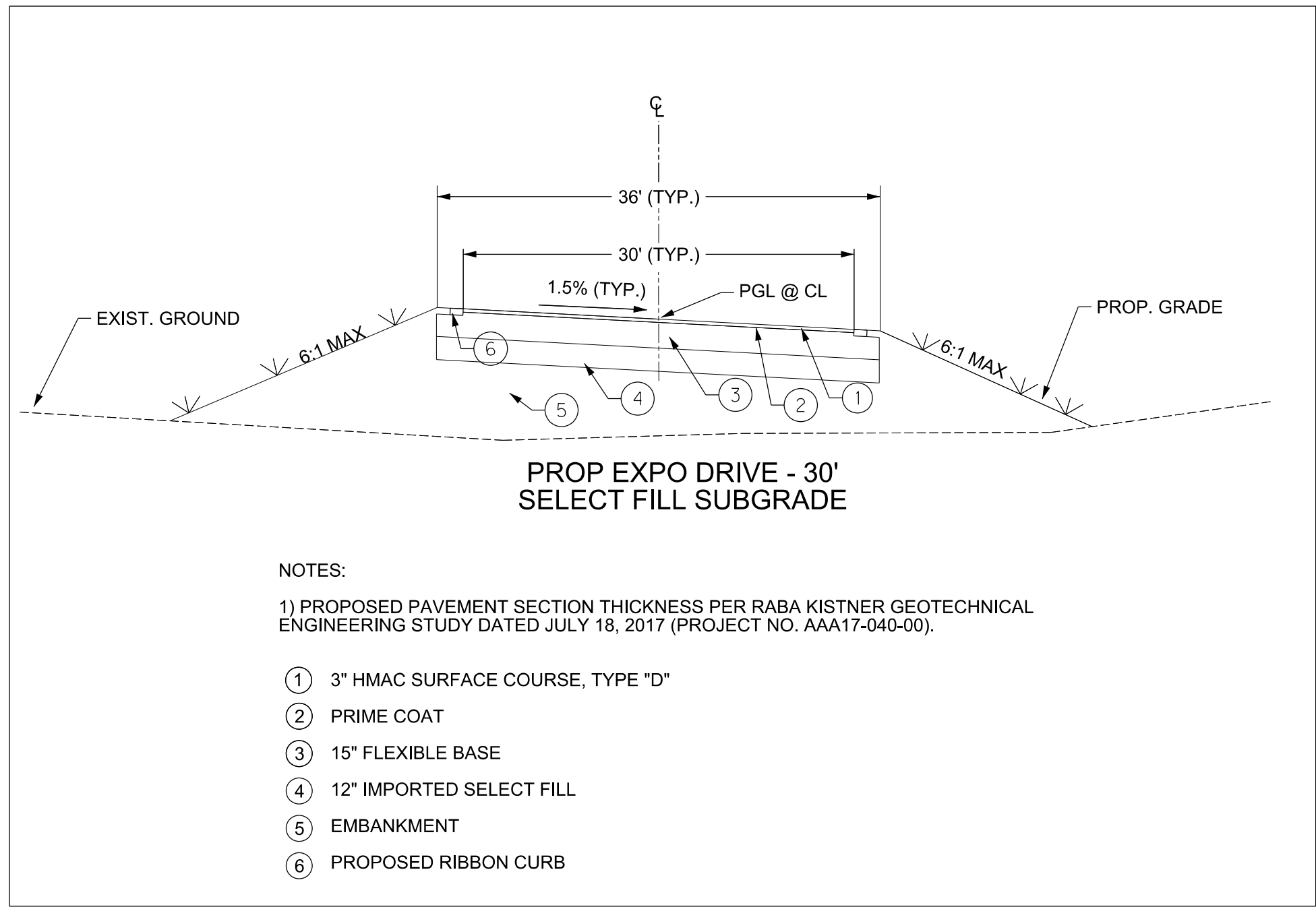
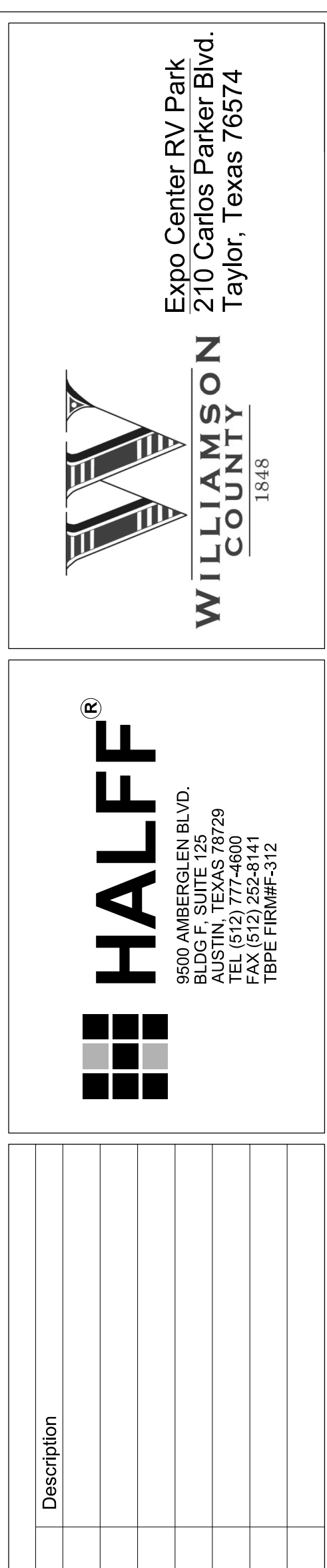
## SIGNAGE & DIMENSION CONTROL

C5.1

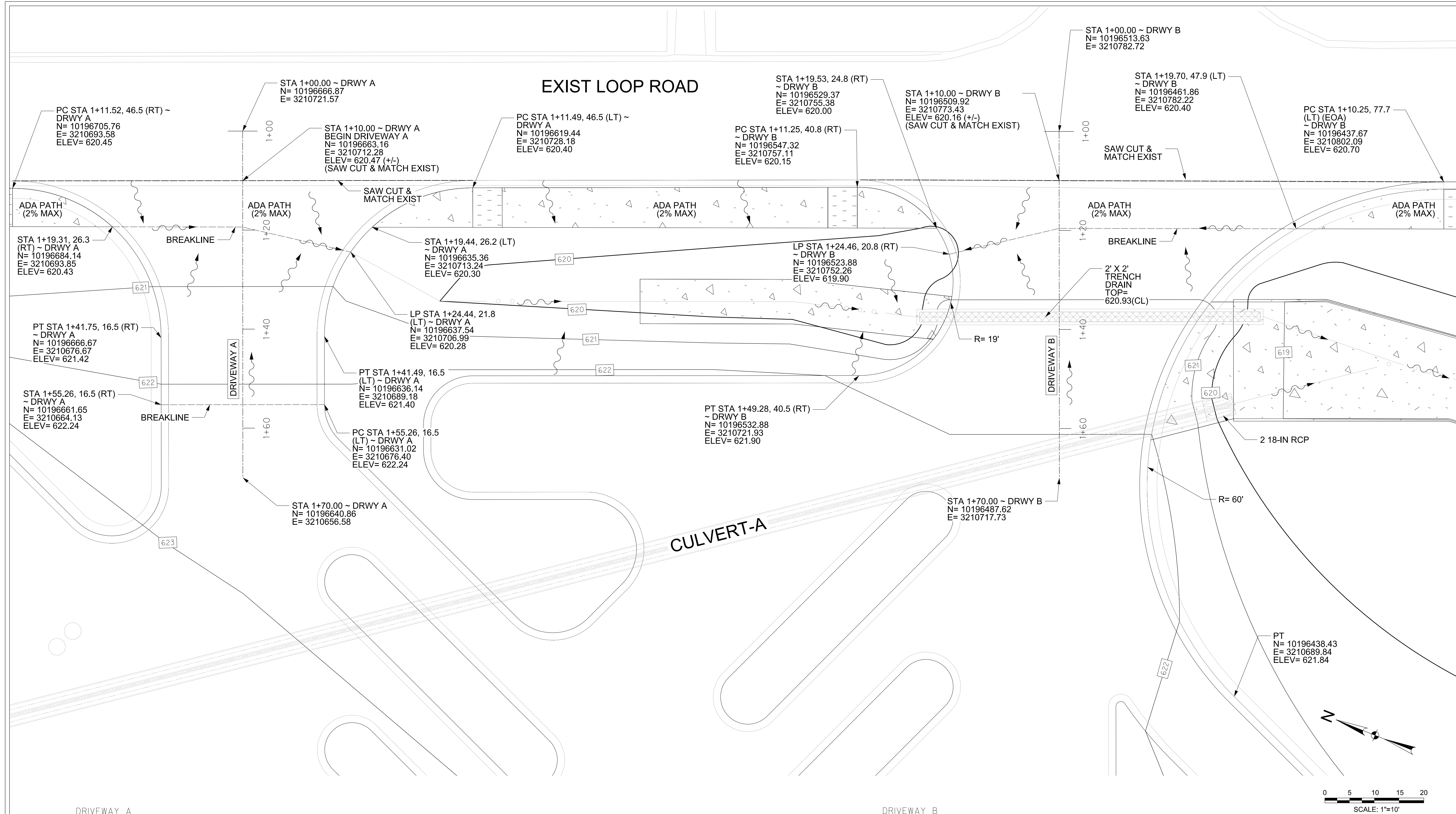




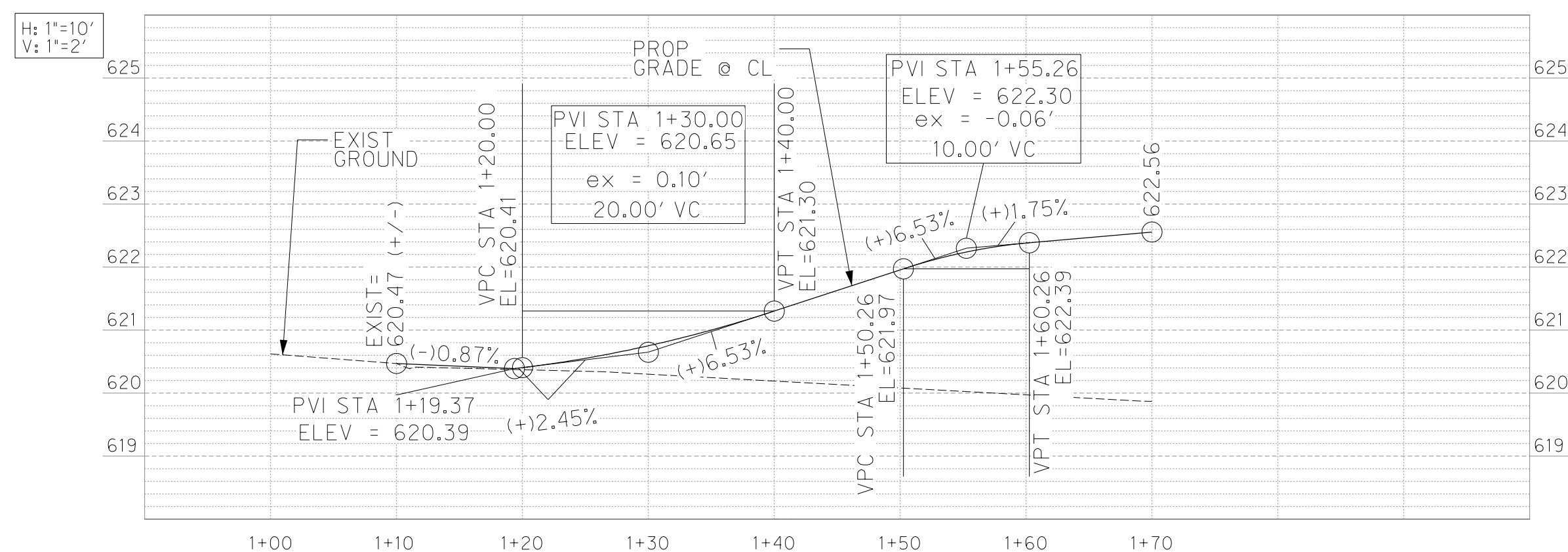




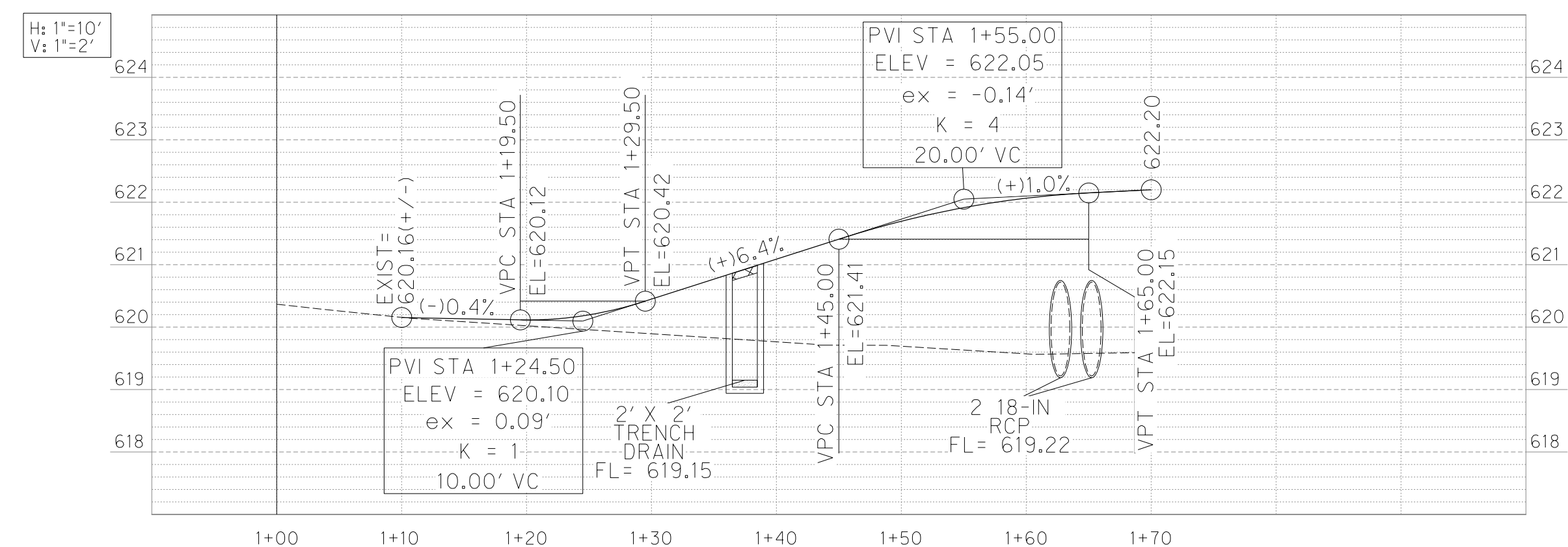




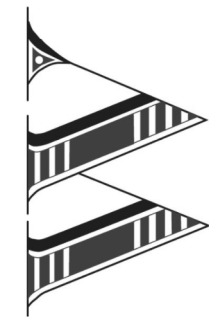
DRIVEWAY A



DRIVEWAY B

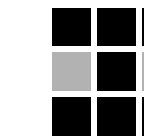


0 5 10 15 20  
SCALE: 1"=10'



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| Revision No. | Date | Description |
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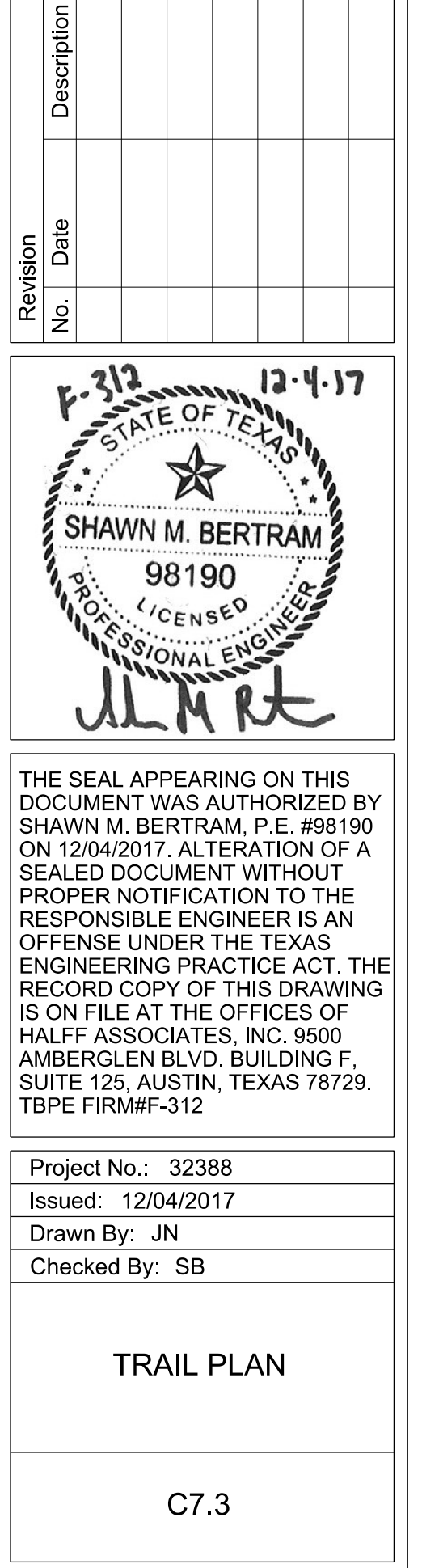
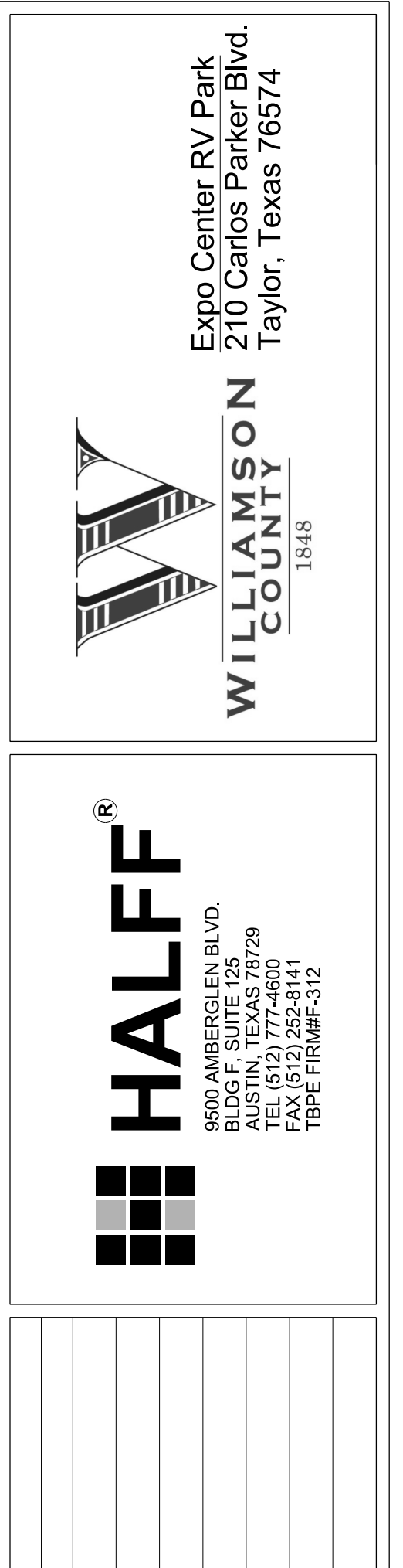
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY SHAWN M. BERTRAM, P.E. #98190 ON 12/04/2017. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT. THE RECORD COPY OF THIS DRAWING IS ON FILE AT THE OFFICES OF HALFF ASSOCIATES, INC. 9500 AMBERGLEN BLVD. BUILDING F, SUITE 125, AUSTIN, TEXAS 78729. TBPE FIRM#F-312

Project No.: 32388  
Issued: 12/04/2017  
Drawn By: JN  
Checked By: SB

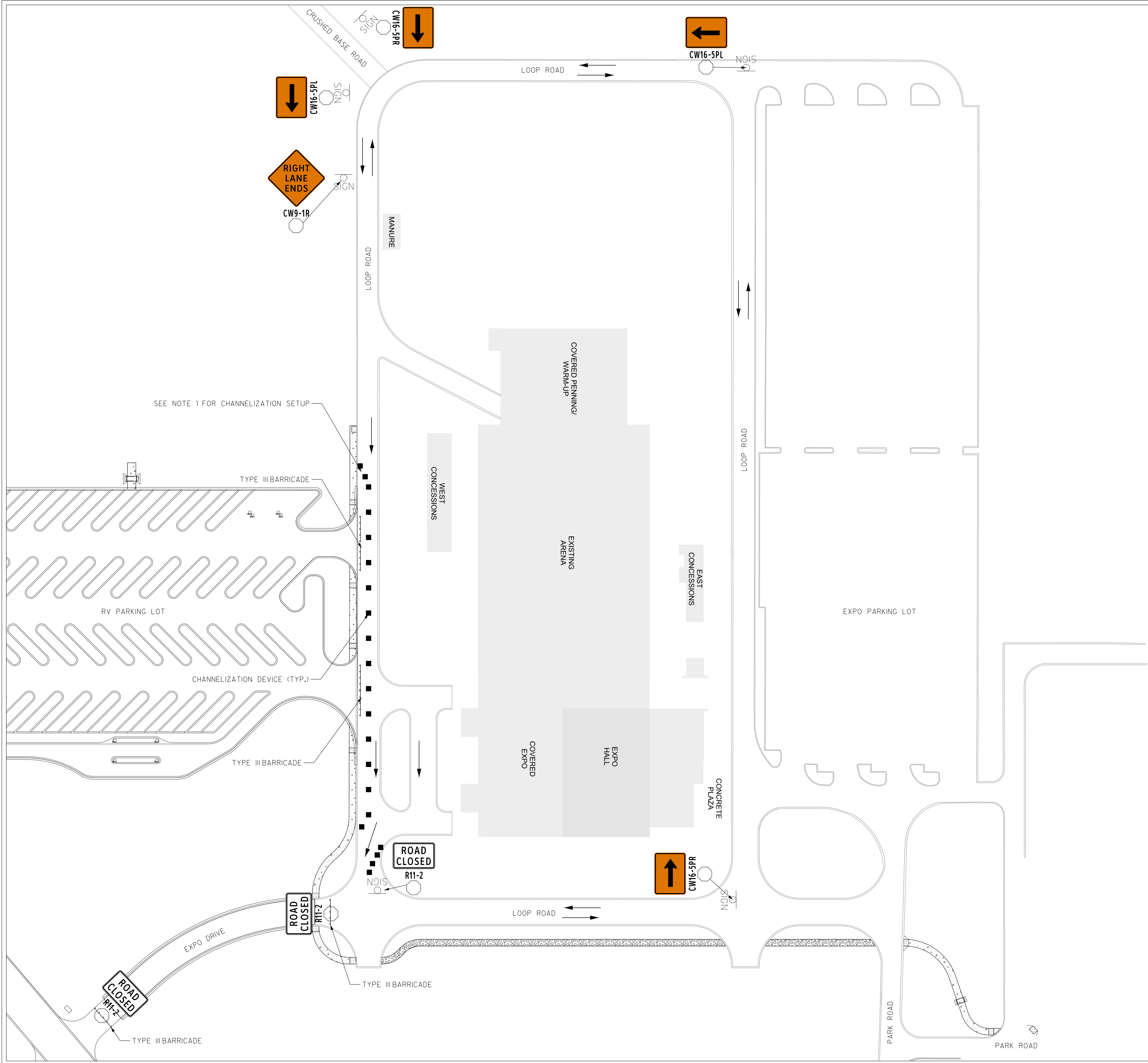
**DRIVEWAY  
PLAN & PROFILE**

C7.2







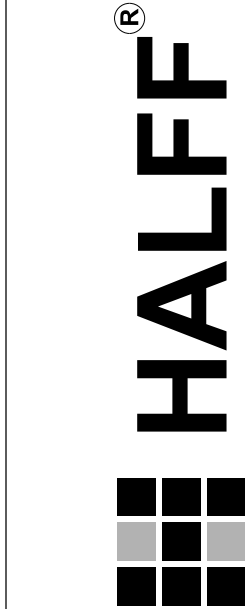


## LEGEND

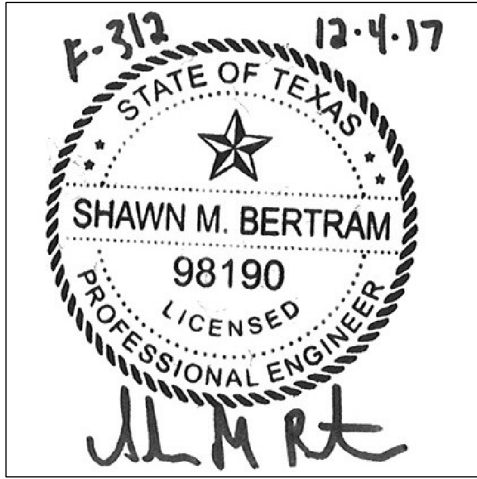
- CHANNELIZATION DEVICE
- ▨ TYPE III BARRICADE
- SIGN
- ← TRAFFIC DIRECTION

### NOTES:

- 1.) CONTRACTOR TO COORDINATE WITH CLINT CHITSEY OR APPOINTED COUNTY REPRESENTATIVE FOR EVENT TRAFFIC CONTROL AND LANE SHUTDOWN FOR SIGNAL LANE TRAFFIC.
- 2.) ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL BE PLACED PER THE LATEST VERSION OF THE TMUTCD.
- 3.) WESTERN PORTION OF LOOP ROAD TO BE CHANNELIZED FOR ONE WAY TRAFFIC WHEN NECESSARY.
- 4.) MAXIMUM BARREL SPACING 30-FT.
- 5.) TYPE III BARRICADES SHALL BE USED ON BOTH ENDS OF EXPO DRIVE.
- 6.) TYPE III BARRICADES SHALL BE USED ON BOTH DRIVEWAY ENTRANCES TO RV PARKING LOT.
- 7.) DIRECTIONAL ARROW SIGNS SHALL BE USED TO DIRECT ONE WAY FLOW AROUND LOOP ROAD. ADDITIONAL SIGNS REQUIRED BY COUNTY FOR EVENTS SHALL BE CONSIDERED SUBSIDIARY TO TRAFFIC CONTROL BID ITEM.



| Revision No. | Date | Description |
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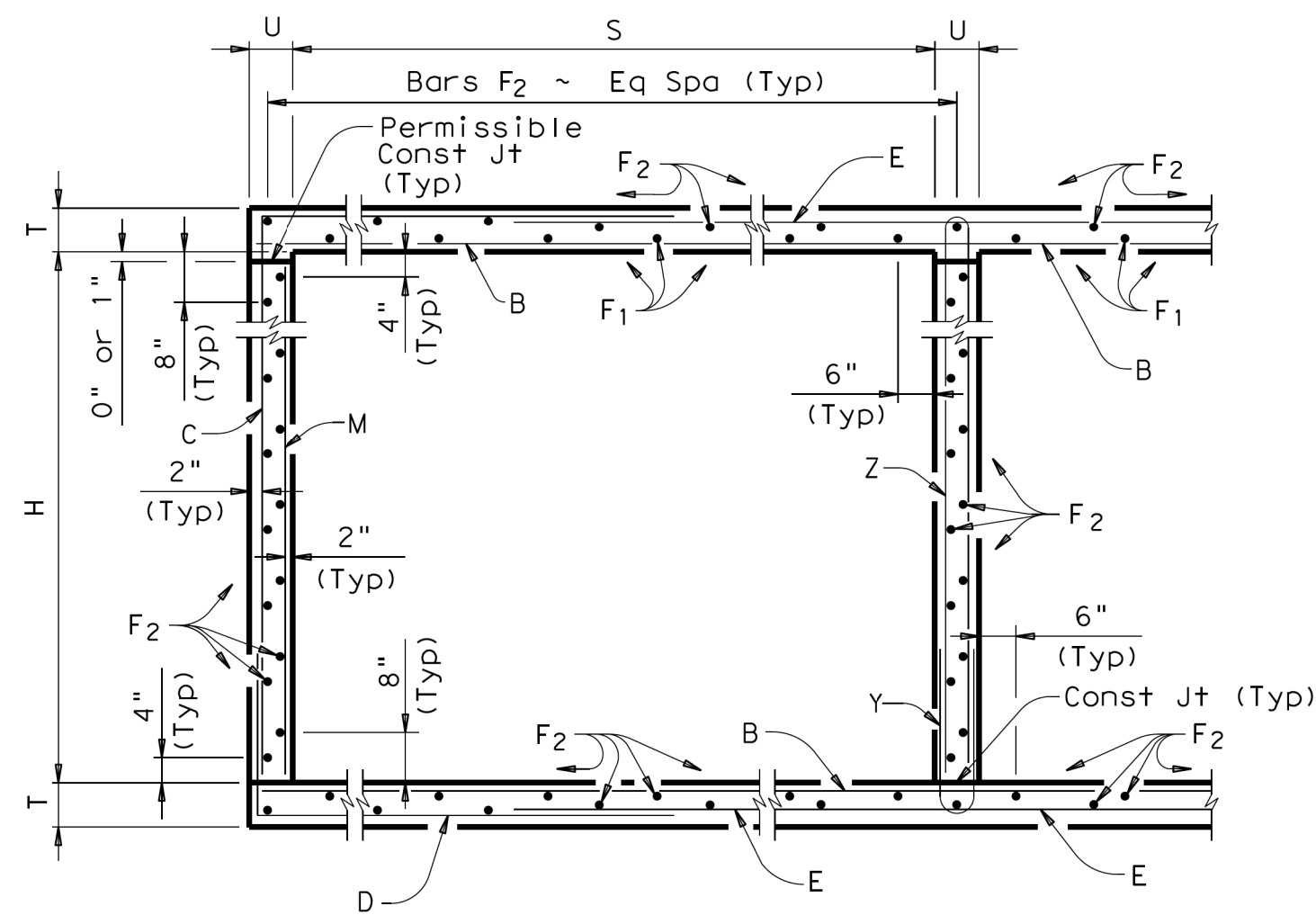
### TRAFFIC CONTROL PLAN

C8.1

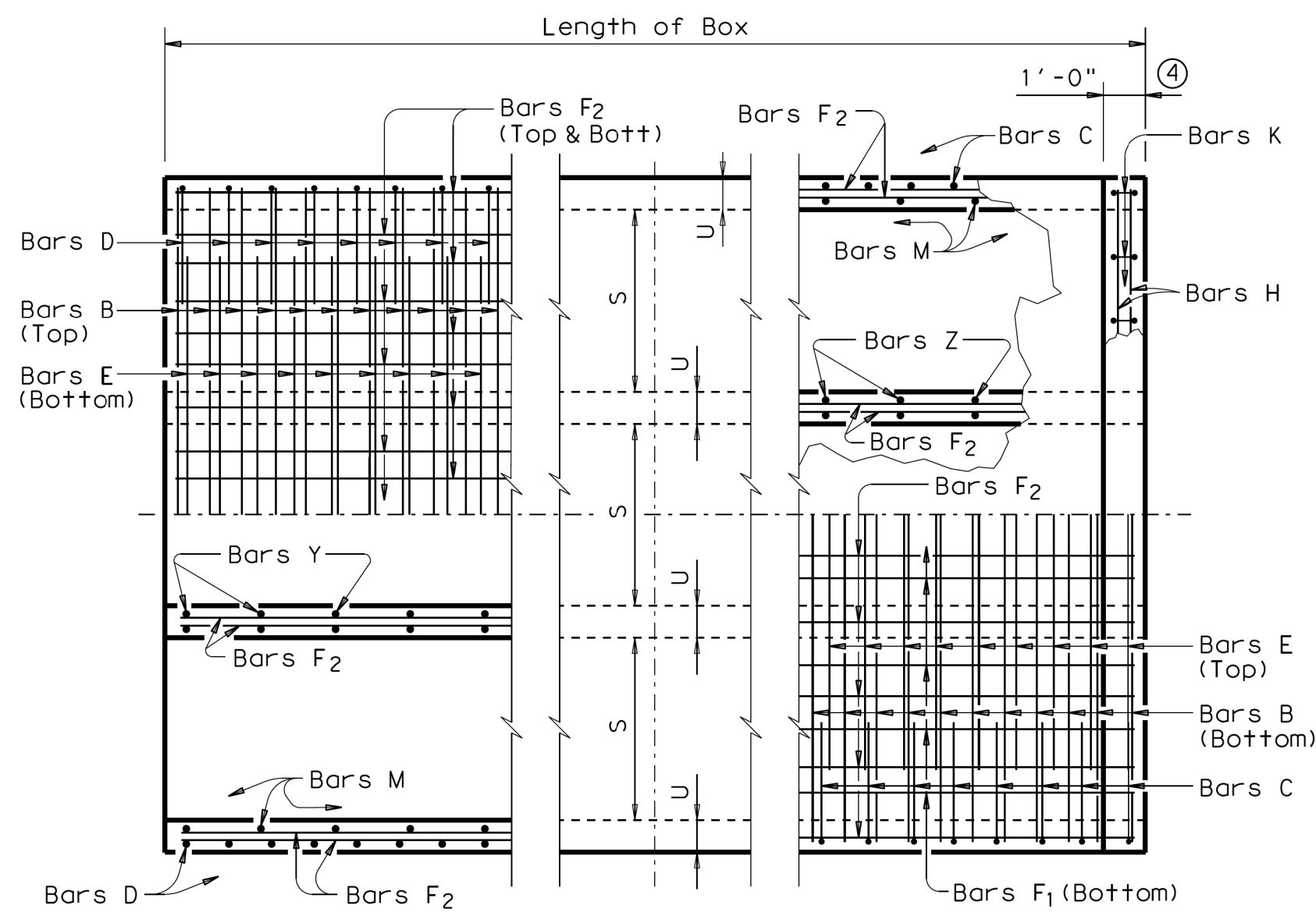


DISCLAIMER:  
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:  
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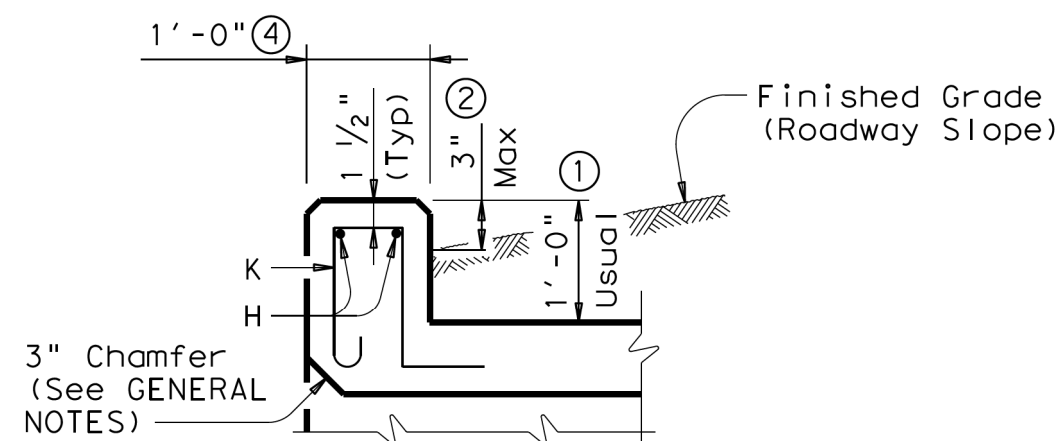
**TYPICAL SECTION**



**BOTTOM SLAB**

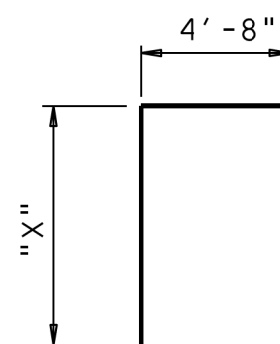
**PART PLANS**

**TOP SLAB**

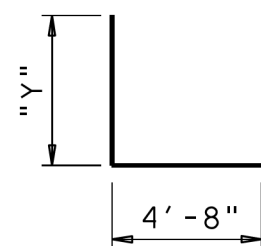


**SECTION THRU CURB**

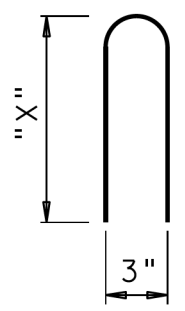
| H     | Bar Dimensions |       |
|-------|----------------|-------|
|       | "X"            | "Y"   |
| 2'-0" | 2'-5"          | 2'-2" |
| 3'-0" | 3'-5"          | 2'-2" |
| 4'-0" | 4'-5"          | 2'-2" |
| 5'-0" | 5'-5"          | 2'-2" |



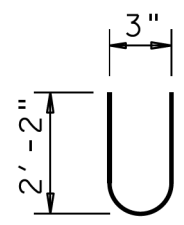
**BARS C**



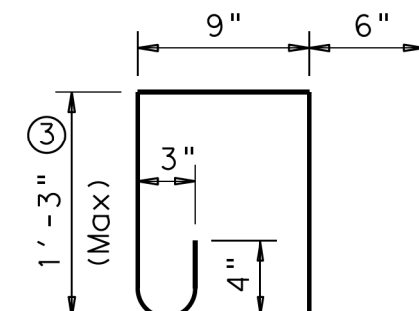
**BARS D**



**BARS Z**



**BARS Y**



**BARS K ~ #4**  
(Spa = 1'-0" Max)  
(Length = 4'-3")

- ① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- ② For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
  - For structures with bridge rail, curbs shall be flush with finished grade.
 Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- ④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
 WWR required =  $(0.44 \text{ sq in/ } 0.5') \times (60 \text{ ksi/} 70 \text{ ksi}) = 0.754 \text{ sq in/ft}$ .  
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing =  $(0.306 \text{ sq in/ } 0.754 \text{ sq in/ft}) \times 12 \text{ in/ft} = 4.87"$   
 Max spacing.  
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

**GENERAL NOTES:**

Designed according to AASHTO LRFD Specifications.  
 Designed to the maximum fill height shown.  
 All reinforcing steel shall be Grade 60.  
 All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.  
 Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.  
 The use of permanent forms is not allowed.  
 The bottom edge of the top slab shall be chamfered 3" at the entrance.  
 Reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.  
 Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option.  
 If this option is used, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed.  
 See standard MC-MD for skewed ends, angle sections and lengthening details.

HL93 LOADING

SHEET 1 OF 2



Bridge Division Standard

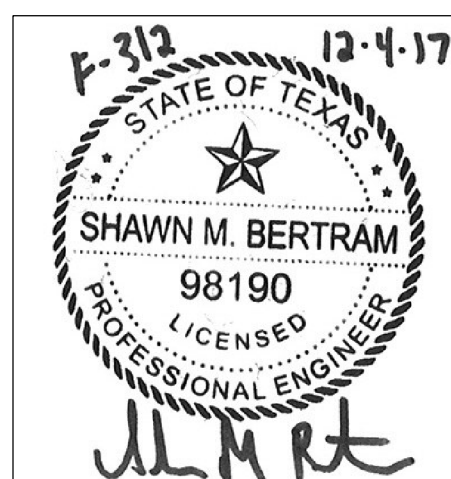
**MULTIPLE BOX CULVERTS**  
**CAST-IN-PLACE**  
**5'-0" SPAN**  
**0' TO 20' FILL**

**MC-5-20**

|                      |         |         |               |         |
|----------------------|---------|---------|---------------|---------|
| FILE: mc520ste.dgn   | DN: GAF | CK: LNW | DW: BWH/TxDOT | CK: GAF |
| ©TxDOT February 2010 | CONT    | SECT    | JOB           | HIGHWAY |
| REVISIONS            |         |         |               |         |
| 10-12: Added WWR     | DIST    | COUNTY  | SHEET NO.     |         |



| Revision No. | Date | Description |
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Project No.: 32388  
 Issued: 12/04/2017  
 Drawn By: JN  
 Checked By: SB

TxDOT DETAIL  
 MC-5-20  
 (1 OF 2)

C9.1



DATE: \_\_\_\_\_  
FILE: \_\_\_\_\_

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
WWR required =  $(0.44 \text{ sq in/ } 0.5') \times (60 \text{ ksi}/70 \text{ ksi}) = 0.754 \text{ sq in/ft.}$   
If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing =  $(0.306 \text{ sq in/ } 0.754 \text{ sq in/ft}) \times 12 \text{ in/ft} = 4.87"$   
Max spacing.  
Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

|                    |
|--------------------|
| Project No.: 32388 |
| Issued: 12/04/2017 |
| Drawn By: JN       |
| Checked By: SB     |

C9.2



**WILLIAMSON**  
COUNTY

Expo Center RV Park  
210 Carlos Parker Blvd.  
Taylor, Texas 76574

F-312 12-4-17

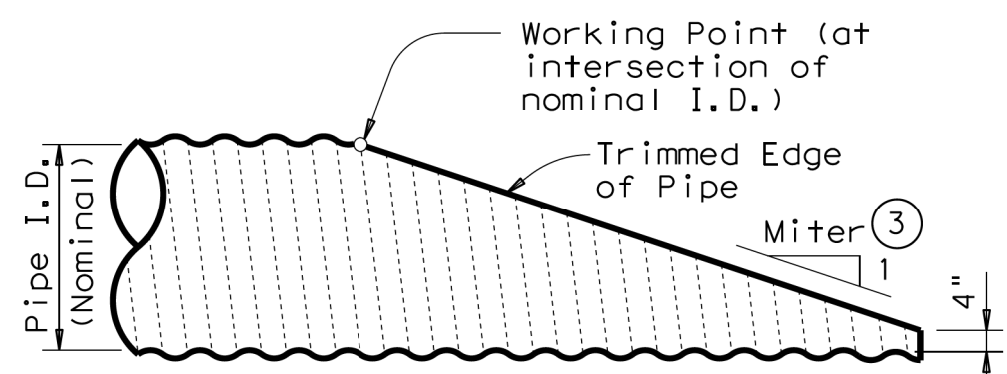


STATE OF TEXAS  
SHAWN M. BERTRAM  
98190  
LICENSED  
PROFESSIONAL ENGINEER

JLM Rt

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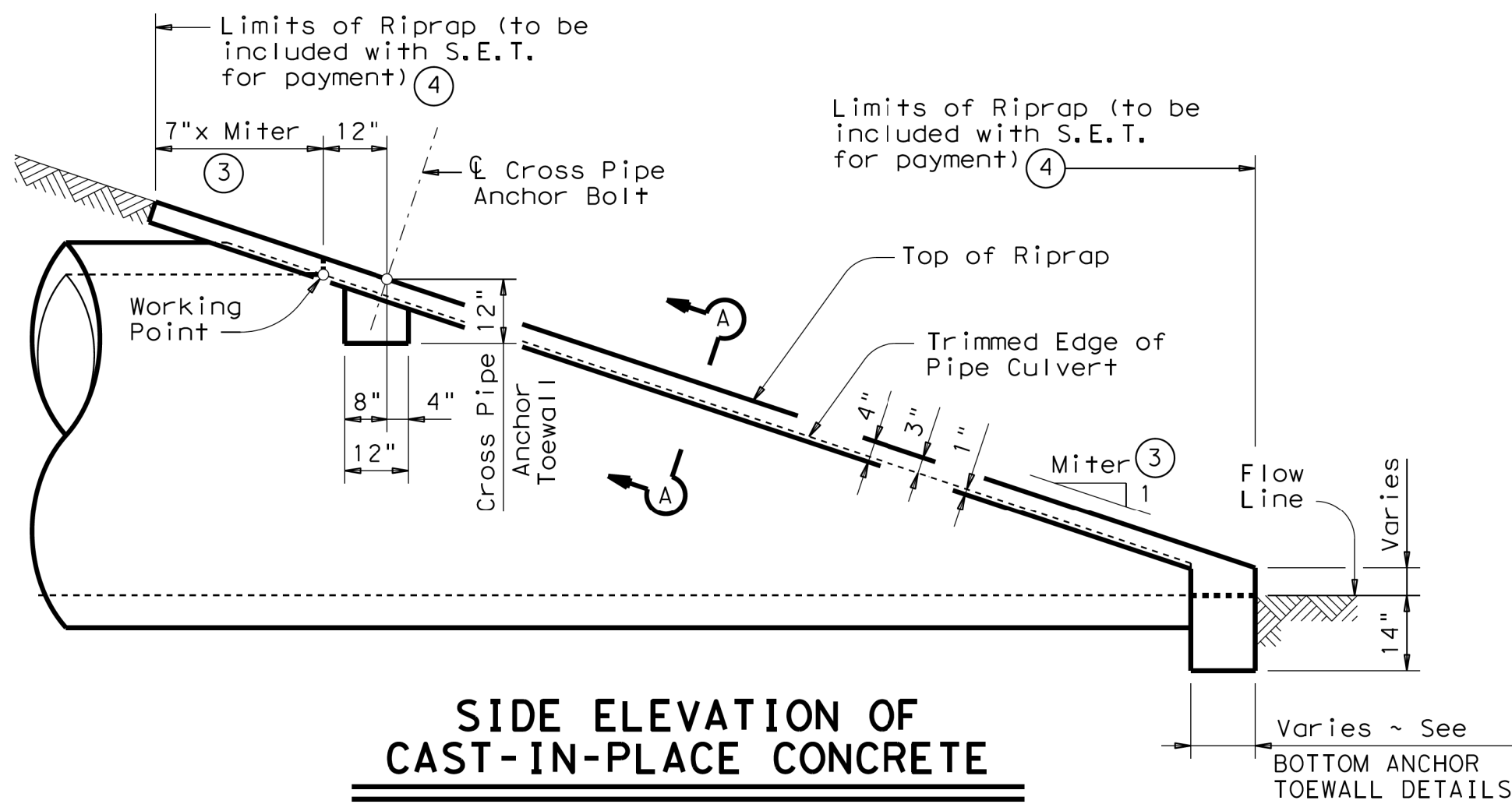




NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

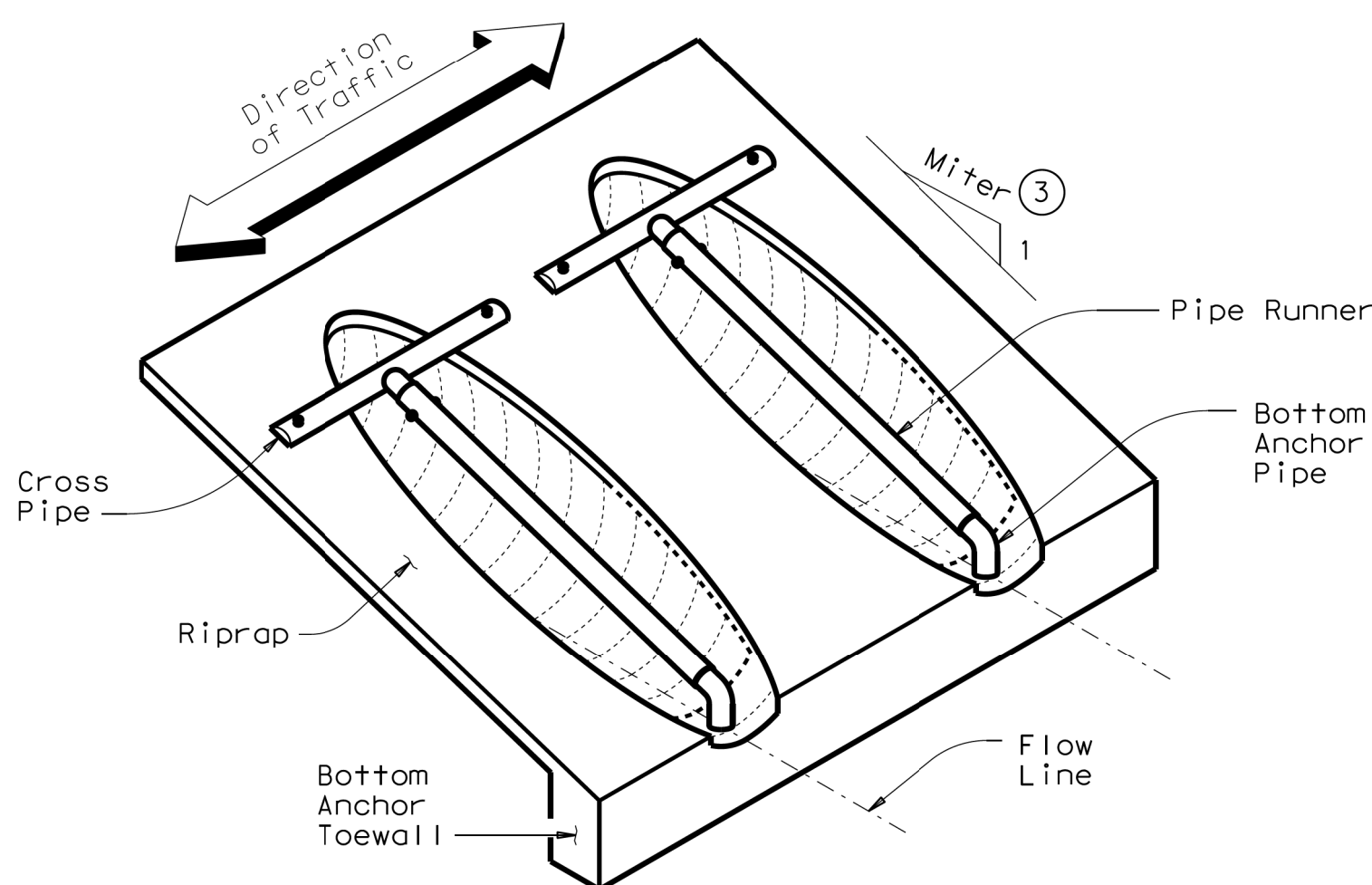
### SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert. Details of Concrete Pipe Culvert are similar.)



### SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert. Details of Corrugated Metal Pipe Culvert are similar. Pipe Runners not shown for clarity)



### ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

### CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS ① ②

| Nominal Culvert I.D. | Pipe Culvert Spa ~ G | Cross Pipe Length | Pipe Runner Length |          |          |          |                |          |           |           |                |          |           |           |  |  |  |  |
|----------------------|----------------------|-------------------|--------------------|----------|----------|----------|----------------|----------|-----------|-----------|----------------|----------|-----------|-----------|--|--|--|--|
|                      |                      |                   | 3:1 Side Slope     |          |          |          | 4:1 Side Slope |          |           |           | 6:1 Side Slope |          |           |           |  |  |  |  |
|                      |                      |                   | 0° Skew            | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew  | 45° Skew  | 0° Skew        | 15° Skew | 30° Skew  | 45° Skew  |  |  |  |  |
| 24"                  | 1' - 7"              | 3' - 5"           | N/A                | N/A      | N/A      | 5' - 10" | N/A            | N/A      | N/A       | 8' - 1"   | N/A            | N/A      | N/A       | 12' - 9"  |  |  |  |  |
| 27"                  | 1' - 8"              | 3' - 8"           | N/A                | N/A      | 5' - 5"  | 6' - 11" | N/A            | N/A      | 7' - 7"   | 9' - 7"   | N/A            | N/A      | 11' - 11" | 14' - 11" |  |  |  |  |
| 30"                  | 1' - 10"             | 3' - 11"          | N/A                | N/A      | 6' - 4"  | 8' - 0"  | N/A            | N/A      | 8' - 9"   | 11' - 0"  | N/A            | N/A      | 13' - 8"  | 17' - 0"  |  |  |  |  |
| 33"                  | 1' - 11"             | 4' - 2"           | 6' - 2"            | 6' - 5"  | 7' - 3"  | 9' - 1"  | 8' - 6"        | 8' - 10" | 10' - 0"  | 12' - 5"  | 13' - 3"       | 13' - 9" | 15' - 5"  | 19' - 2"  |  |  |  |  |
| 36"                  | 2' - 1"              | 4' - 5"           | 6' - 11"           | 7' - 3"  | 8' - 2"  | 10' - 2" | 9' - 6"        | 9' - 11" | 11' - 2"  | 13' - 10" | 14' - 9"       | 15' - 3" | 17' - 2"  | 21' - 3"  |  |  |  |  |
| 42"                  | 2' - 4"              | 4' - 11"          | 8' - 6"            | 8' - 10" | 9' - 11" | 12' - 4" | 11' - 7"       | 12' - 0" | 13' - 6"  | 16' - 8"  | 17' - 9"       | 18' - 5" | 20' - 8"  | 25' - 7"  |  |  |  |  |
| 48"                  | 2' - 7"              | 5' - 5"           | 10' - 1"           | 10' - 5" | 11' - 9" | N/A      | 13' - 7"       | 14' - 2" | 15' - 10" | N/A       | 20' - 9"       | 21' - 6" | 24' - 2"  | N/A       |  |  |  |  |
| 54"                  | 3' - 0"              | 5' - 11"          | 11' - 8"           | 12' - 1" | N/A      | N/A      | 15' - 8"       | 16' - 3" | N/A       | N/A       | 23' - 10"      | 24' - 8" | N/A       | N/A       |  |  |  |  |
| 60"                  | 3' - 3"              | 6' - 5"           | 13' - 3"           | N/A      | N/A      | N/A      | 17' - 9"       | N/A      | N/A       | N/A       | 26' - 10"      | N/A      | N/A       | N/A       |  |  |  |  |

### TYPICAL PIPE CULVERT MITERS ③

| Side Slope | 0° Skew | 15° Skew | 30° Skew | 45° Skew |
|------------|---------|----------|----------|----------|
| 3:1        | 3:1     | 3.106:1  | 3.464:1  | 4.243:1  |
| 4:1        | 4:1     | 4.141:1  | 4.619:1  | 5.657:1  |
| 6:1        | 6:1     | 6.212:1  | 6.928:1  | 8.485:1  |
|            |         |          |          |          |
|            |         |          |          |          |
|            |         |          |          |          |
|            |         |          |          |          |

### CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED ②

| Nominal Culvert I.D. | Single Pipe Culvert | Multiple Pipe Culverts |
|----------------------|---------------------|------------------------|
| 12" thru 21"         | Skews thru 45°      | Skews thru 45°         |
| 24"                  | Skews thru 45°      | Skews thru 30°         |
| 27"                  | Skews thru 30°      | Skews thru 15°         |
| 30"                  | Skews thru 15°      | Skews thru 15°         |
| 33"                  | Skews thru 15°      | Always required        |
| 36"                  | Normal (No Skew)    | Always required        |
| 42" to 60"           | Always required     | Always required        |

### STANDARD PIPE SIZES & MAX PIPE RUNNER LENGTHS ①

| Pipe Size | Pipe O.D. | Pipe I.D. | Max Pipe Runner Length |
|-----------|-----------|-----------|------------------------|
| 2" STD    | 2.375"    | 2.067"    | N/A                    |
| 3" STD    | 3.500"    | 3.068"    | 10' - 0"               |
| 4" STD    | 4.500"    | 4.026"    | 19' - 8"               |
| 5" STD    | 5.563"    | 5.047"    | 34' - 2"               |
|           |           |           |                        |
|           |           |           |                        |
|           |           |           |                        |

### ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) ⑤

| Nominal Culvert I.D. | 3:1 Side Slope |          |          |          | 4:1 Side Slope |          |          |          | 6:1 Side Slope |          |          |          |
|----------------------|----------------|----------|----------|----------|----------------|----------|----------|----------|----------------|----------|----------|----------|
|                      | 0° Skew        | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew | 45° Skew | 0° Skew        | 15° Skew | 30° Skew | 45° Skew |
| 12"                  | 0.4            | 0.4      | 0.5      | 0.5      | 0.5            | 0.5      | 0.5      | 0.6      | 0.7            | 0.7      | 0.7      | 0.8      |
| 15"                  | 0.5            | 0.5      | 0.5      | 0.6      | 0.6            | 0.6      | 0.6      | 0.7      | 0.7            | 0.7      | 0.8      | 0.9      |
| 18"                  | 0.5            | 0.5      | 0.6      | 0.6      | 0.6            | 0.7      | 0.7      | 0.8      | 0.8            | 0.8      | 0.9      | 1.0      |
| 21"                  | 0.6            | 0.6      | 0.6      | 0.7      | 0.7            | 0.7      | 0.8      | 0.9      | 0.9            | 0.9      | 1.0      | 1.2      |
| 24"                  | 0.6            | 0.7      | 0.7      | 0.8      | 0.8            | 0.8      | 0.8      | 1.0      | 1.0            | 1.0      | 1.1      | 1.3      |
| 27"                  | 0.7            | 0.7      | 0.8      | 0.9      | 0.8            | 0.9      | 0.9      | 1.1      | 1.1            | 1.1      | 1.2      | 1.4      |
| 30"                  | 0.8            | 0.8      | 0.8      | 0.9      | 0.9            | 0.9      | 1.0      | 1.2      | 1.2            | 1.2      | 1.3      | 1.6      |
| 33"                  | 0.8            | 0.8      | 0.9      | 1.0      | 1.0            | 1.0      | 1.1      | 1.3      | 1.3            | 1.4      | 1.5      | 1.7      |
| 36"                  | 0.9            | 0.9      | 0.9      | 1.1      | 1.1            | 1.1      | 1.2      | 1.4      | 1.4            | 1.5      | 1.6      | 1.8      |
| 42"                  | 1.0            | 1.0      | 1.1      | 1.3      | 1.2            | 1.3      | 1.3      | 1.6      | 1.6            | 1.7      | 1.8      | 2.1      |
| 48"                  | 1.1            | 1.1      | 1.2      | N/A      | 1.4            | 1.4      | 1.5      | N/A      | 1.9            | 1.9      | 2.1      | N/A      |
| 54"                  | 1.3            | 1.3      | N/A      | N/A      | 1.6            | 1.6      | N/A      | N/A      | 2.1            | 2.1      | N/A      | N/A      |
| 60"                  | 1.4            | N/A      | N/A      | N/A      | 1.7            | N/A      | N/A      | N/A      | 2.3            | N/A      | N/A      | N/A      |

① Size of Pipe Runner shall be as shown in the tables. Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stub Out and Bottom Anchor Pipe shall be the next smaller size pipe as shown in the STANDARD PIPE SIZES table.

② This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For 60" culvert pipes, the skew must not exceed 0°.  
For 54" culvert pipes, the skew must not exceed 15°.  
For 48" culvert pipes, the skew must not exceed 30°.  
For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT "Roadway Design Manual".

③ Miter = Slope of Mitered Pipe Culvert End

④ Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

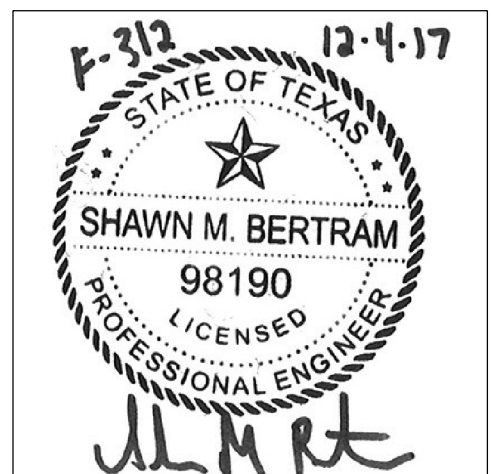
⑤ Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple Pipe Culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

SHEET 1 OF 2

|                                                                                                                         |         |                                 |         |
|-------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------|---------|
|                                                                                                                         |         | <b>Bridge Division Standard</b> |         |
| <b>SAFETY END TREATMENT</b><br><b>FOR 12" DIA TO 60" DIA</b><br><b>PIPE CULVERTS</b><br><b>TYPE II ~ CROSS DRAINAGE</b> |         |                                 |         |
| <b>SETP-CD</b>                                                                                                          |         |                                 |         |
| FILE: setpcdse.dgn                                                                                                      | DN: GAF | CK: CAT                         | DW: JRP |
| ©TxDOT February 2010                                                                                                    | CONT    | SECT                            | JOB     |
| REVISIONS                                                                                                               |         | HIGHWAY                         |         |
| 11-10: Add note for synthetic fibers.                                                                                   |         | DIST                            | COUNTY  |
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Project No.: 32388  
Issued: 12/04/2017  
Drawn By: JN  
Checked By: SB

TxDOT DETAIL  
SET P-CD  
(1 OF 2)

C9.3

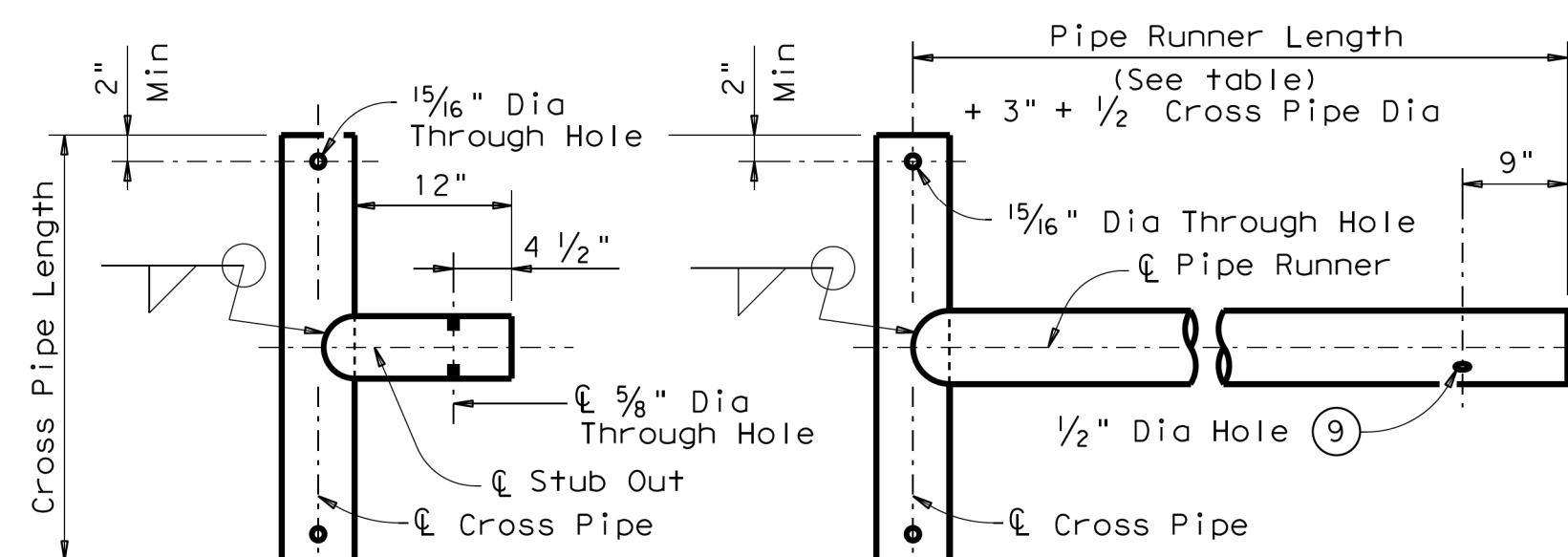
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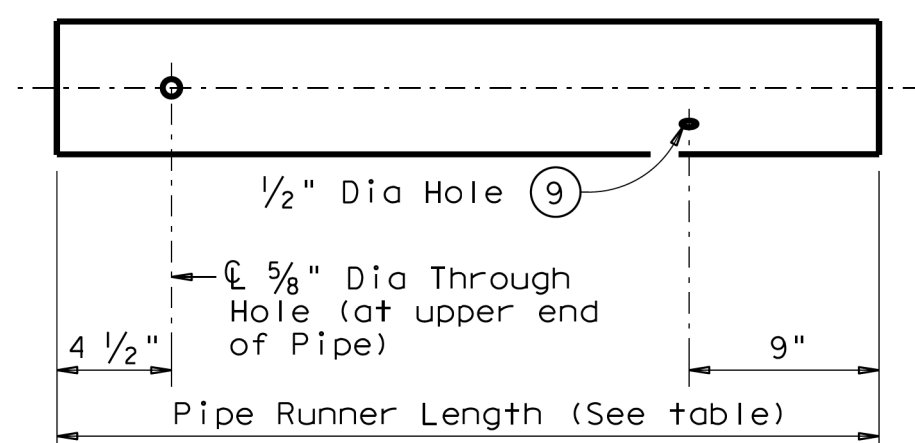


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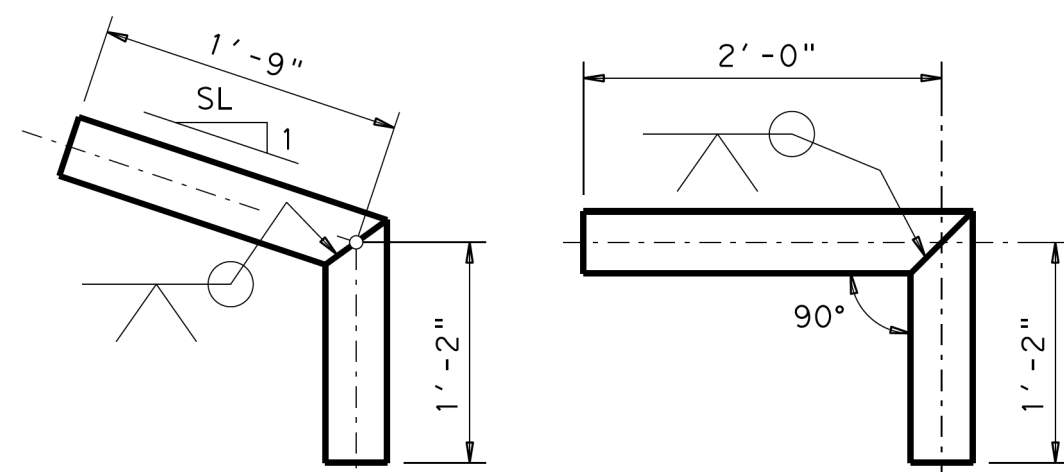


**CROSS PIPE AND CONNECTIONS DETAILS**

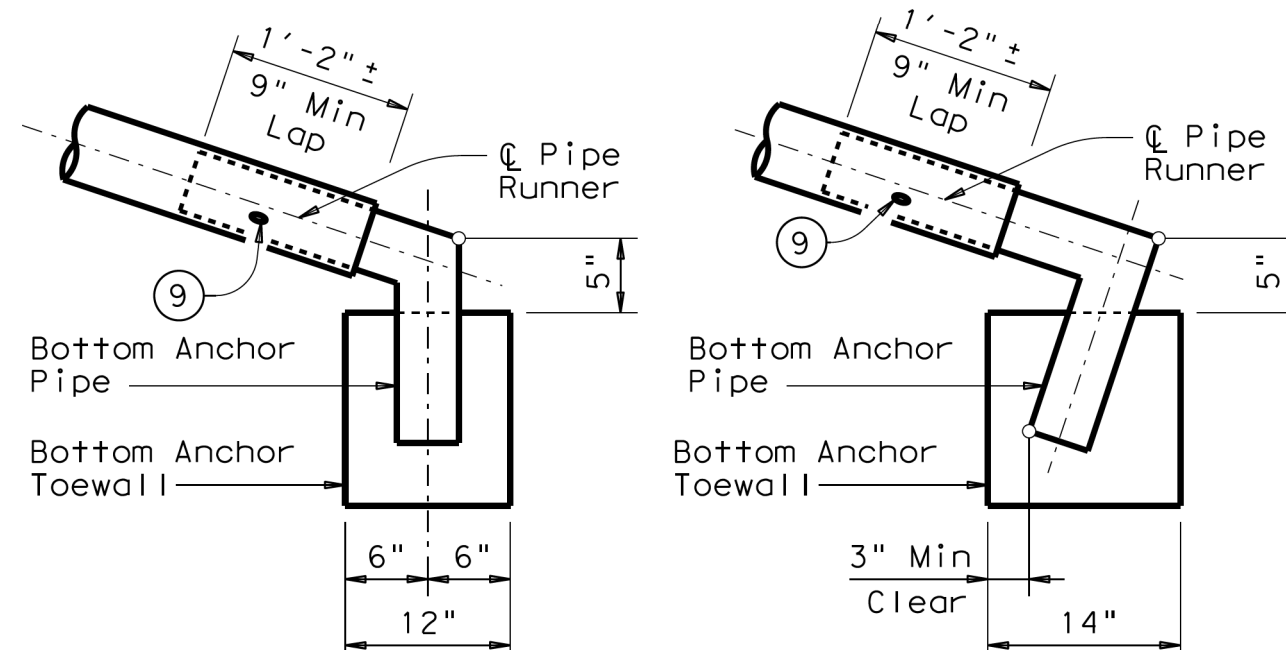


NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

### PIPE RUNNER DETAILS



**BOTTOM ANCHOR PIPE DETAILS<sup>10</sup>**



**BOTTOM ANCHOR TOEWALL DETAILS**

(Culvert & Riprap not shown for clarity)

### GENERAL NOTES:

Pipe Runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners. Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

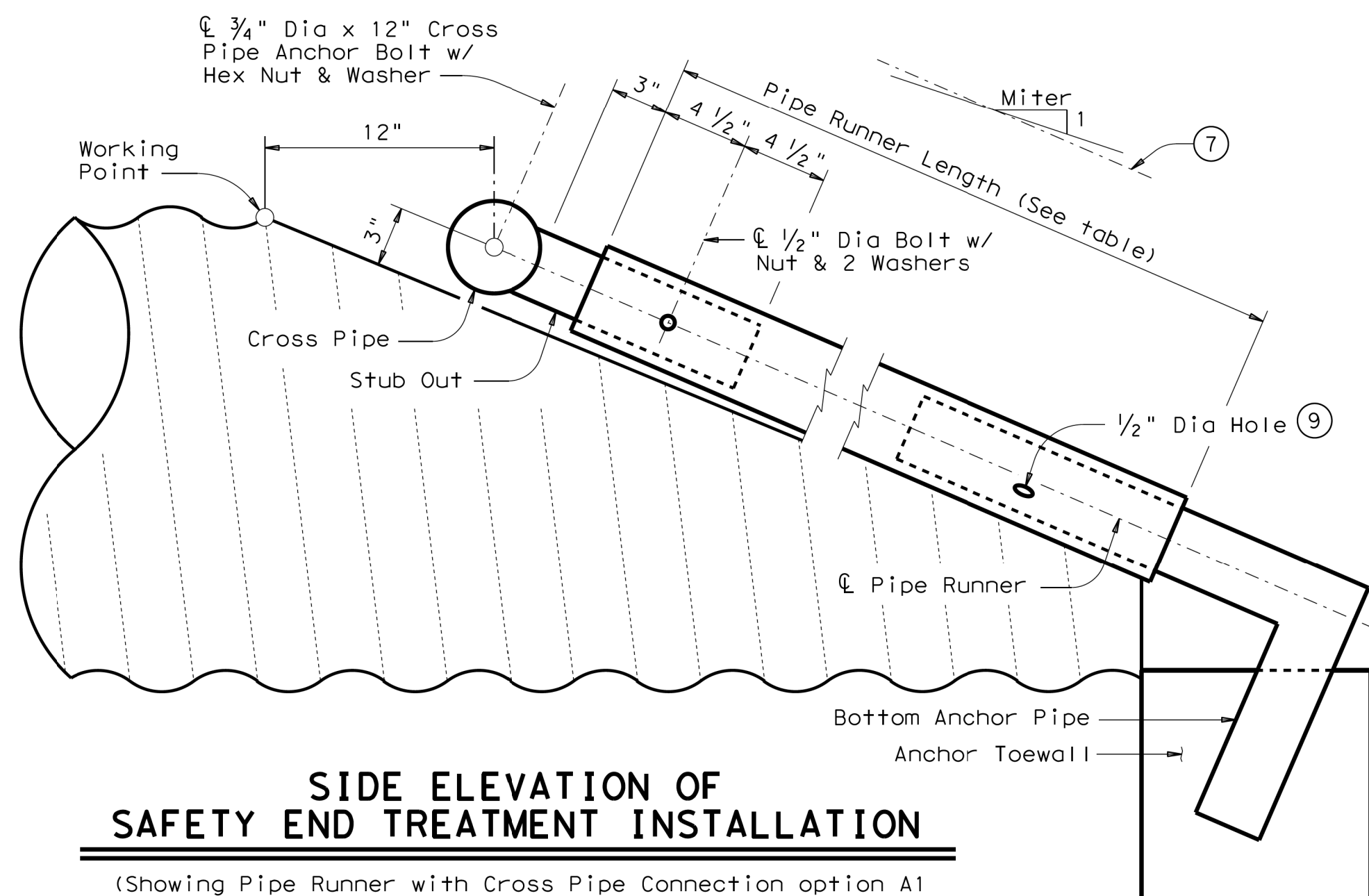
Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Pipe Runners, Cross Pipes, and Anchor Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

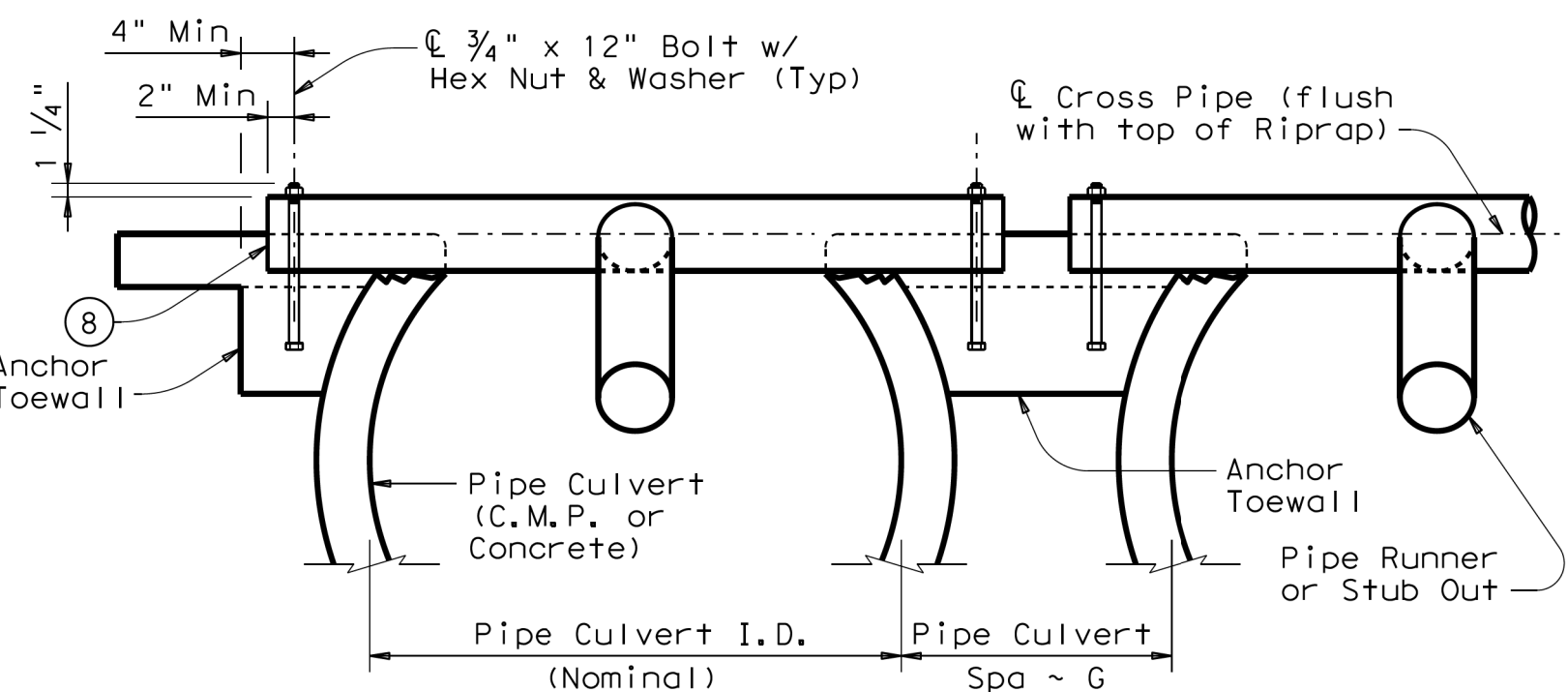
Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.



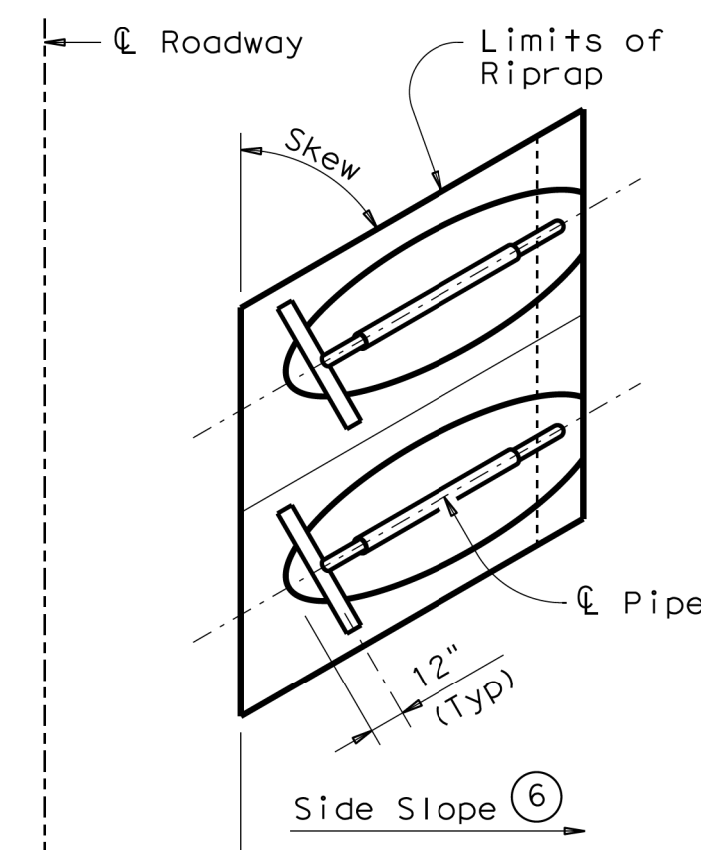
**SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION**

(Showing Pipe Runner with Cross Pipe Connection option A1 and Anchor Pipe option B2 on Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Riprap not shown for clarity)

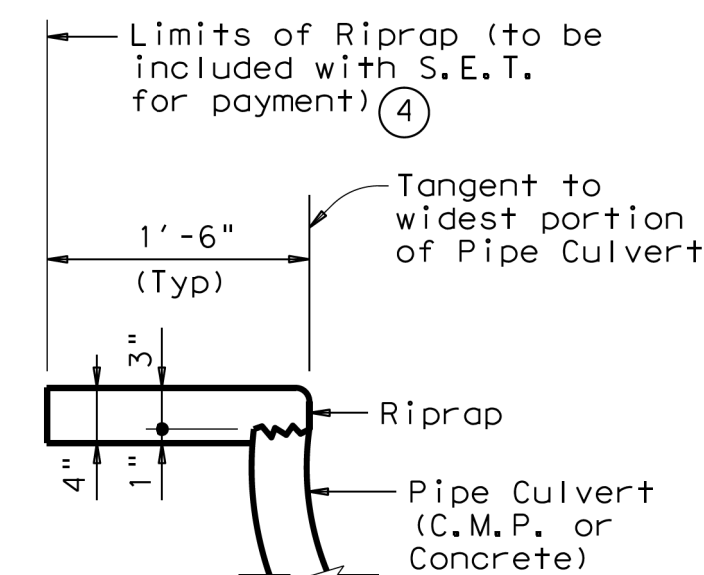


**SHOWING CROSS PIPE & ANCHOR TOEWALL**

### SECTION A-A



**PLAN OF SKEWED INSTALLATION**



**SHOWING TYPICAL PIPE CULVERT & RIPRAP**

SHEET 2 OF 2

|                                                                                                                         |         |                                 |         |
|-------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------|---------|
|                                                                                                                         |         | <b>Bridge Division Standard</b> |         |
| <b>SAFETY END TREATMENT</b><br><b>FOR 12" DIA TO 60" DIA</b><br><b>PIPE CULVERTS</b><br><b>TYPE II ~ CROSS DRAINAGE</b> |         |                                 |         |
| <b>SETP-CD</b>                                                                                                          |         |                                 |         |
| FILE: setpcdse.dgn                                                                                                      | DN: GAF | CK: CAT                         | DW: JRP |
| ©TxDOT February 2010                                                                                                    | CONT    | SECT                            | JOB     |
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| 11-10: Add note for synthetic fibers.                                                                                   |         | DIST                            | COUNTY  |
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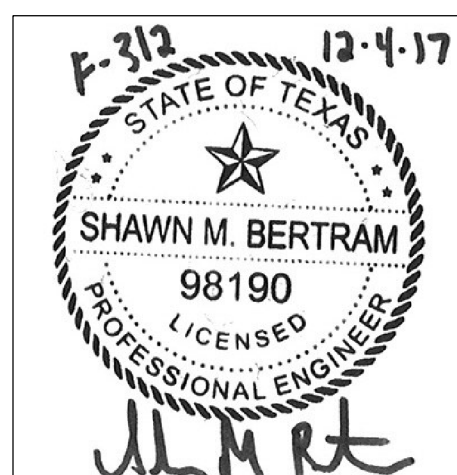


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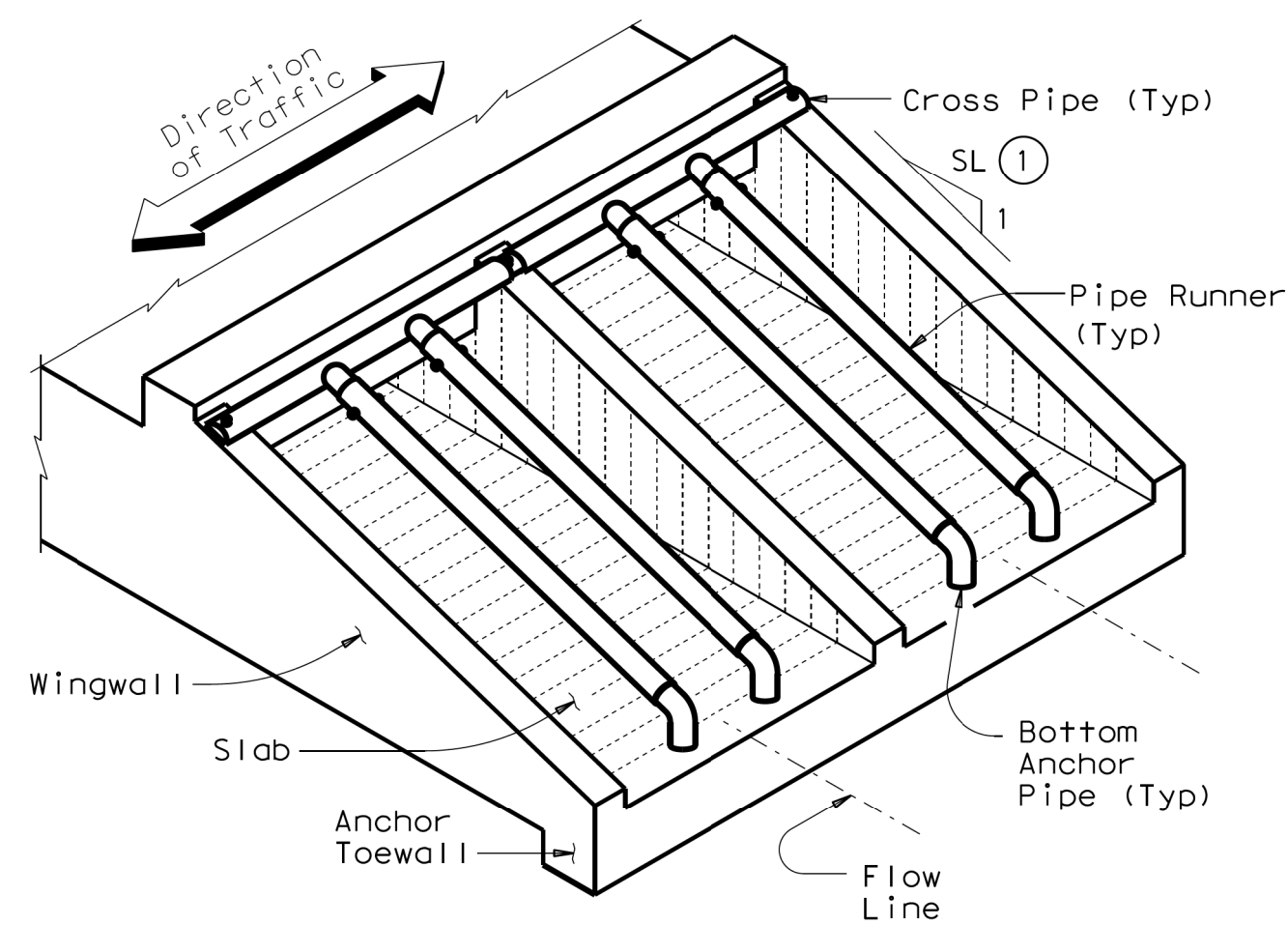
Project No.: 32388  
Issued: 12/04/2017  
Drawn By: JN  
Checked By: SB

TxDOT DETAIL  
SET P-CD  
(2 OF 2)

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DATE: \_\_\_\_\_  
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C = Height of Curb above top of Top Slab  
Hw = Height of Wingwall  
K = Constant Value for use in formulas

| Slope SL:1 | K <sub>1</sub> | K <sub>2</sub> |
|------------|----------------|----------------|
| 3:1 ~      | 1.054          | ~ 7.45         |
| 4:1 ~      | 1.031          | ~ 8.49         |
| 6:1 ~      | 1.014          | ~ 10.30        |

Atw = Anchor Toewall Length  
Lw = Length of Wingwall  
N = Number of Culvert Barrels  
SL:1 = Side Slope Ratio (Horizontal : 1 Vertical)

See applicable box culvert standard for H, S, T, and U values.

## GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners.

Pipe Runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures," Texas Transportation Institute, March 1981.

All reinforcing steel shall be Grade 60. All reinforcing shall be adjusted as necessary to provide a minimum clear cover of 1 1/4".

All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.

Quantities for Pipe Runners, reinforcing steel, and concrete, resulting from the formulas given herein are for Contractor's information only.

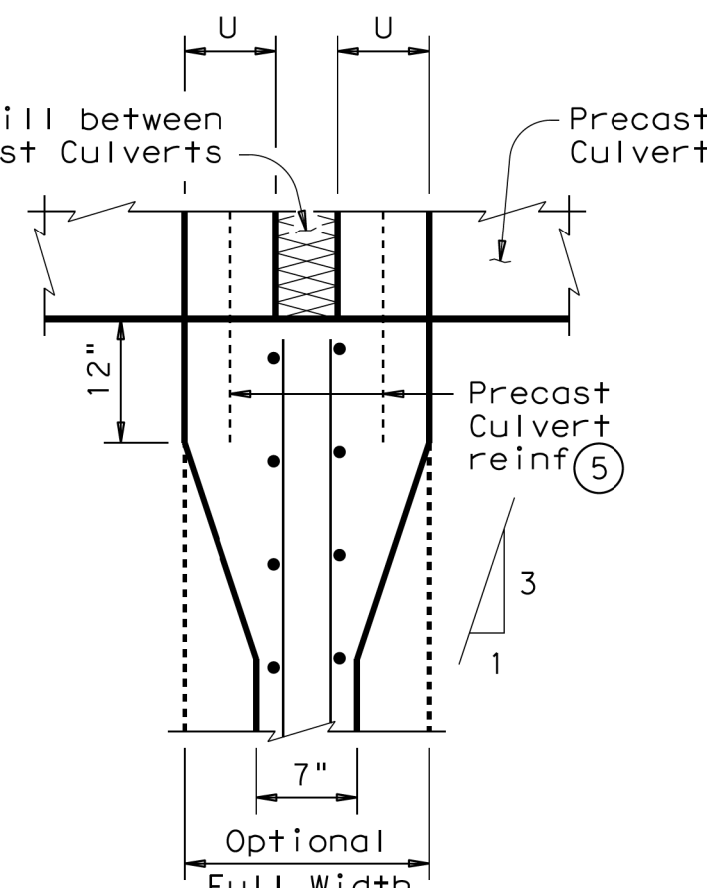
Pipe Runners, Cross Pipes, and Anchor Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except the concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

See BCS standard sheet for additional dimensions and information.

Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the Safety End Treatments.



## PLAN VIEWS OF CORNER DETAILS

**BARS J**

Length Varies ~  
Hw + 1'-4" (Longest)  
T (Shortest)

1'-2"

**BARS K**

1'-10"  
1'-2" 8"  
10 1/2"

**BARS R**

2'-0"  
2'-0"

(Length = 4'-3")

*SHEET 1 OF 2*

|                                                                                                                                                                                                            |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  <p style="font-size: 1.2em; font-weight: bold;">Texas Department of Transportation</p>                               | <p style="font-size: 1.2em; font-weight: bold;">Bridge<br/>Division<br/>Standard</p> |
| <h1 style="margin: 0;">SAFETY END TREATMENT</h1> <h2 style="margin: 0;">FOR 0° SKEW BOX CULVERTS</h2> <h3 style="margin: 0;">(MAXIMUM Hw = 7'-0")</h3> <h3 style="margin: 0;">TYPE I ~ CROSS DRAINAGE</h3> |                                                                                      |
| <h1 style="margin: 0;">SETB-CD</h1>                                                                                                                                                                        |                                                                                      |

|                                       |         |         |         |           |
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| FILE: setbcdse.dgn                    | DN: GAF | CK: CAT | DW: JRP | CC: GAF   |
| ©TxDOT February 2010<br><br>REVISIONS | CONT    | SECT    | JOB     | HIGHWAY   |
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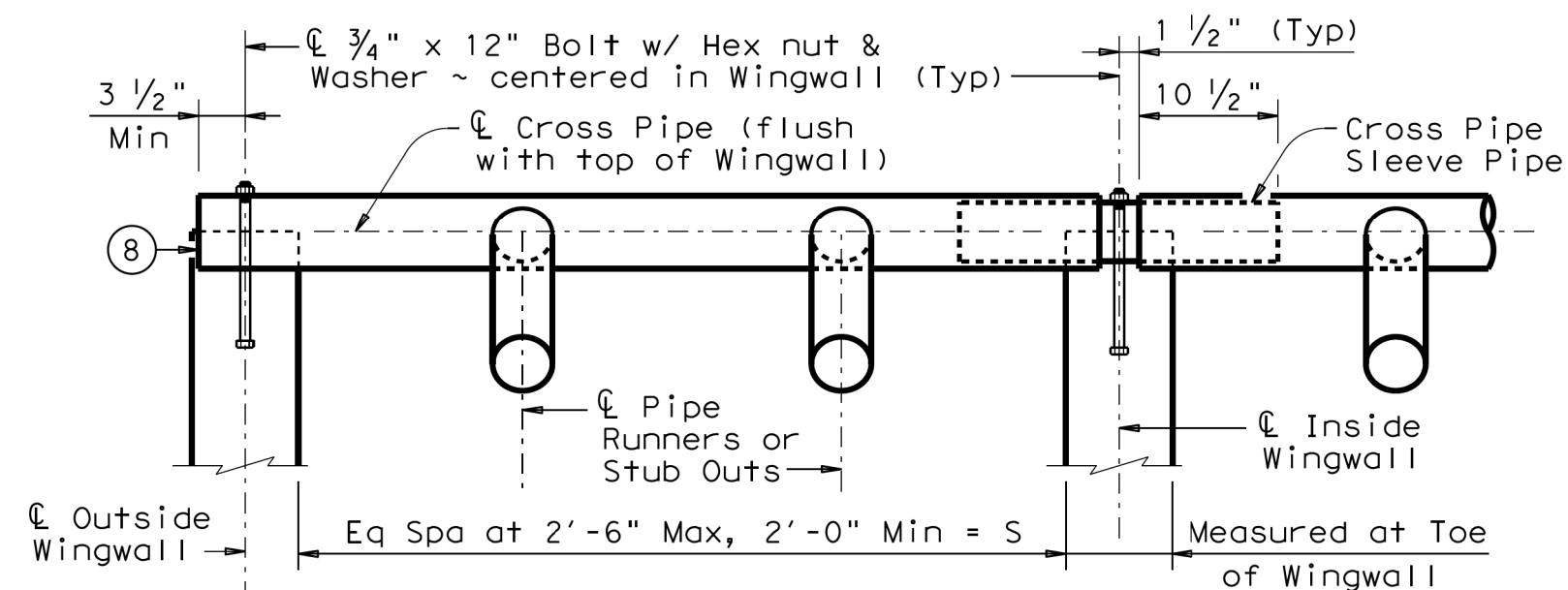
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| Project No.: 32388 |
| Issued: 12/04/2017 |
| Drawn By: JN       |
| Checked By: SB     |

TXDOT DETAIL  
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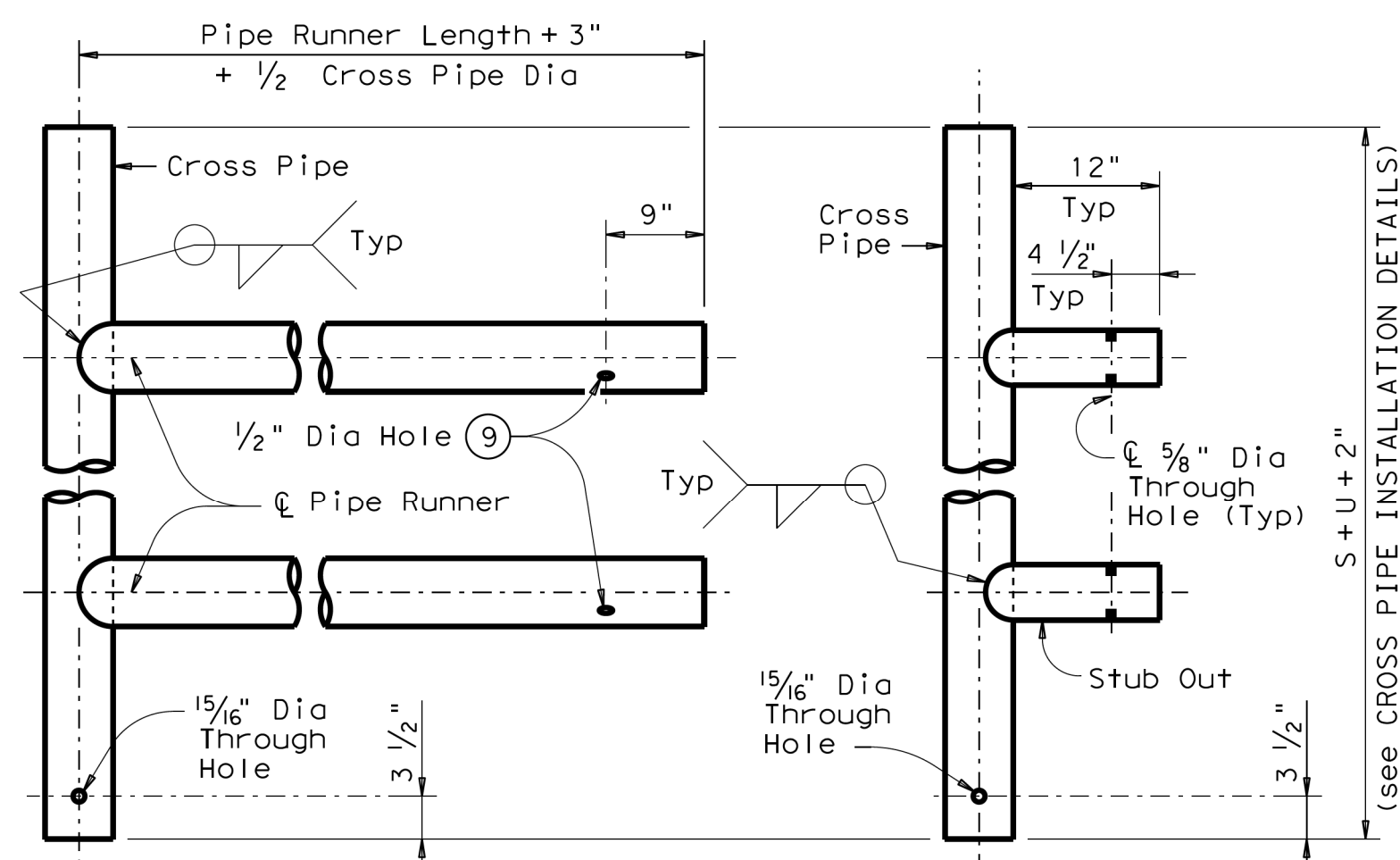
C9.5





NOTE: At Contractor's option, the Cross Pipe may be made continuous across the Inside Wingwalls. If such option is selected, the Sleeve Pipe shall be omitted and a  $\frac{1}{16}$ " diameter through hole be made in the Cross Pipe to accept the anchor bolt at the centerline of each Inside Wingwall.

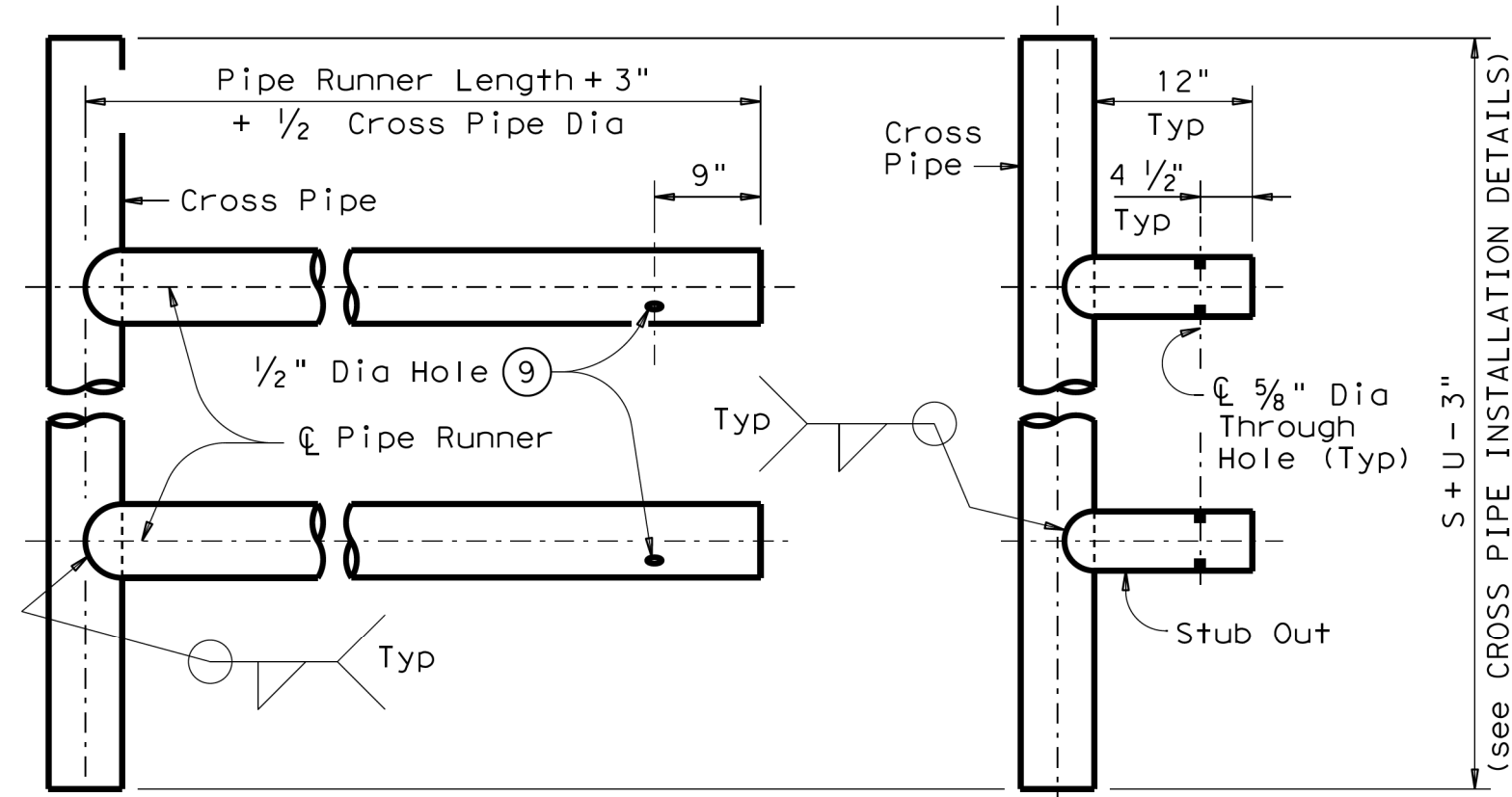
### CROSS PIPE INSTALLATION DETAILS



OPTION A2

OPTION A1

FOR USE IN OUTSIDE CULVERT BAY

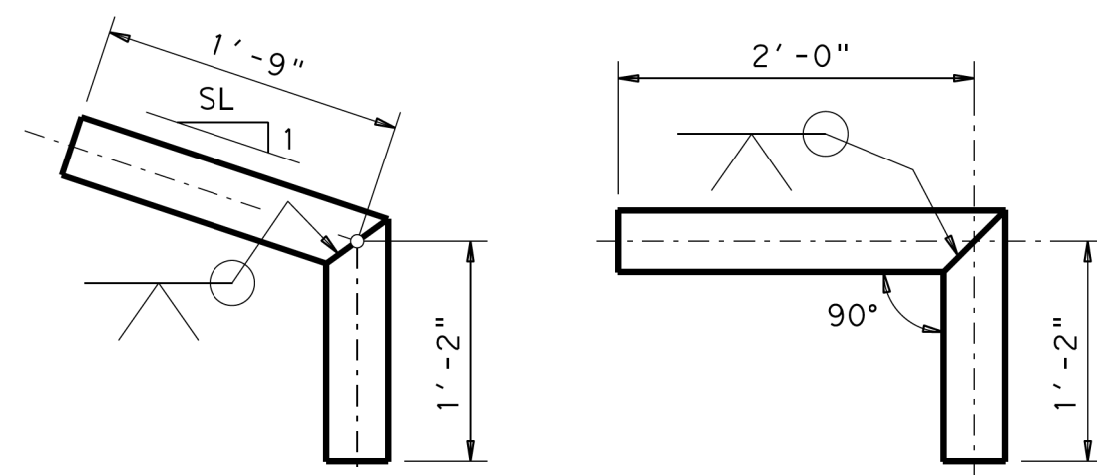


OPTION A2

OPTION A1

FOR USE IN INSIDE CULVERT BAY

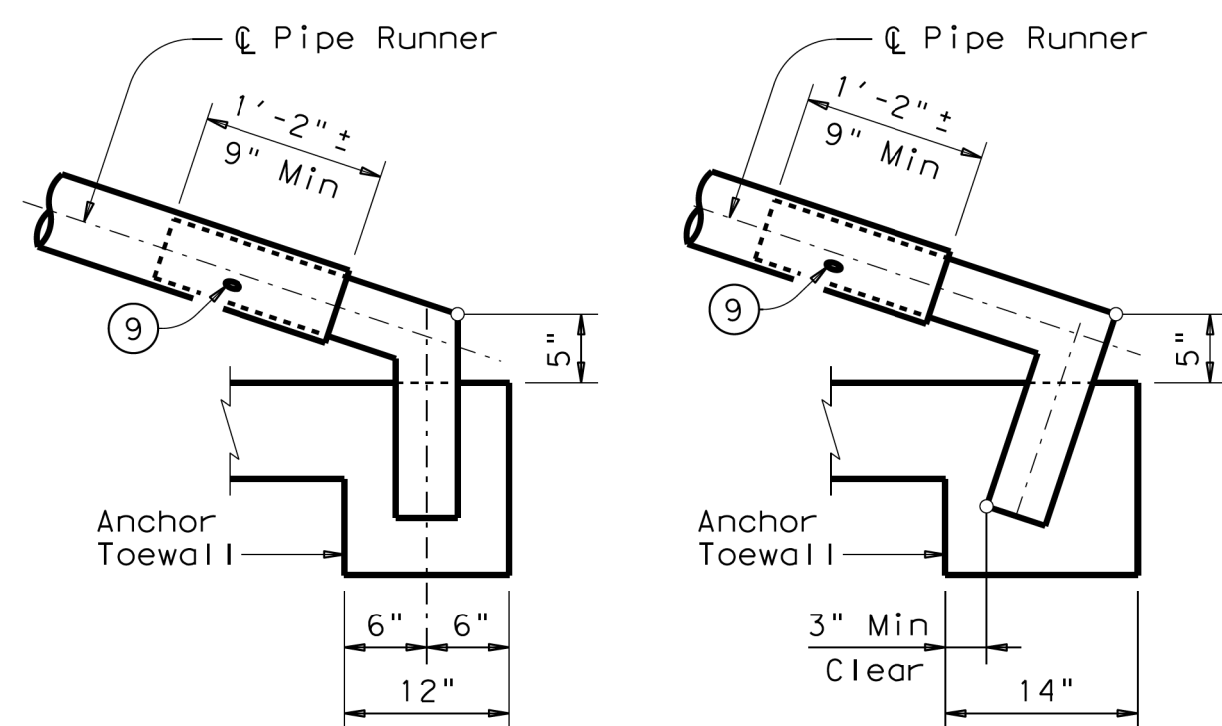
### CROSS PIPE AND CONNECTIONS DETAILS



OPTION A

OPTION B

### BOTTOM ANCHOR PIPE DETAILS

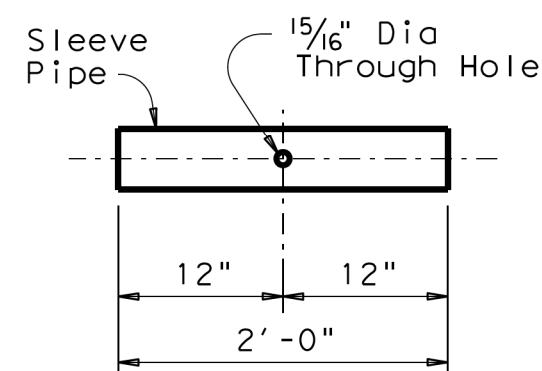


OPTION B1

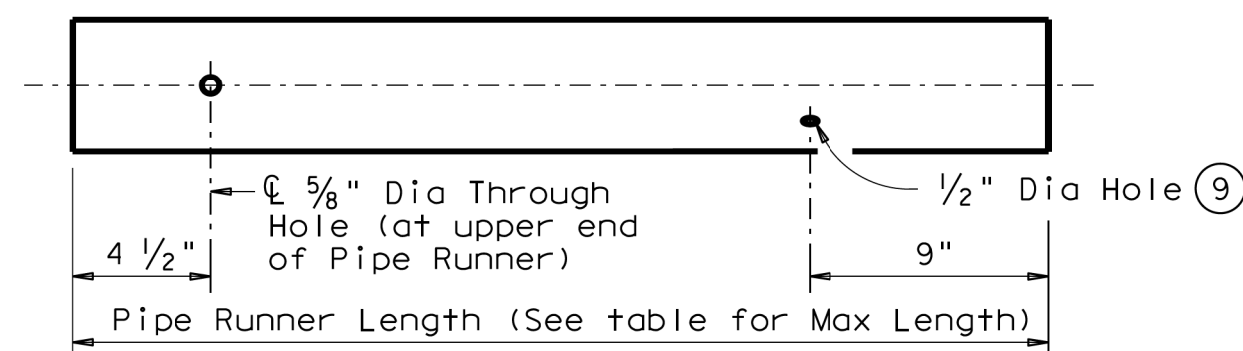
OPTION B2

### BOTTOM ANCHOR TOEWALL DETAILS

(Wingwall not shown for clarity)



### CROSS PIPE SLEEVE PIPE DETAILS



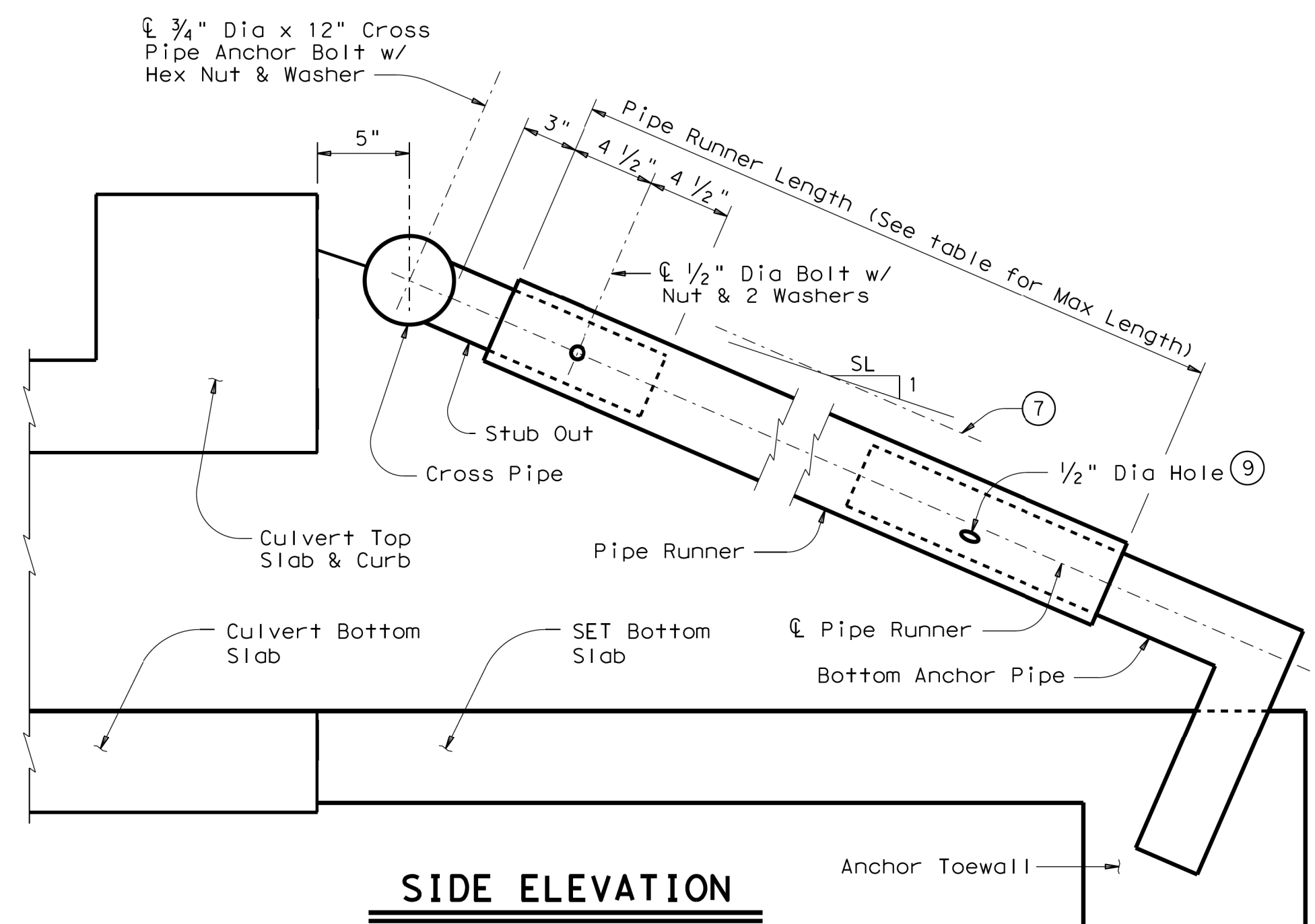
NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

### PIPE RUNNER DETAILS

- ⑥ Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stub Out shall be the same size as the Anchor Pipe.
- ⑦ Note that actual slope of Safety Pipe Runner may vary slightly from Side Slope.
- ⑧ Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access.
- ⑨ After installation, the  $\frac{1}{2}$ " hole shall be inspected to ensure that the lap of the Safety Pipe Runner with the Bottom Anchor Pipe is adequate.
- ⑩ At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the Runner) may be substituted for the mitered and welded joint in the Bottom Anchor Pipe.

### MAXIMUM PIPE RUNNER LENGTHS & REQUIRED PIPE RUNNER AND ANCHOR PIPE SIZES

| Maximum Pipe Runner Length | Required Pipe Runner Size |           |           | Required Anchor Pipe Size |           |           |
|----------------------------|---------------------------|-----------|-----------|---------------------------|-----------|-----------|
|                            | Pipe Size                 | Pipe O.D. | Pipe I.D. | Pipe Size                 | Pipe O.D. | Pipe I.D. |
| 10' - 0"                   | 3" STD                    | 3.500"    | 3.068"    | 2" STD                    | 2.375"    | 2.067"    |
| 19' - 8"                   | 4" STD                    | 4.500"    | 4.026"    | 3" STD                    | 3.500"    | 3.068"    |
| 34' - 2"                   | 5" STD                    | 5.563"    | 5.047"    | 4" STD                    | 4.500"    | 4.026"    |



### SIDE ELEVATION

(Showing Pipe Runner with Cross Pipe Connection option A1 and anchor Pipe option B2. Wingwall not shown for clarity)

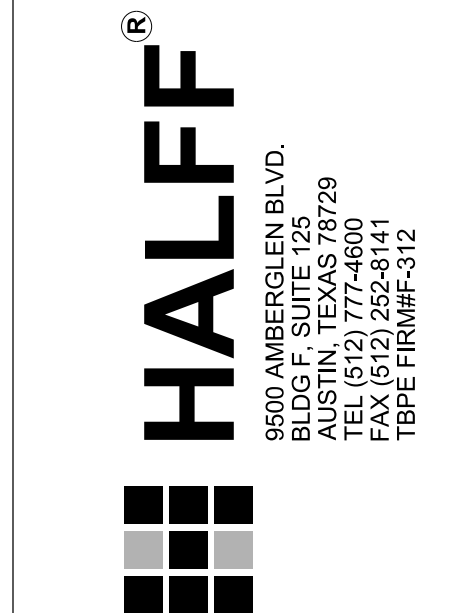
SHEET 2 OF 2



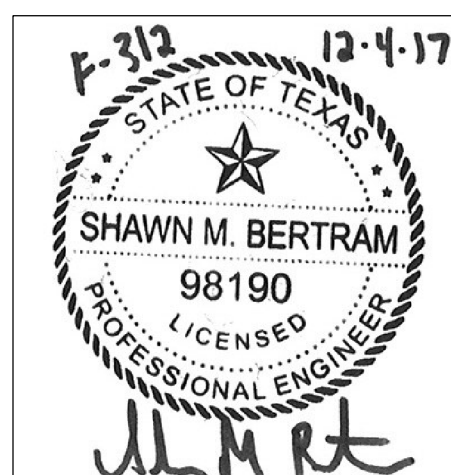
### SAFETY END TREATMENT FOR 0° SKEW BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE 1 ~ CROSS DRAINAGE

### SETB-CD

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| FILE: setbcdse.dgn   | DN: GAF | CK: CAT | DR: JRP | CK: GAF   |
| ©TxDOT February 2010 | CONT    | SECT    | JOB     | HIGHWAY   |
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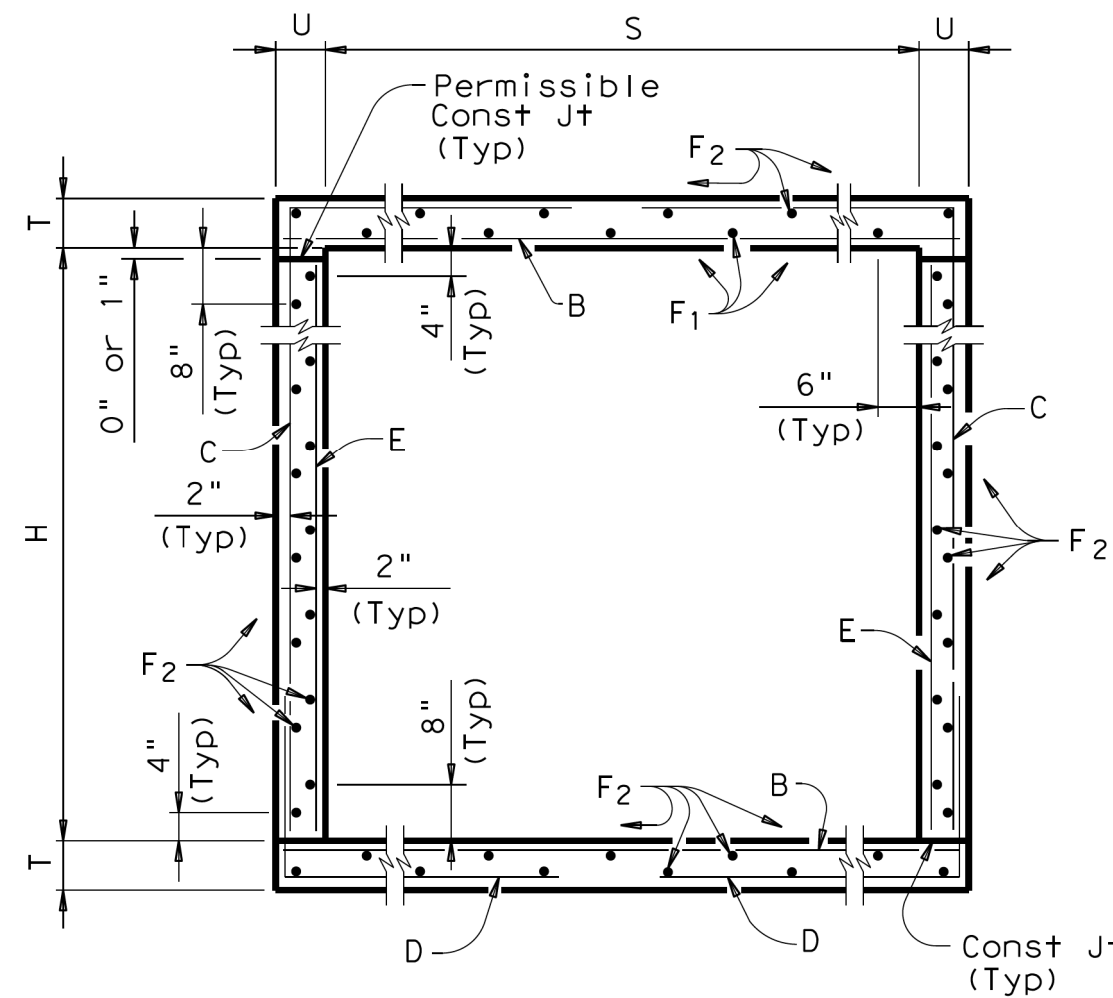
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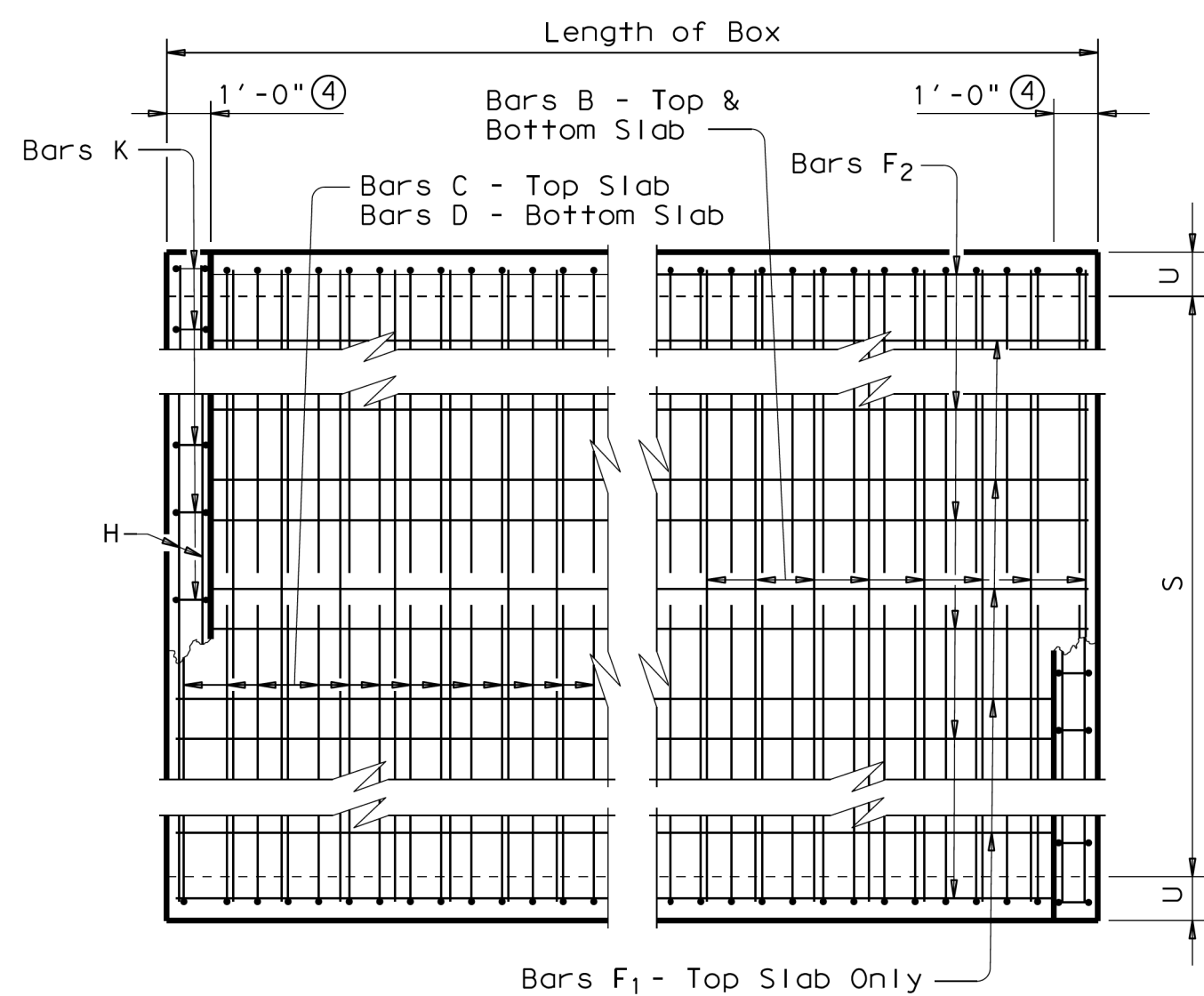


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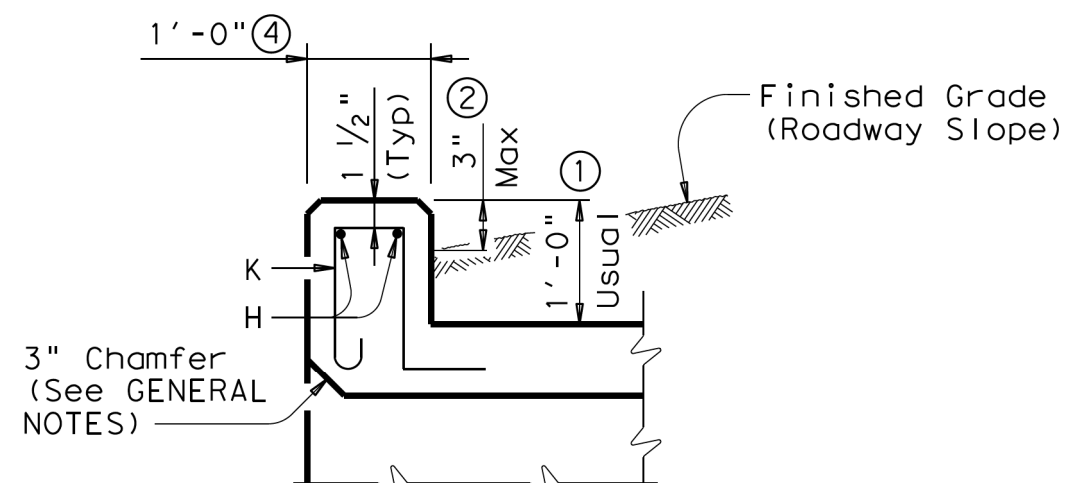
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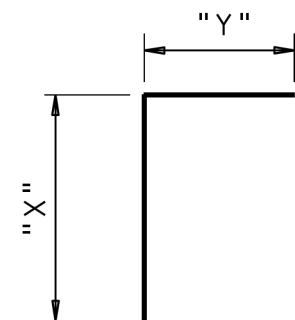
**TYPICAL SECTION**



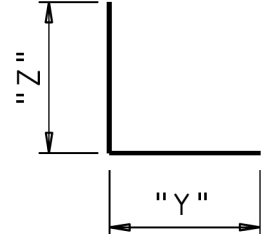
**PLAN OF REINF STEEL**



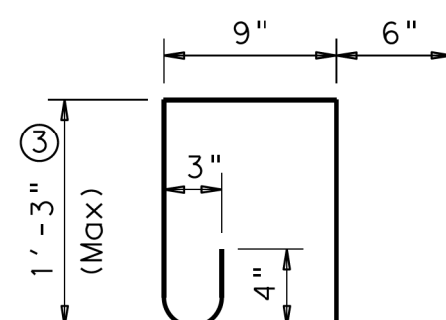
**SECTION THRU CURB**



**BARS C**



**BARS D**



**BARS K ~ #4**  
(Spd = 1'-0" Max)  
(Length = 4'-3")

- ① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- ② For vehicle safety, the following requirements must be met:
  - For structures without bridge rail, curbs shall project no more than 3" above finished grade.
  - For structures with bridge rail, curbs shall be flush with finished grade.
 Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ③ For curbs less than 1'-0" high, tilt bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, bars K may be omitted.
- ④ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
 WWR required = (0.44 sq in/ 0.5') x (60 ksi/70 ksi) = 0.754 sq in/ft.  
 If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing = (0.306 sq in/ 0.754 sq in/ft) x 12 in/ft = 4.87" Max spacing.  
 Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

**GENERAL NOTES:**

Designed according to AASHTO LRFD Specifications.  
 Designed to the maximum fill height shown.  
 All reinforcing steel shall be Grade 60.  
 All concrete shall be Class "C" with these exceptions: use Class "S" for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.  
 Class "C" concrete shall have a minimum compressive strength of 3,600 psi. Class "S" concrete shall have a minimum compressive strength of 4,000 psi.  
 The use of permanent forms is not allowed.  
 The bottom edge of the top slab shall be chamfered 3" at the entrance.  
 Reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.  
 Construction joints shown at the flow line may be raised a maximum of 6" at the Contractor's option. If this option is used, Bars E may be cut off or raised, and Bars C and D may be reversed.  
 See standard SCC-MD for skewed ends, angle sections and lengthening details.

HL93 LOADING

SHEET 1 OF 2

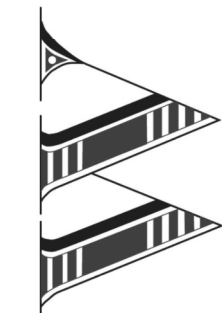


Bridge  
Division  
Standard

**SINGLE BOX CULVERTS**  
**CAST-IN-PLACE**  
**0' TO 30' FILL**

**SCC-3 & 4**

|                      |         |         |               |           |
|----------------------|---------|---------|---------------|-----------|
| FILE: scc34ste.dgn   | DN: GAF | CK: LMW | DW: BWH/TxDOT | CK: GAF   |
| ©TxDOT February 2010 | CONT    | SECT    | JOB           | HIGHWAY   |
| REVISIONS            |         |         |               |           |
| 10-12: Added WWR     | DIST    | COUNTY  |               | SHEET NO. |

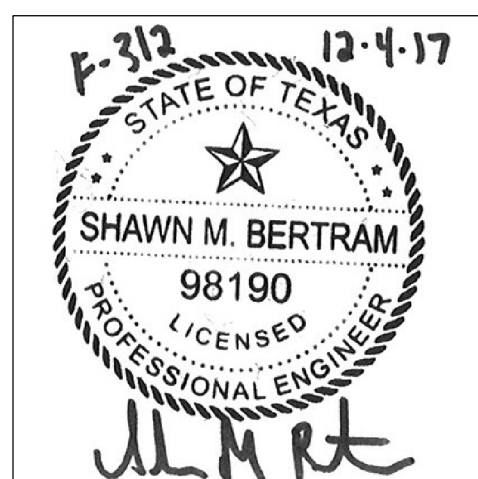


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Project No.: 32388  
 Issued: 12/04/2017  
 Drawn By: JN  
 Checked By: SB

TXDOT DETAIL  
 SCC-3&4  
 (1 OF 2)

C9.7



DATE: \_\_\_\_\_  
FILE: \_\_\_\_\_

Deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064 may be used to replace conventional reinforcement shown at the Contractor's option. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes.

Example Conversion: Replacement of No. 6 Gr 60 at 6" Spacing with WWR.  
WWR required =  $(0.44 \text{ sq in/} 0.5') \times (60 \text{ ksi}/70 \text{ ksi}) = 0.754 \text{ sq in/ft.}$   
If D30.6 wire is used to meet the 0.754 sq in/ft requirement in this example, the required spacing =  $(0.306 \text{ sq in/} 0.754 \text{ sq in/ft}) \times 12 \text{ in/ft} = 4.87"$   
Max spacing.  
Required lap length for the provided D30.6 wire is 2'-2" (Lap required for uncoated No. 5 bars, as shown in Item 440).

312 12-4-1

STATE OF TEXAS

SHAWN M. BERTRAM

98190

LICENSED

PROFESSIONAL ENGINEER

JL M RT

|                    |
|--------------------|
| Project No.: 32388 |
| Issued: 12/04/2017 |
| Drawn By: JN       |
| Checked By: SB     |

C9.8



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DATE: FILE:

**TABLE OF DIMENSIONS & REINFORCING STEEL**  
(Wings for One Structure End)

| Maximum Wingwall Height Hw | Dimensions |       |       |       | Variable Reinforcing |       | Estimated Quantities per ft of wing length (2-Wings) |       |               |              |
|----------------------------|------------|-------|-------|-------|----------------------|-------|------------------------------------------------------|-------|---------------|--------------|
|                            | W          | X     | Y     | Z     | Bars J1              |       | Bars J2                                              |       | Reinf (Lb/Ft) | Conc (CY/Ft) |
|                            |            |       |       |       | Size                 | Spa   | Size                                                 | Spa   |               |              |
| 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**

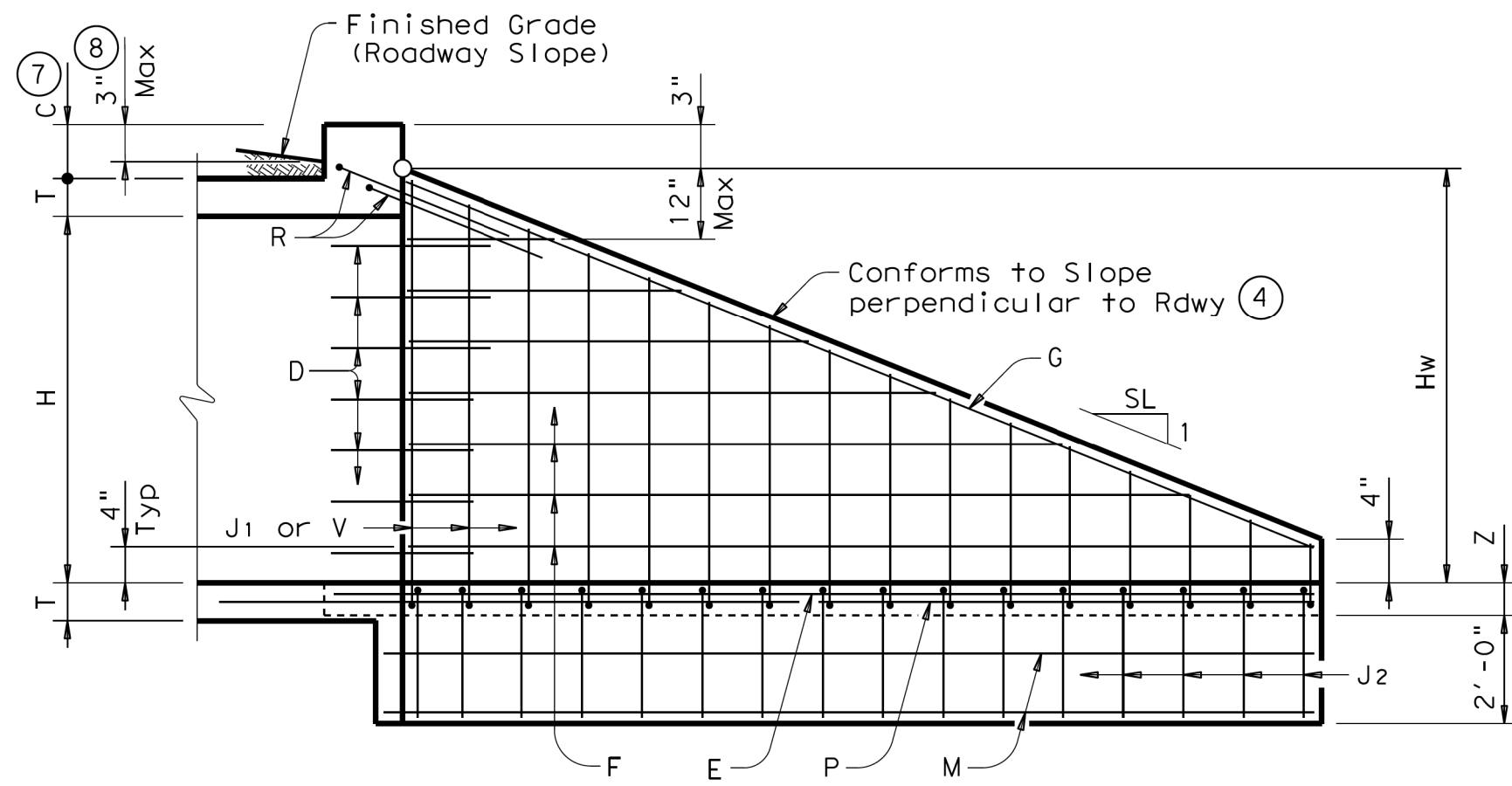
| Bar           | Size | No. | Spa   |
|---------------|------|-----|-------|
| L             | #4   | ~   | 1'-6" |
| Q             | #4   | 1   | ~     |
| Reinf (Lb/Ft) |      |     | 2.45  |
| Conc (CY/Ft)  |      |     | 0.037 |

#### WING DIMENSION CALCULATIONS:

Formulas: (All values are in Feet)  
 $Hw = H + T + C - 0.250'$   
 $Lw = (Hw - 0.333') (SL)$   
 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 ~ S.F.) =  $(Hw + 0.333') (Lw)$

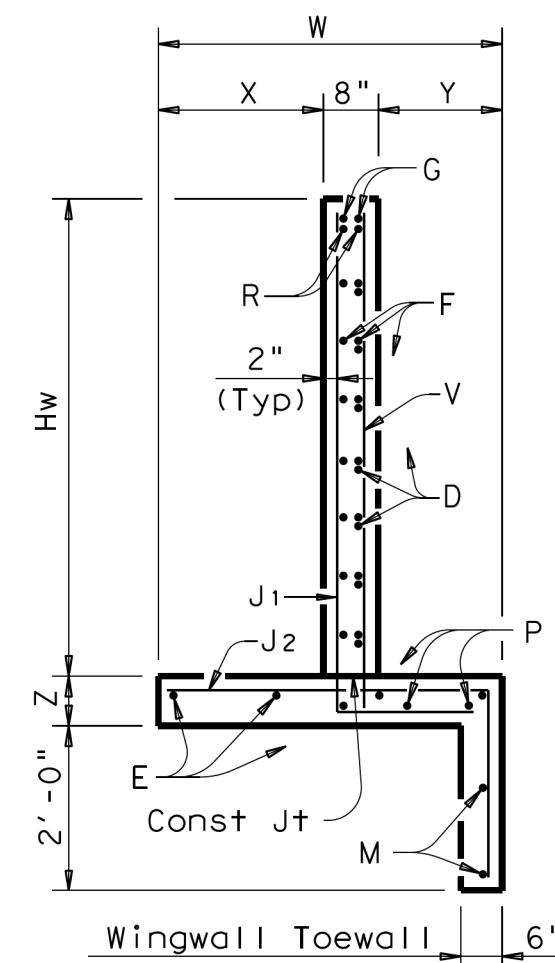
Hw = Height of Wingwall  
 SL:1 = Side Slope Ratio (Horizontal:1 Vertical)  
 Lw = Length of Wingwall  
 Ltw = Culvert Toewall Length  
 N = Number of Culvert Spans

See applicable box culvert standard for H, S, T, and U values.

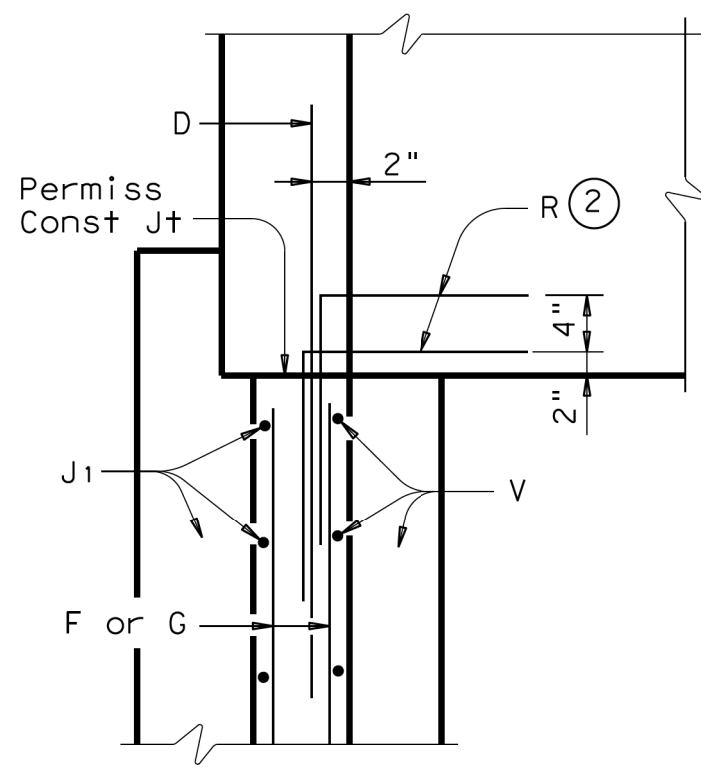


**INSIDE ELEVATION**

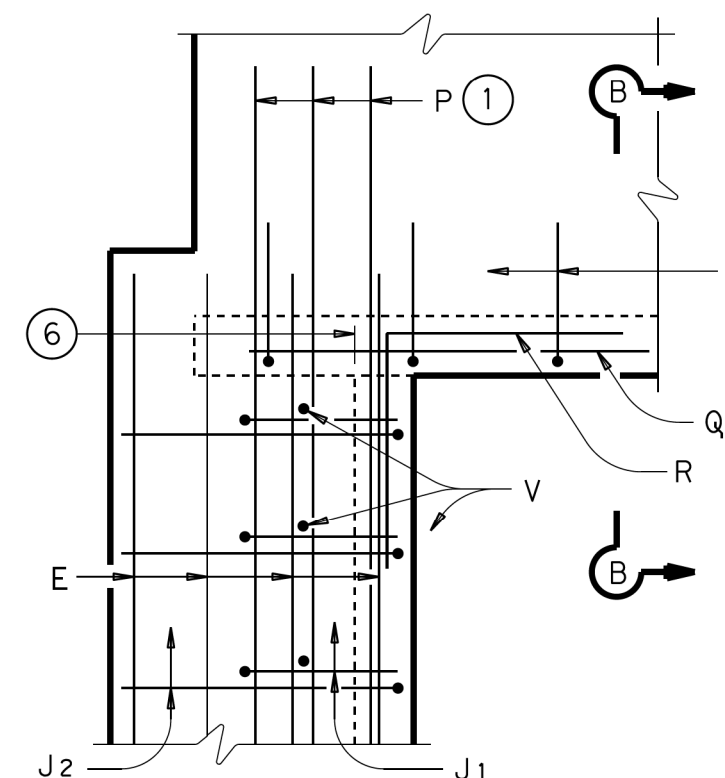
(Showing reinforcing. Culvert and Culvert Toewall reinforcing not shown for clarity.)



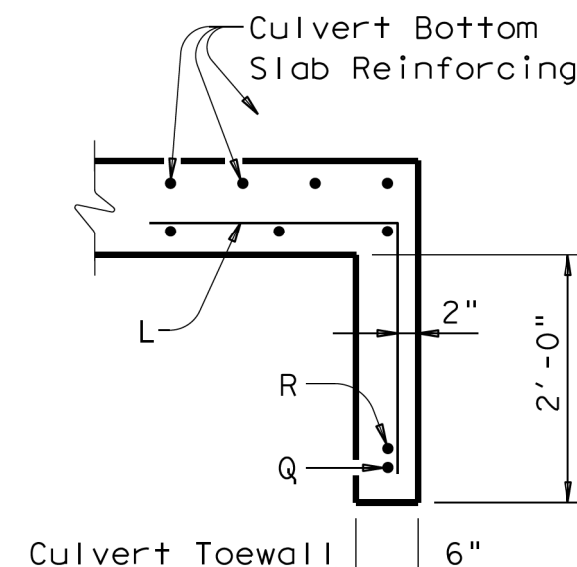
**SECTION A-A**



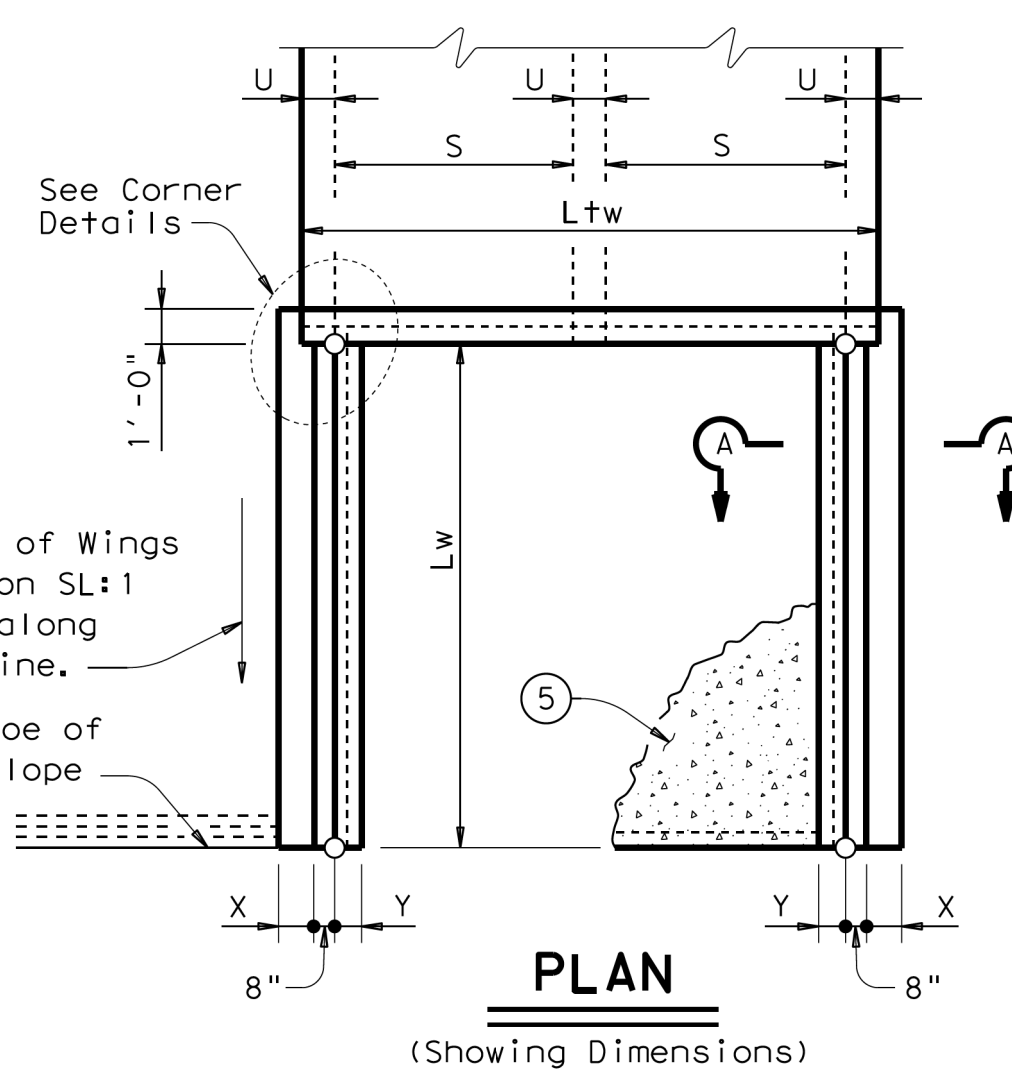
**WINGWALL**



**FOOTING AND TOEWALL**

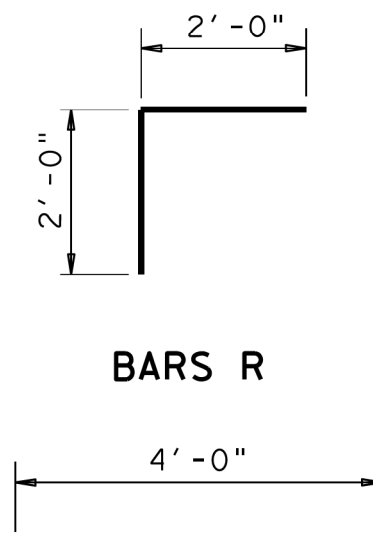


**SECTION B-B**



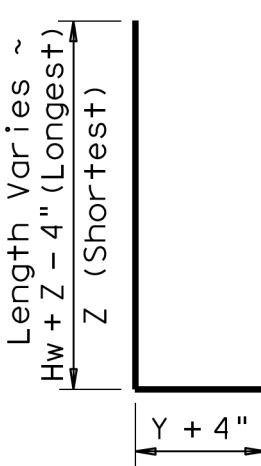
**PLAN**

(Showing Dimensions)

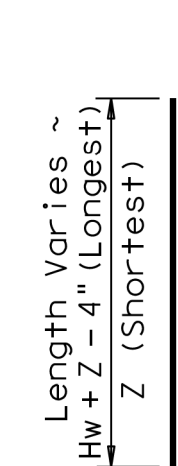


**BARS R**

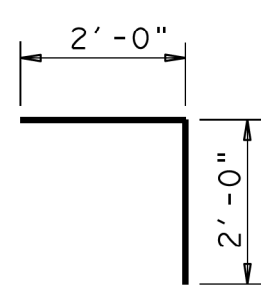
**BARS D**



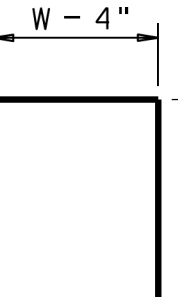
**BARS J1**



**BARS V**



**BARS L**



**BARS J2**

- Extend Bars P 3'-0" minimum into bottom slab of Box Culvert.
- Adjust to fit as necessary to maintain 1 1/4" clear cover and 4" minimum between bars.
- 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.
- Recommended values of Slope are: 2:1, 3:1, 4:1, & 6:1.
- When shown elsewhere on the plans, a 5" deep concrete riprap shall be constructed. Payment for riprap shall be as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, the riprap shall have a 6" wide by 1'-6" deep reinforced concrete toewall along all edges adjacent to natural ground; the toewall shall be reinforced by extending typical riprap reinforcing into the toewall; construction joints or grooved joints, oriented in the direction of flow, shall extend 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.
- At Contractor's option, Culvert Toewall may be ended flush with Wingwall Toewall. Adjust reinforcing from that shown as necessary.
- 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 bridge rail, refer to T6-CM standard. For structures with traffic rail, other than T6, refer to RAC standard.
- For vehicle safety, curb heights and wall heights shall be reduced, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

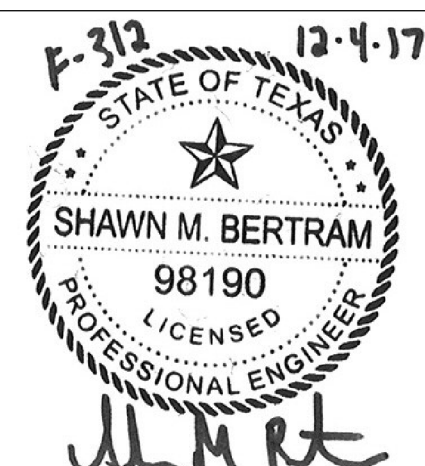
#### GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.  
 All reinforcing steel shall be Grade 60.  
 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.  
 All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.  
 All reinforcing bars shall be solid to provide a minimum of 1 1/4" clear cover.  
 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 BCS 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.

|                                                                                            |         |                                 |           |
|--------------------------------------------------------------------------------------------|---------|---------------------------------|-----------|
|                                                                                            |         | <b>Bridge Division Standard</b> |           |
| <b>CONCRETE WINGWALLS</b><br><b>WITH STRAIGHT WINGS FOR</b><br><b>0° SKEW BOX CULVERTS</b> |         |                                 |           |
| <b>SW-O</b>                                                                                |         |                                 |           |
| FILE: SW-Ostd.dgn                                                                          | DN: GAF | CK: CAT                         | DW: TxDOT |
| ©TxDOT February 2010                                                                       | CONT    | SECT                            | JOB       |
| REVISIONS                                                                                  |         | HIGHWAY                         |           |
| 11-10: Add note for synthetic fibers.                                                      |         | DIST                            | COUNTY    |
|                                                                                            |         | SHEET NO.                       |           |



| Revision No. | Date | Description |
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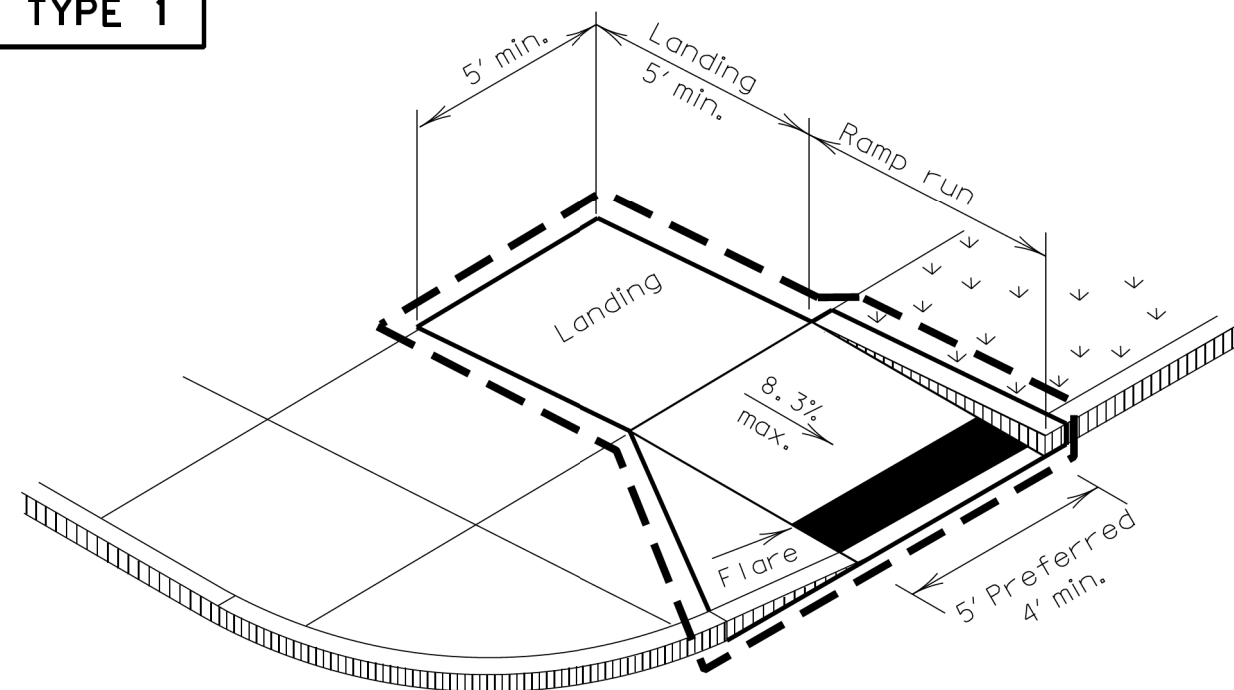
Project No.: 32388  
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 SW-O



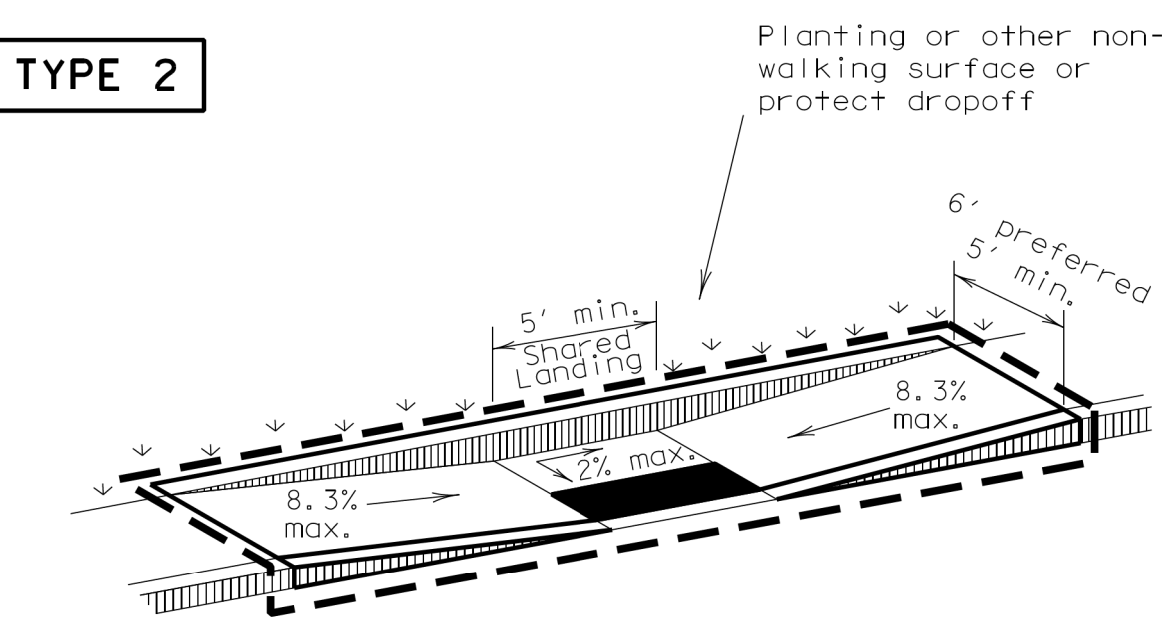
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TYPE 1



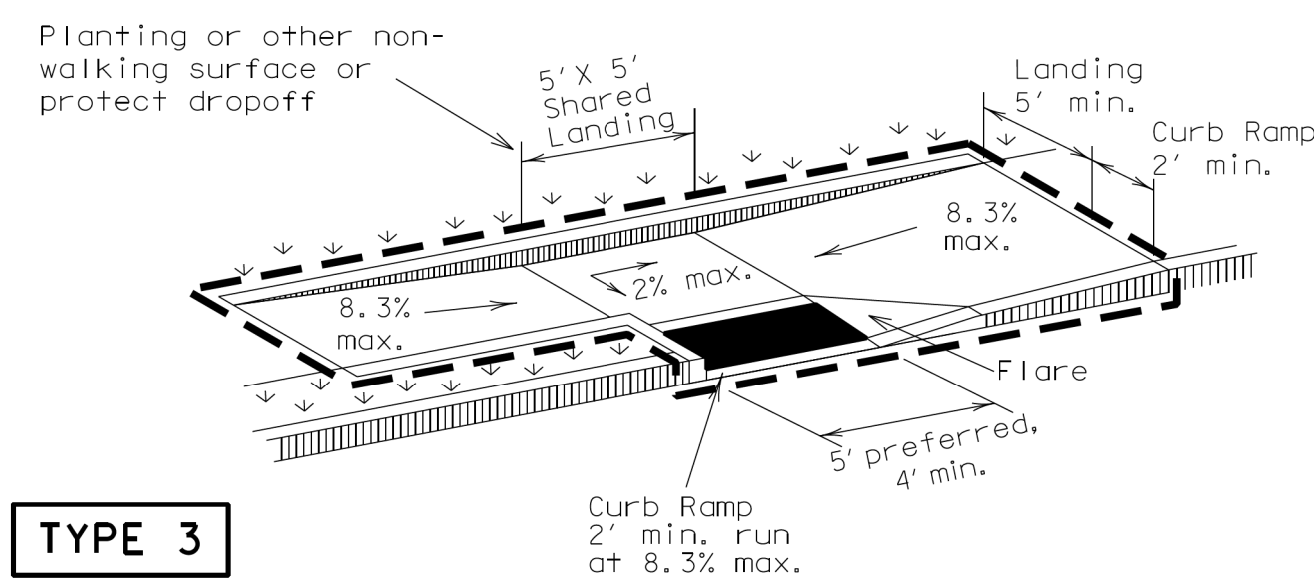
PERPENDICULAR CURB RAMP

TYPE 2

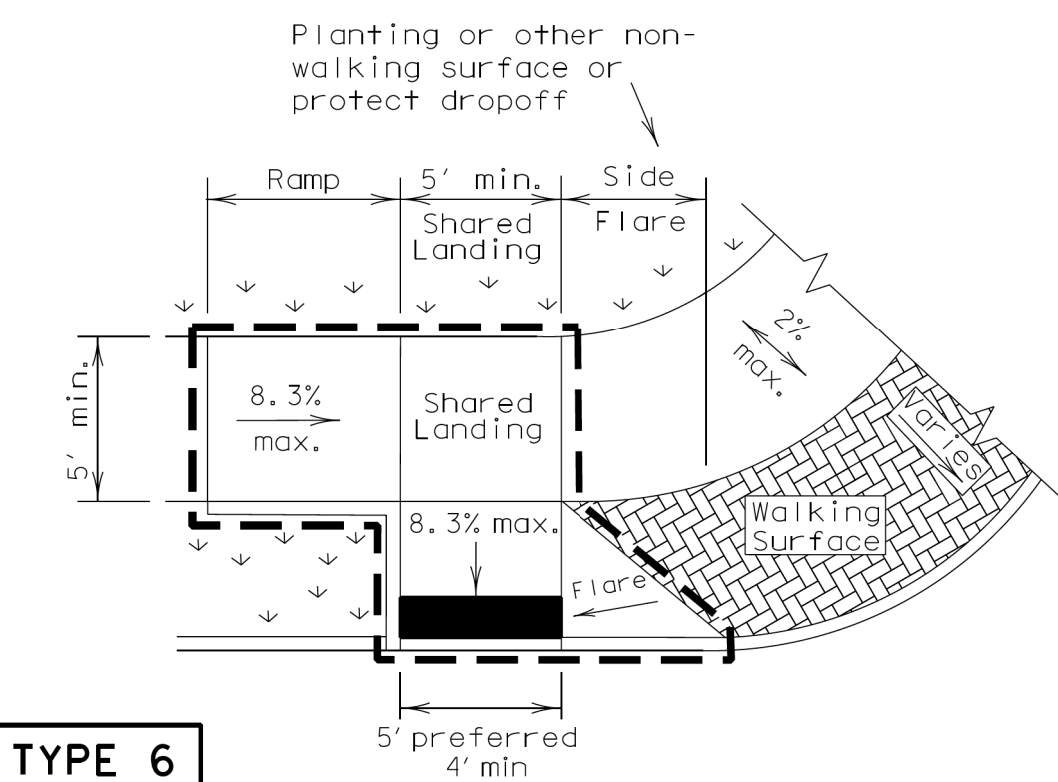


PARALLEL CURB RAMP

(Use only where water will not pond in the landing.)



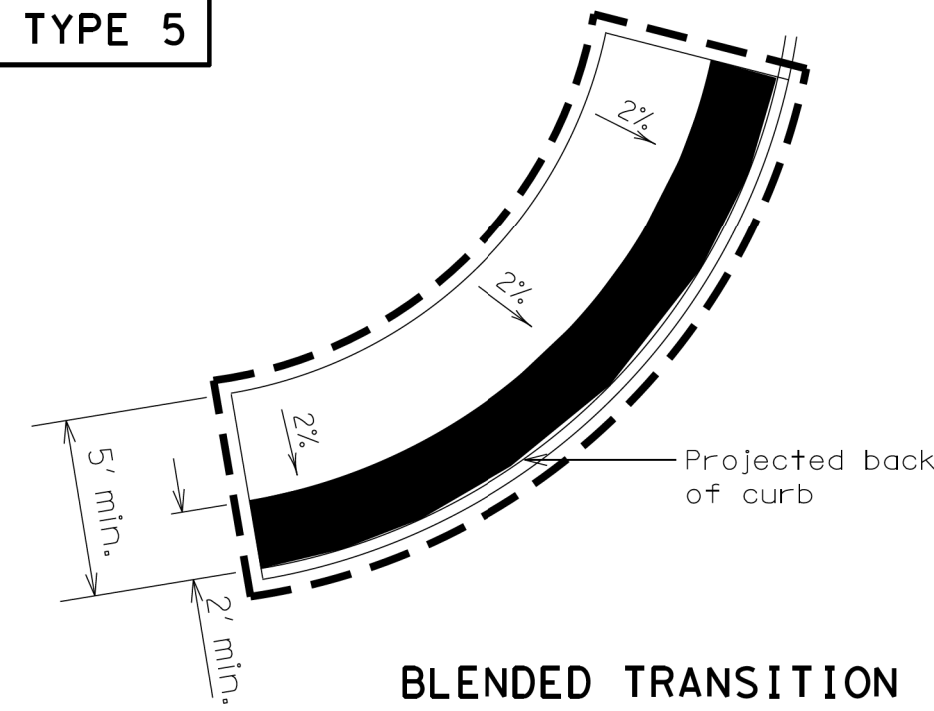
TYPE 3



TYPE 6

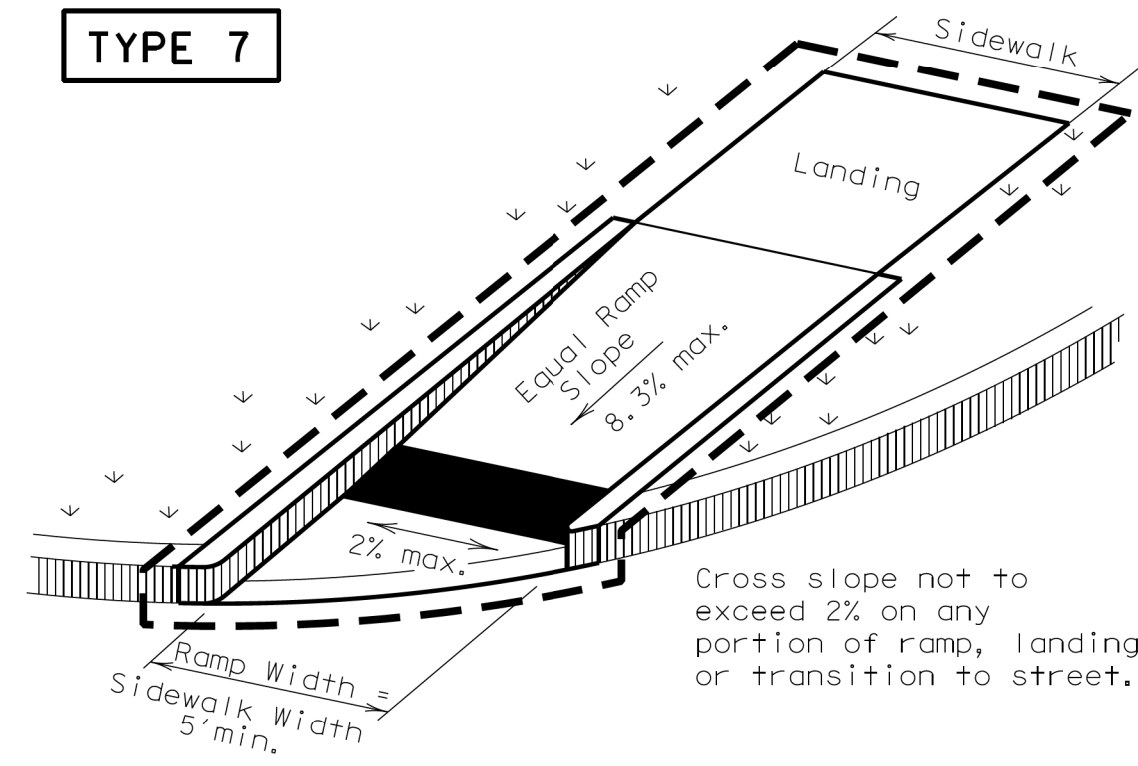
COMBINATION CURB RAMPS

TYPE 5



BLENDED TRANSITION

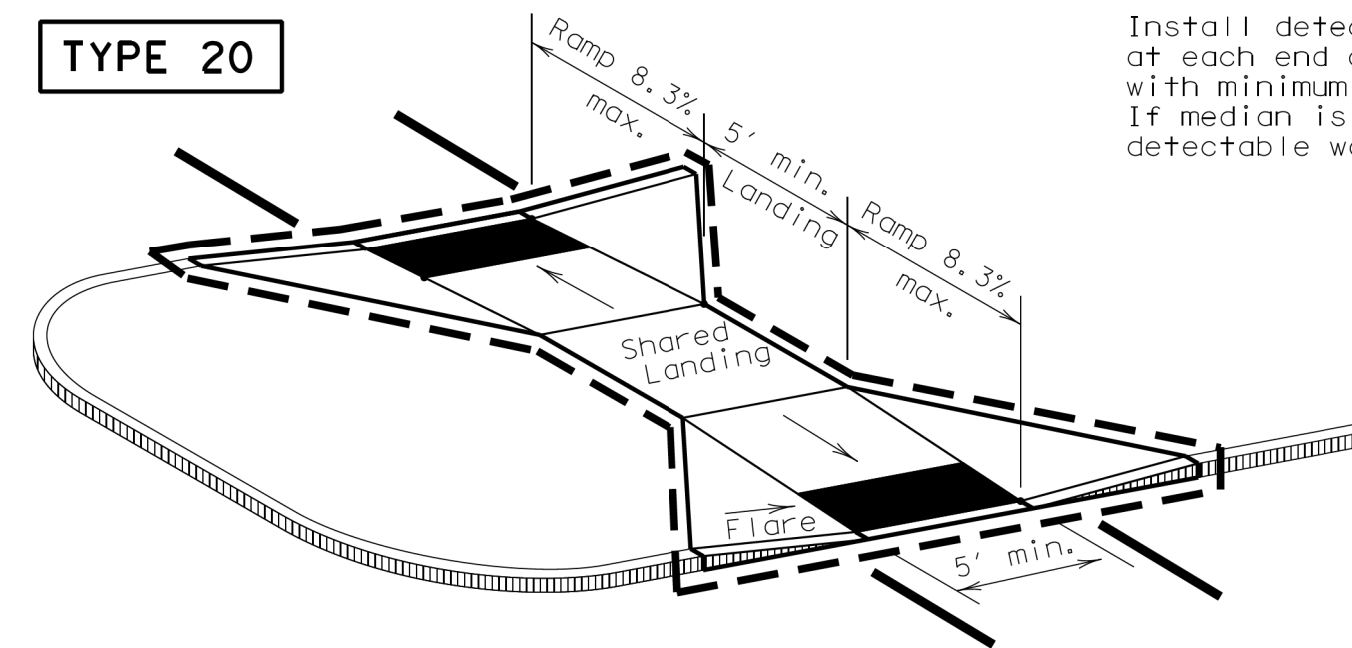
TYPE 7



(Sidewalk set back from curb)

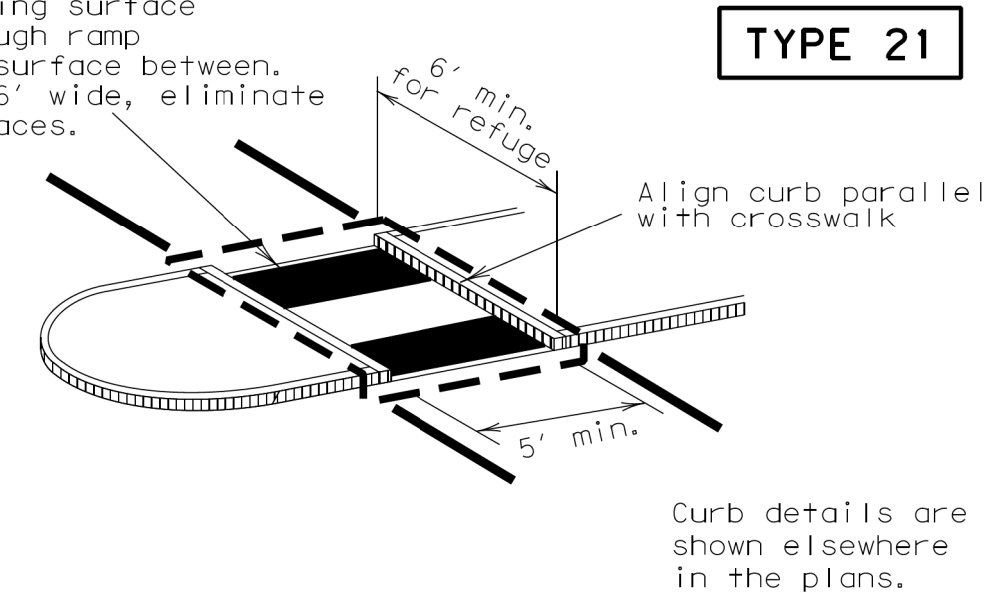
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 20



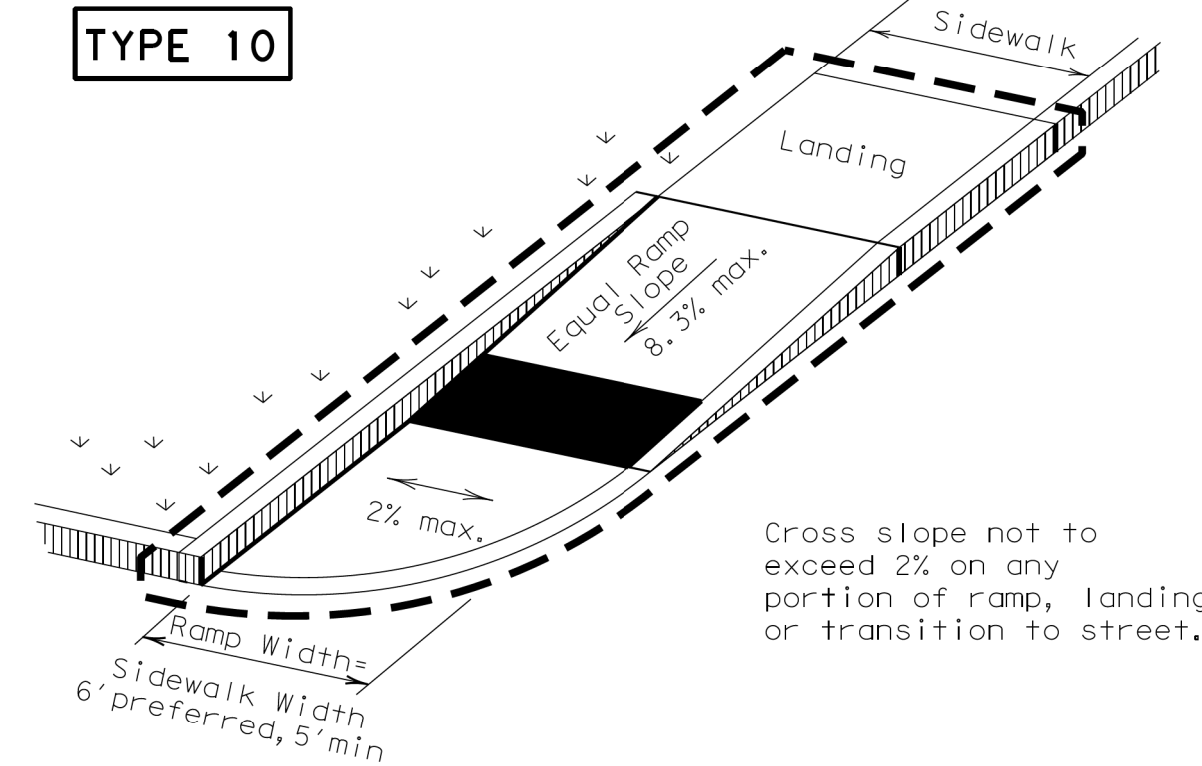
CURB RAMPS AT MEDIAN ISLANDS

TYPE 21



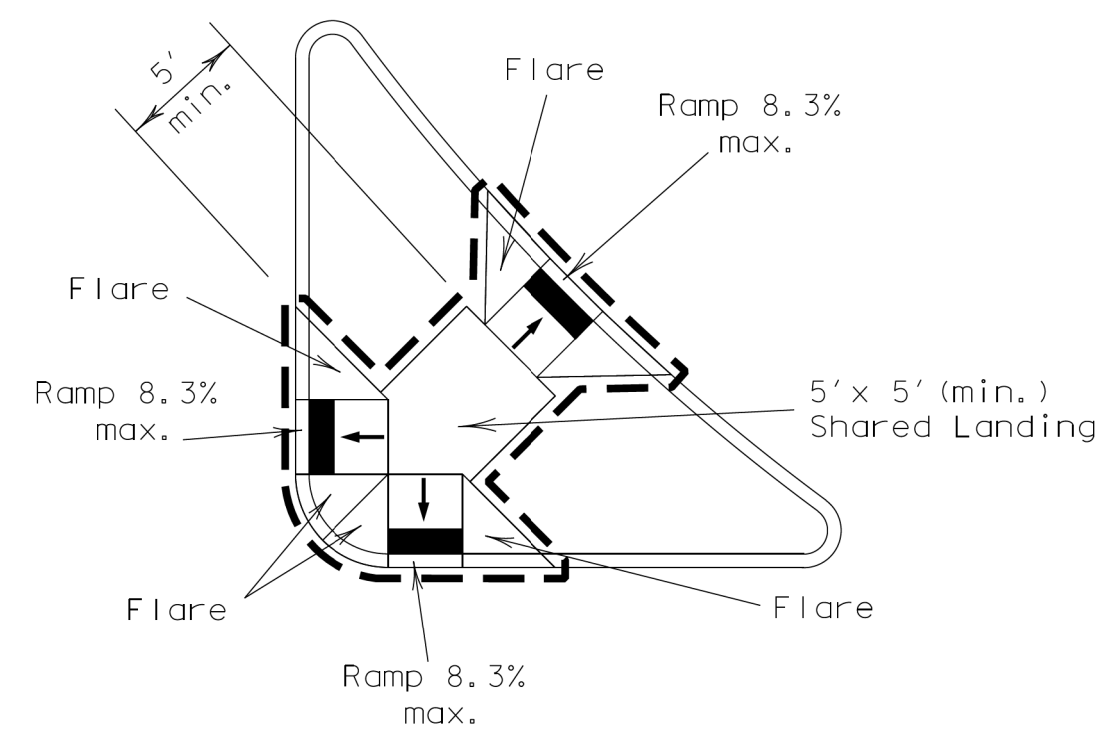
Curb details are shown elsewhere in the plans.

TYPE 10



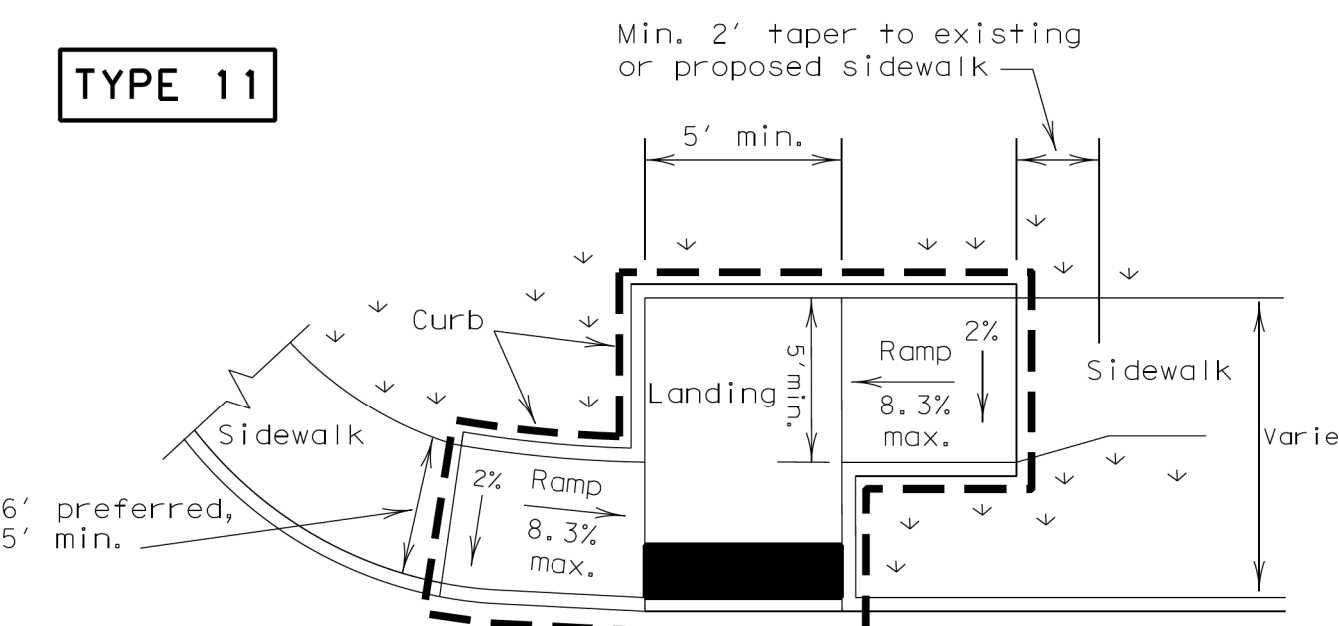
(Sidewalk adjacent to curb)

TYPE 22



COMBINATION ISLAND RAMPS

TYPE 11



OFFSET PARALLEL CURB RAMP

## NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

\ \ Denotes planting or non-walking surface not part of pedestrian circulation path.

--- Ramp Limits of Payment

■ Detectable Warning Surface

SHEET 1 OF 4



# PEDESTRIAN FACILITIES

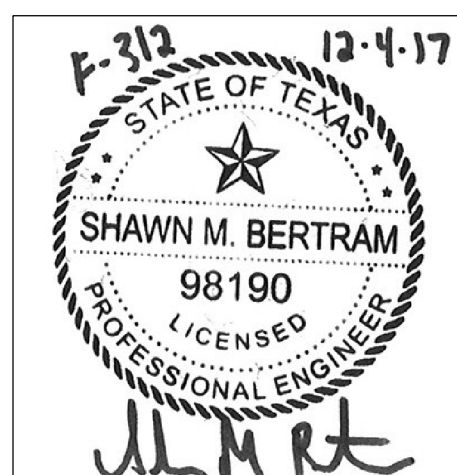
## CURB RAMPS

PED-12A

|                    |             |        |           |           |
|--------------------|-------------|--------|-----------|-----------|
| FILE: ped12a.dgn   | DATE: TxDOT | CR: RM | DW: TxDOT | CK: VP    |
| © TxDOT March 2002 | CONT        | SECT   | JOB       | HIGHWAY   |
| REVISIONS          |             |        |           |           |
| VP June 13, 2012   | DIST        | COUNTY |           | SHEET NO. |



| Revision No. | Date | Description |
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TXDOT DETAIL  
PED-12A  
(1 OF 4)

C9.10



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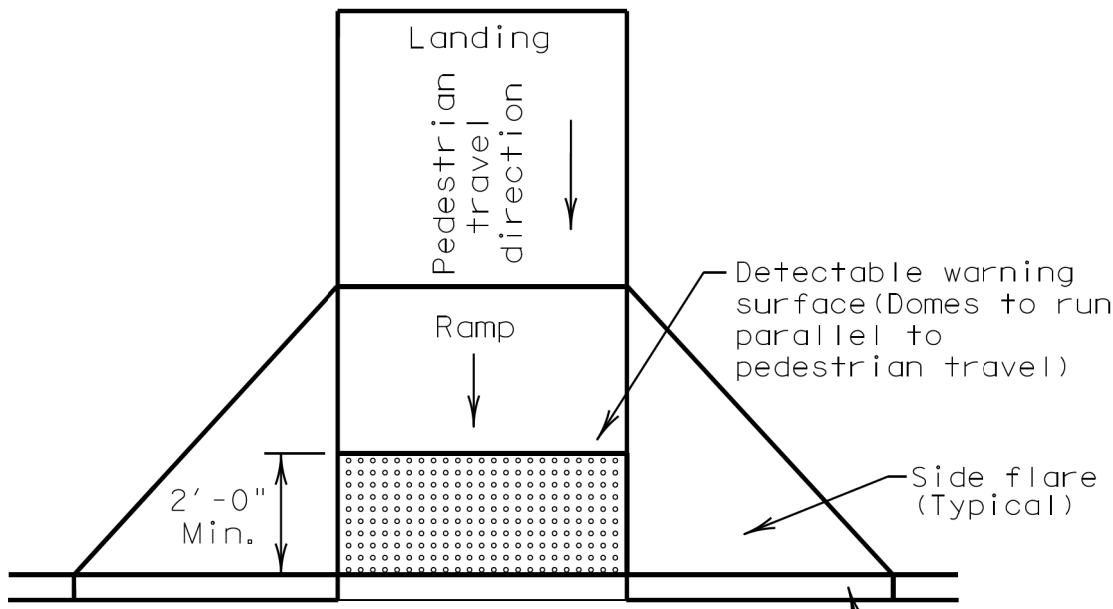
General Notes

Curb Ramps

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5'x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

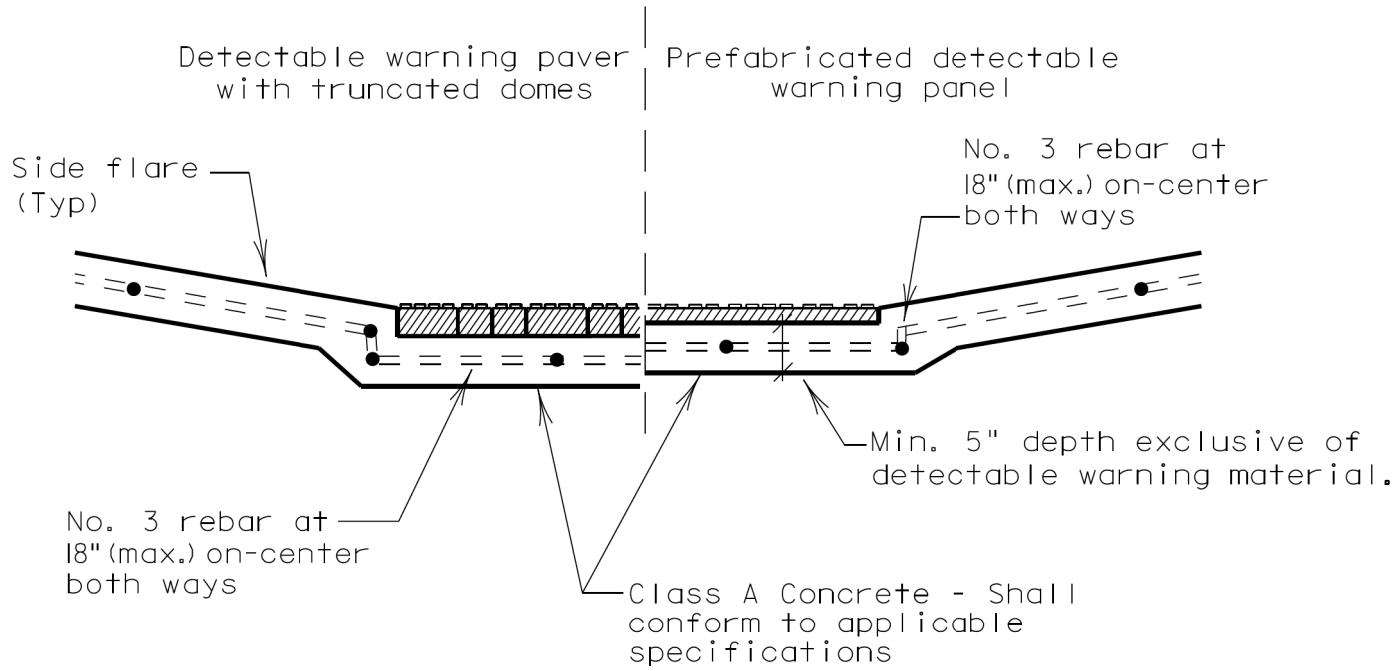
Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

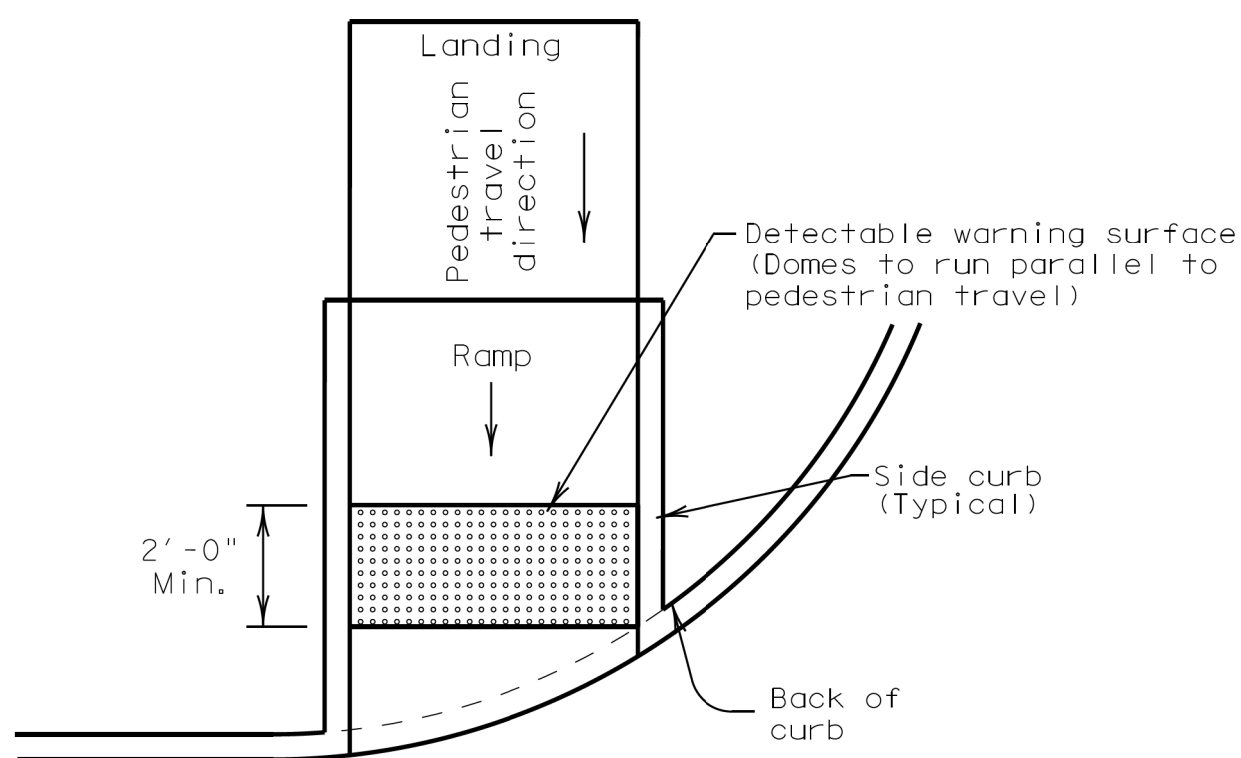


PERPENDICULAR CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.

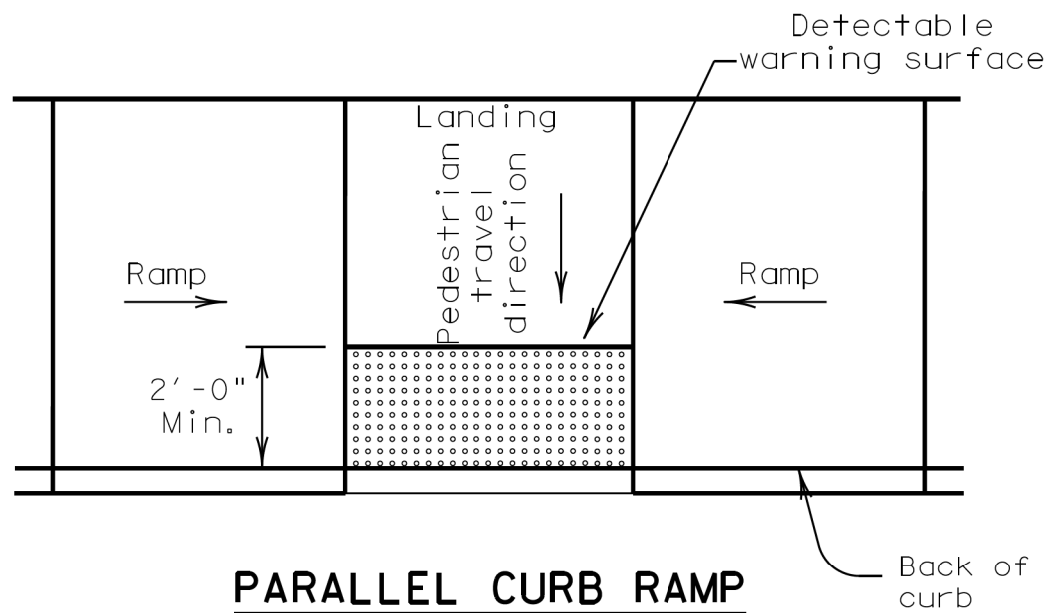


SECTION: CURB RAMP AT DETECTABLE WARNING



DIRECTIONAL CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.



PARALLEL CURB RAMP

Typical placement of detectable warning surface on landing at street edge.

DETECTABLE WARNINGS

Detectable Warning Pavers

24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.

SHEET 2 OF 4

Design Division Standard

PEDESTRIAN FACILITIES  
CURB RAMPS  
  
PED-12A

|                    |           |        |           |         |
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| FILE: ped12a.dgn   | DN: TxDOT | CR: RM | DN: TxDOT | CR: VP  |
| © TxDOT March 2002 | CONT      | SECT   | JOB       | HIGHWAY |
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| VP June 13, 2012   | DIST      | COUNTY | SHEET NO. |         |

WILLIAMSON COUNTY  
1848

Expo Center RV Park  
210 Carlos Parker Blvd.  
Taylor, Texas 76574

9500 AMBERGLEN BLVD.  
BLDG F, SUITE 125  
AUSTIN, TEXAS 78729  
TEL (512) 252-8141  
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F-312 12-4-17

STATE OF TEXAS  
SHAWN M. BERTRAM  
98190  
LICENSED PROFESSIONAL ENGINEER  
JLM Rt

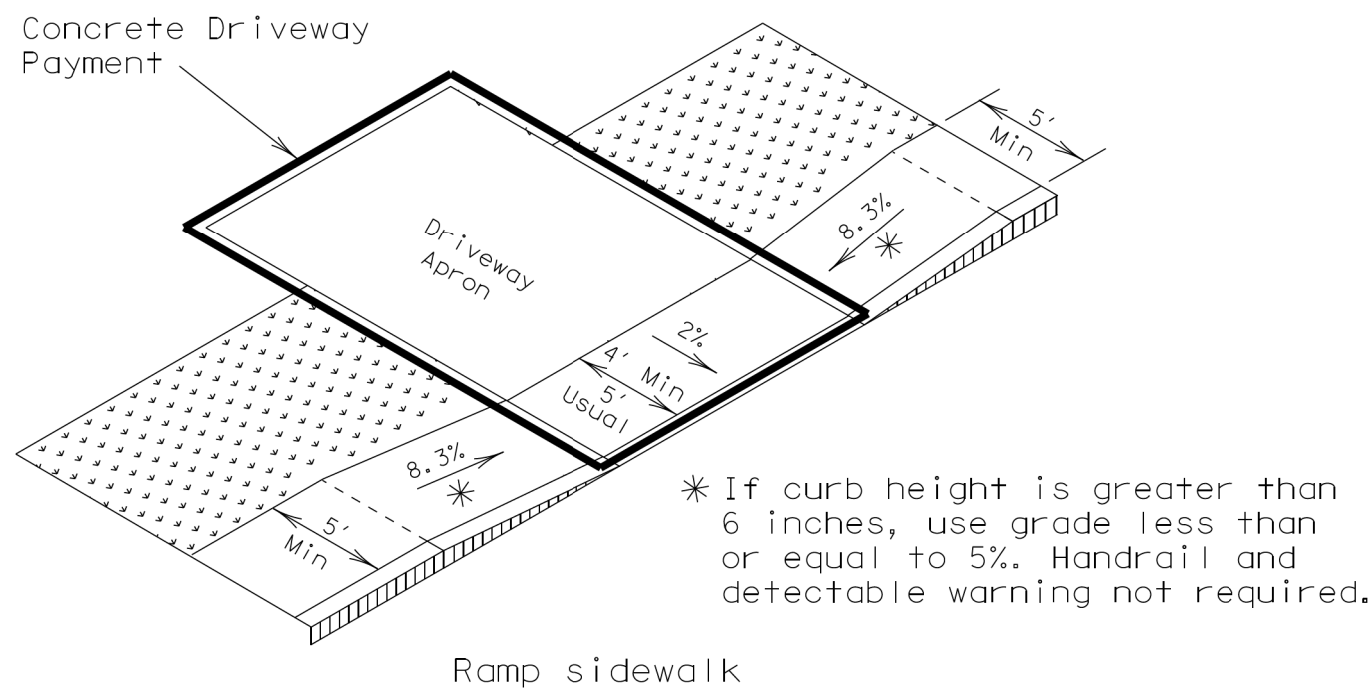
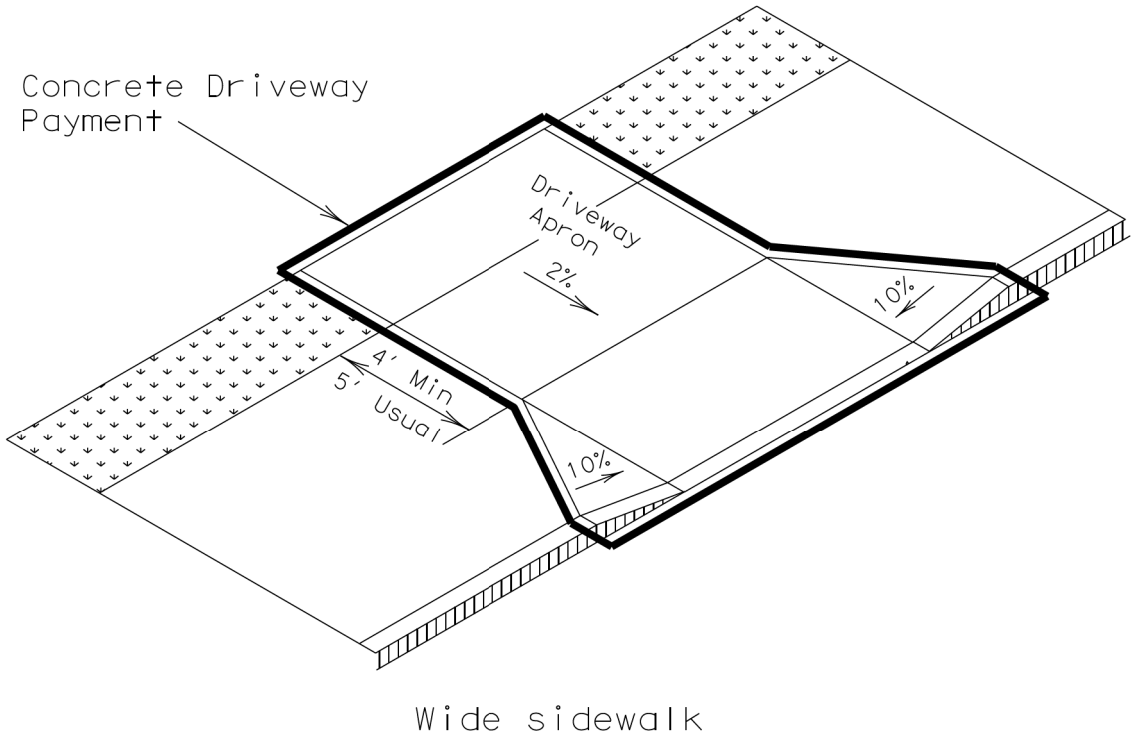
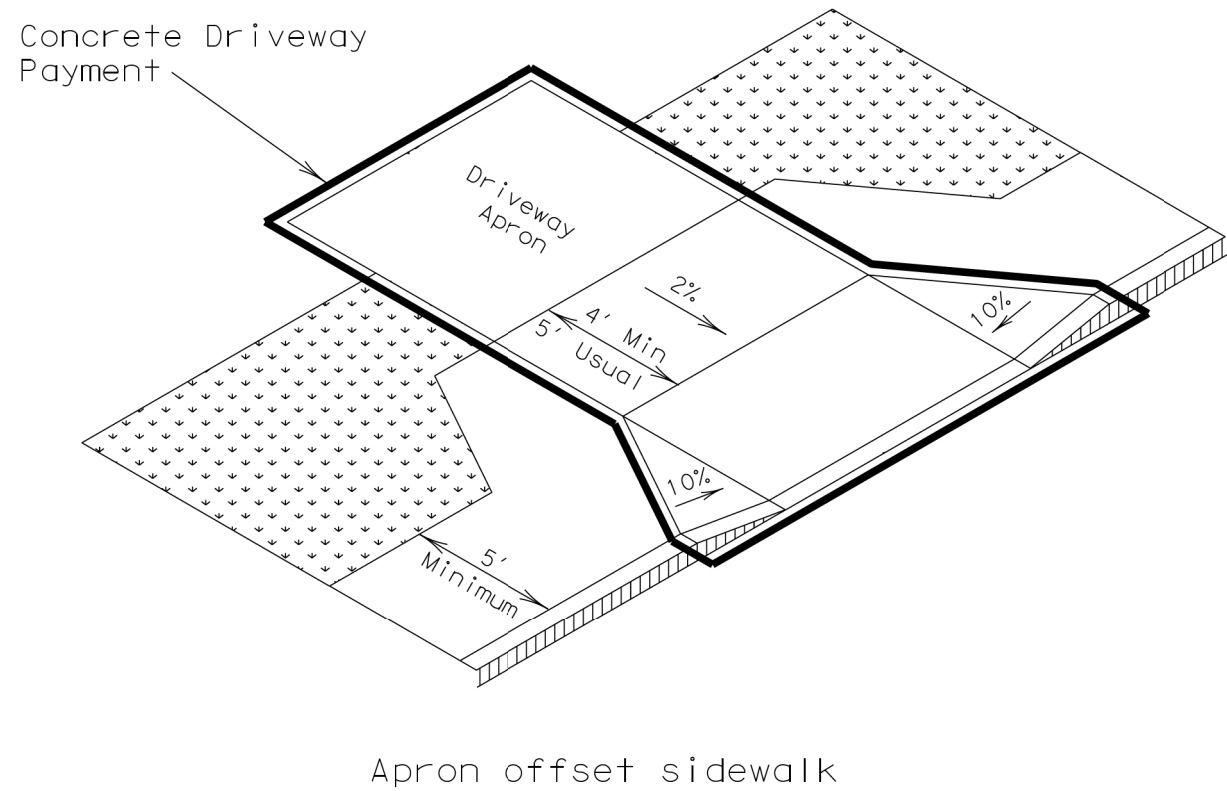
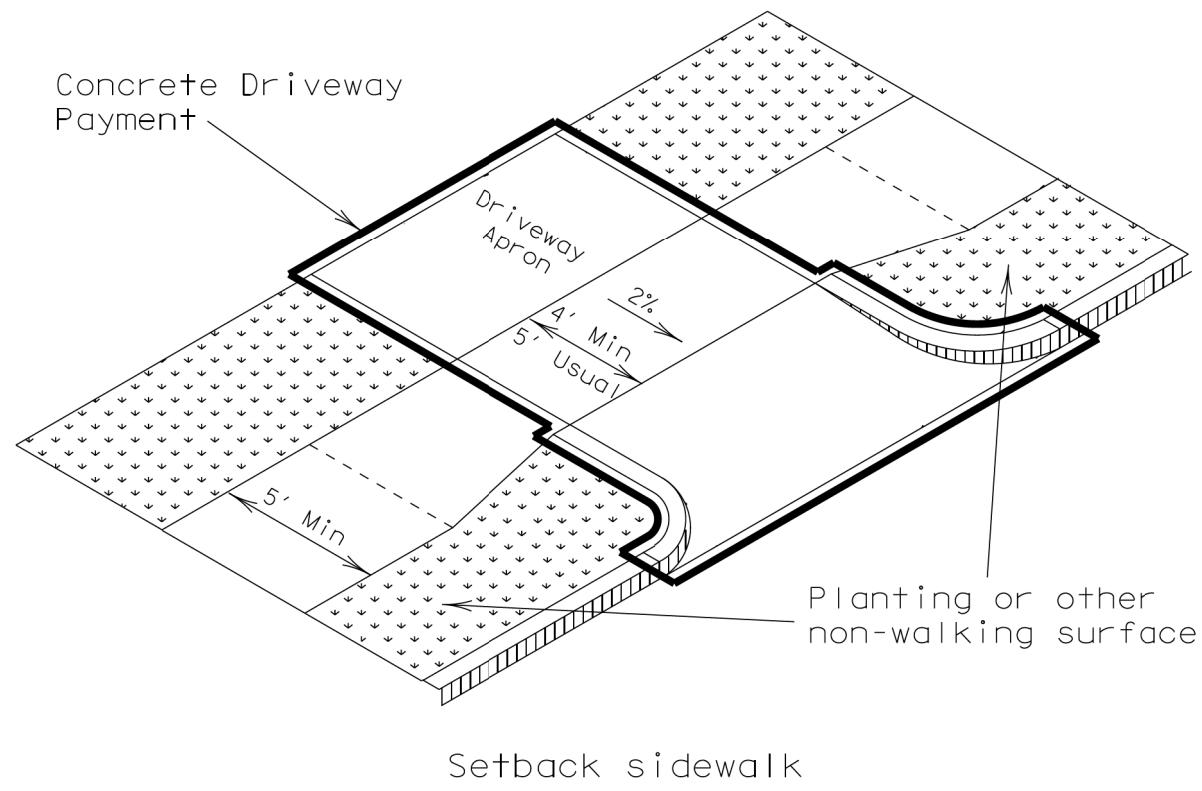
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| Issued: 12/04/2017 |
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| Checked By: SB     |

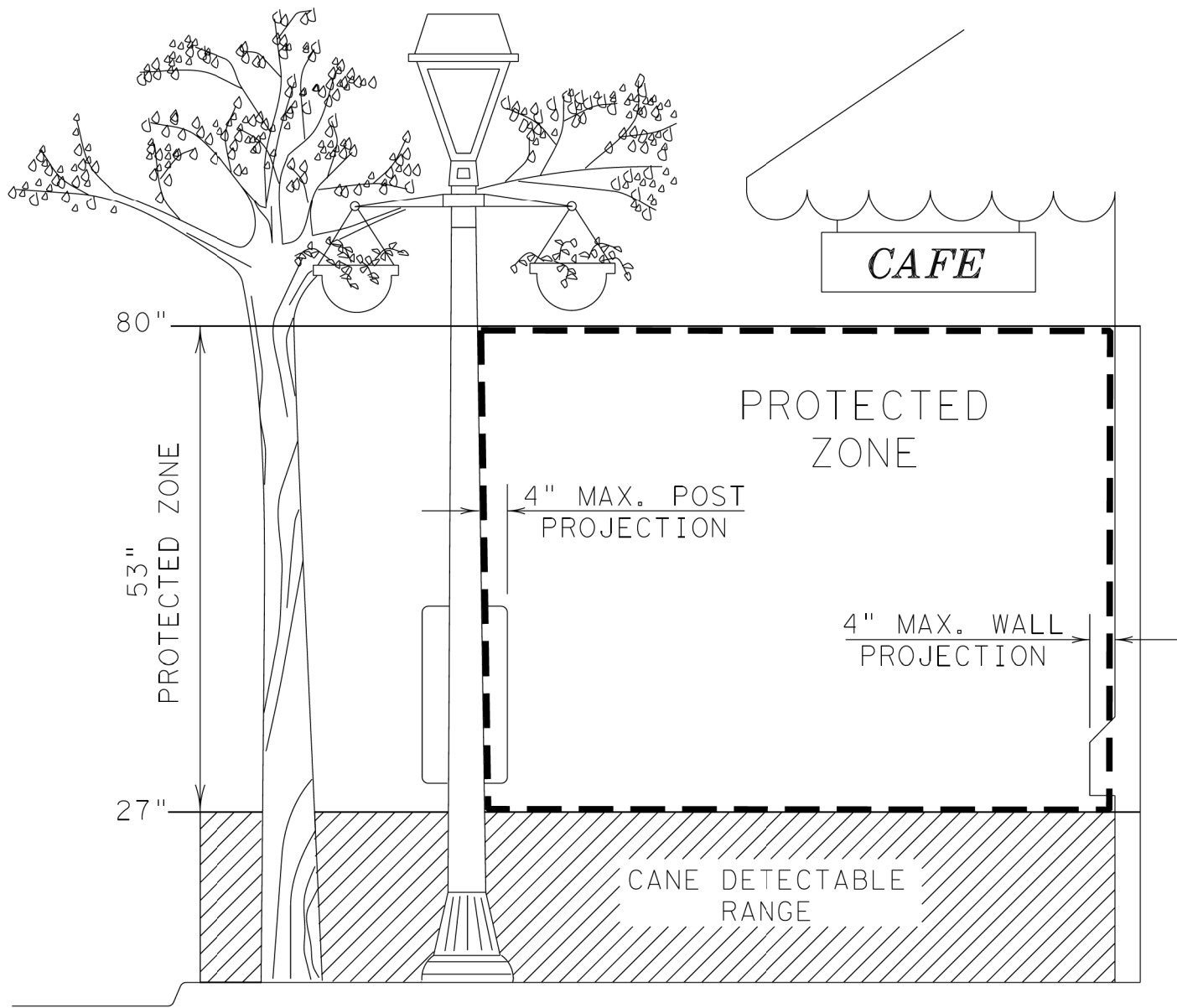
TXDOT DETAIL  
PED-12A  
(2 OF 4)



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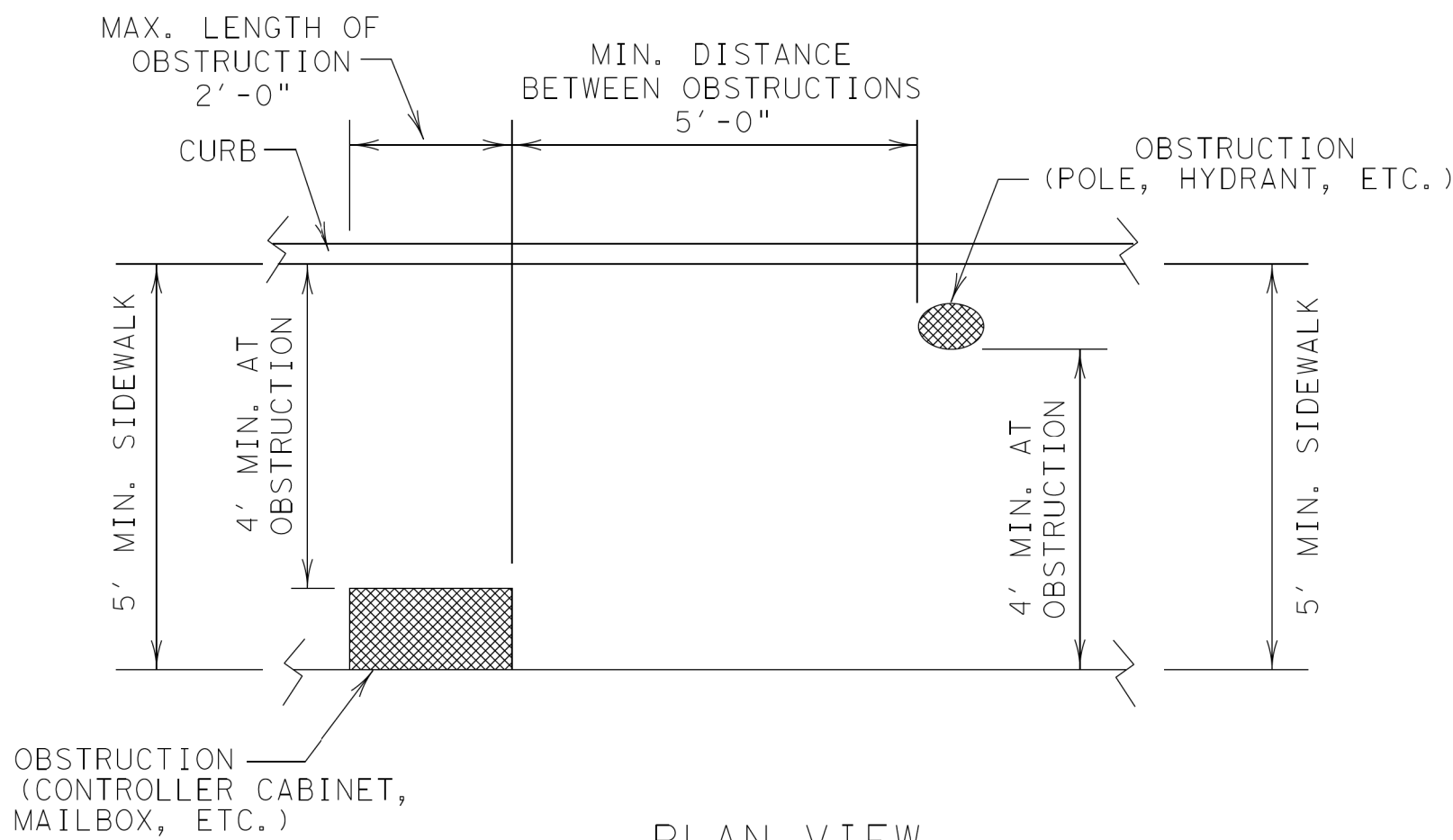


SIDEWALK TREATMENT AT DRIVEWAYS



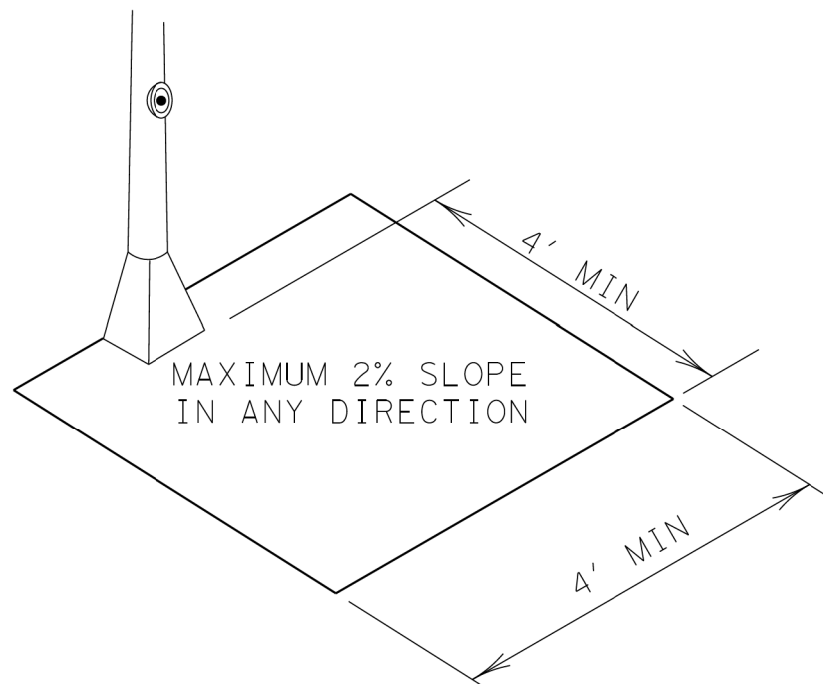
PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27" and 80" above the surface.

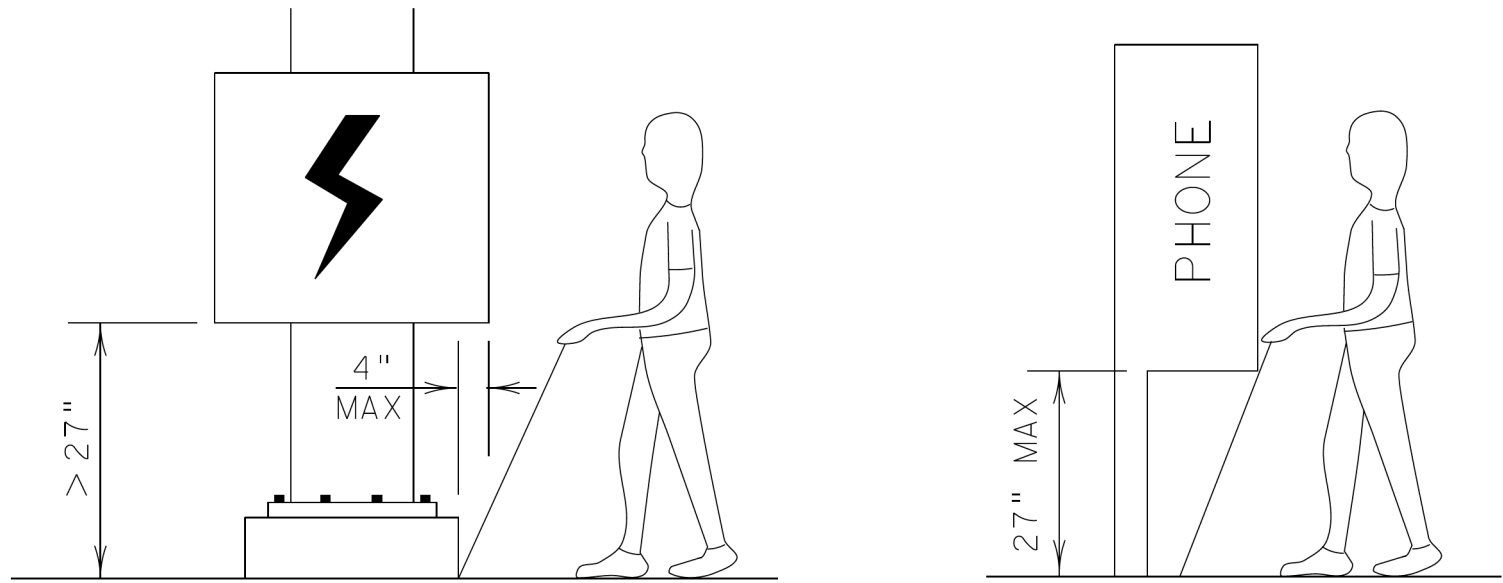


PLAN VIEW  
PLACEMENT OF STREET FIXTURES

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)



CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



When an obstruction of a height greater than 27" from the surface would create a protrusion of more than 4" into the pedestrian circulation area, construct additional curb or foundation at the bottom to provide a maximum 4" overhang.

Protruding objects of a height  $\leq 27"$  are detectable by cane and do not require additional treatment.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Design Division Standard

PEDESTRIAN FACILITIES  
CURB RAMPS  
  
PED-12A

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| © TxDOT March 2002 | CONT        | SECT   | JOB         | HIGHWAY |
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13-4-17

STATE OF TEXAS  
SHAWN M. BERTRAM  
98190  
LICENSED PROFESSIONAL ENGINEER  
JLM Rt

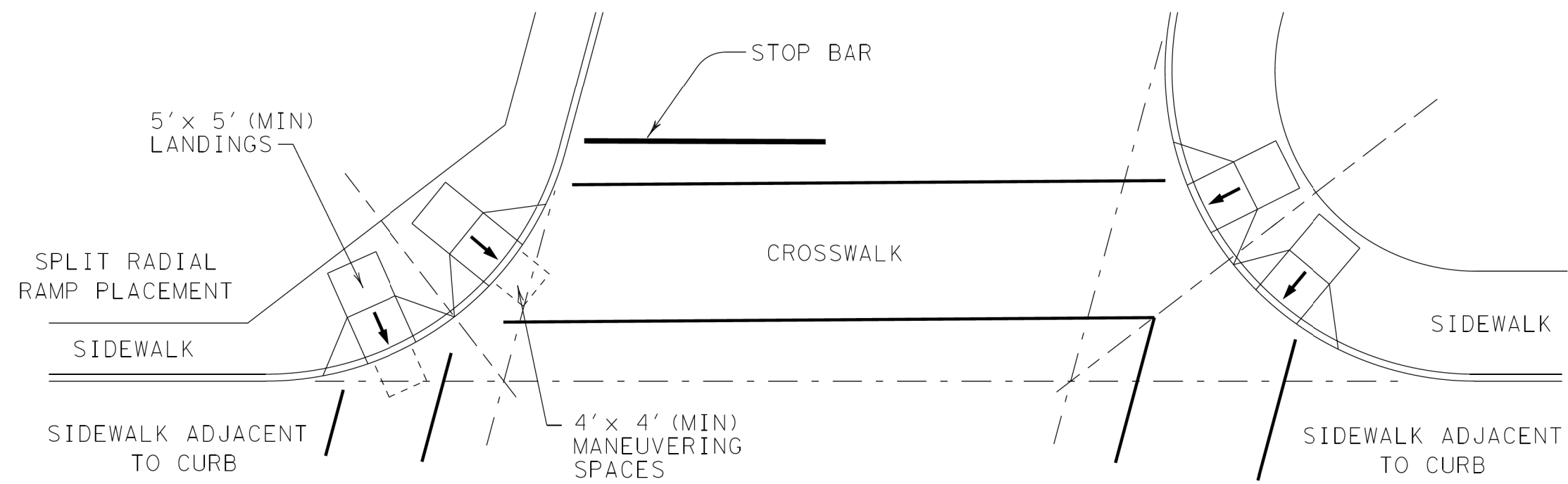
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Drawn By: JN  
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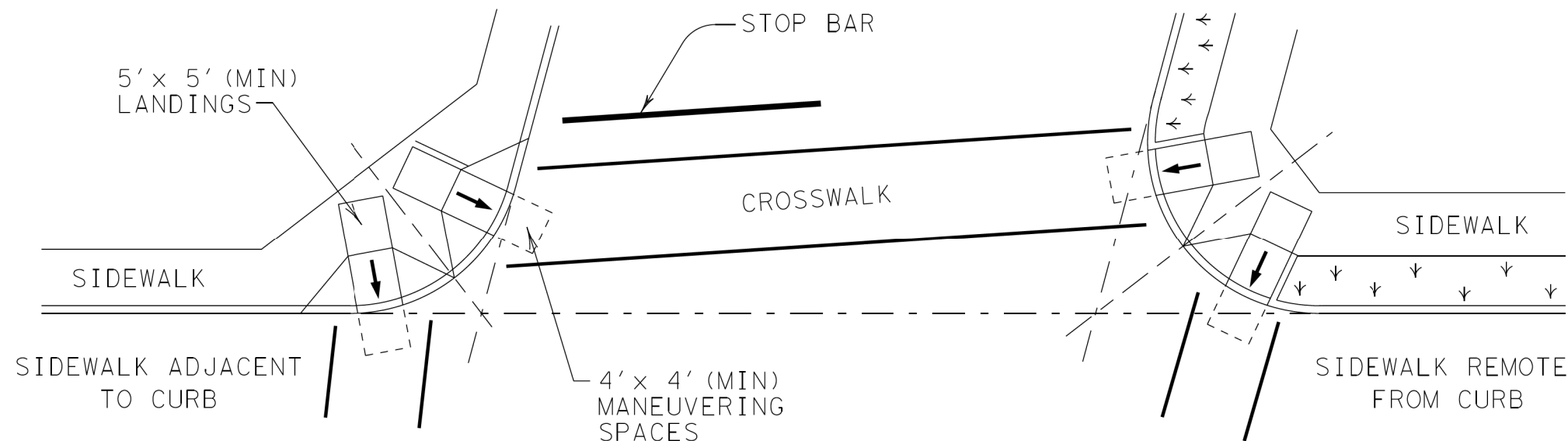
TXDOT DETAIL  
PED-12A  
(3 OF 4)



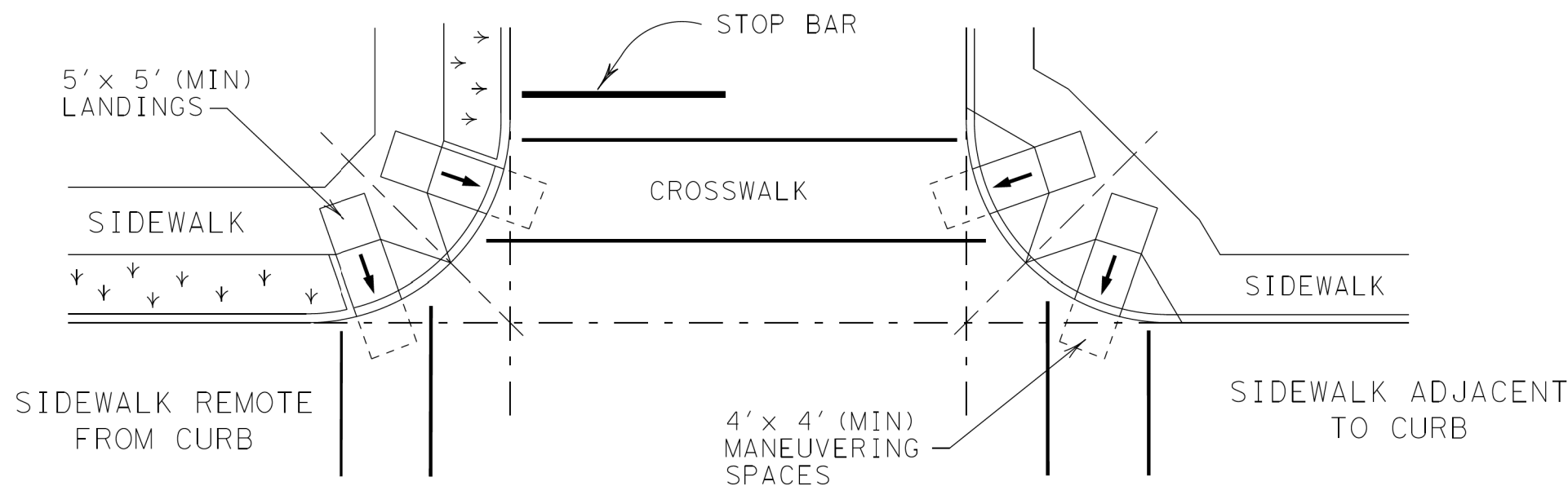
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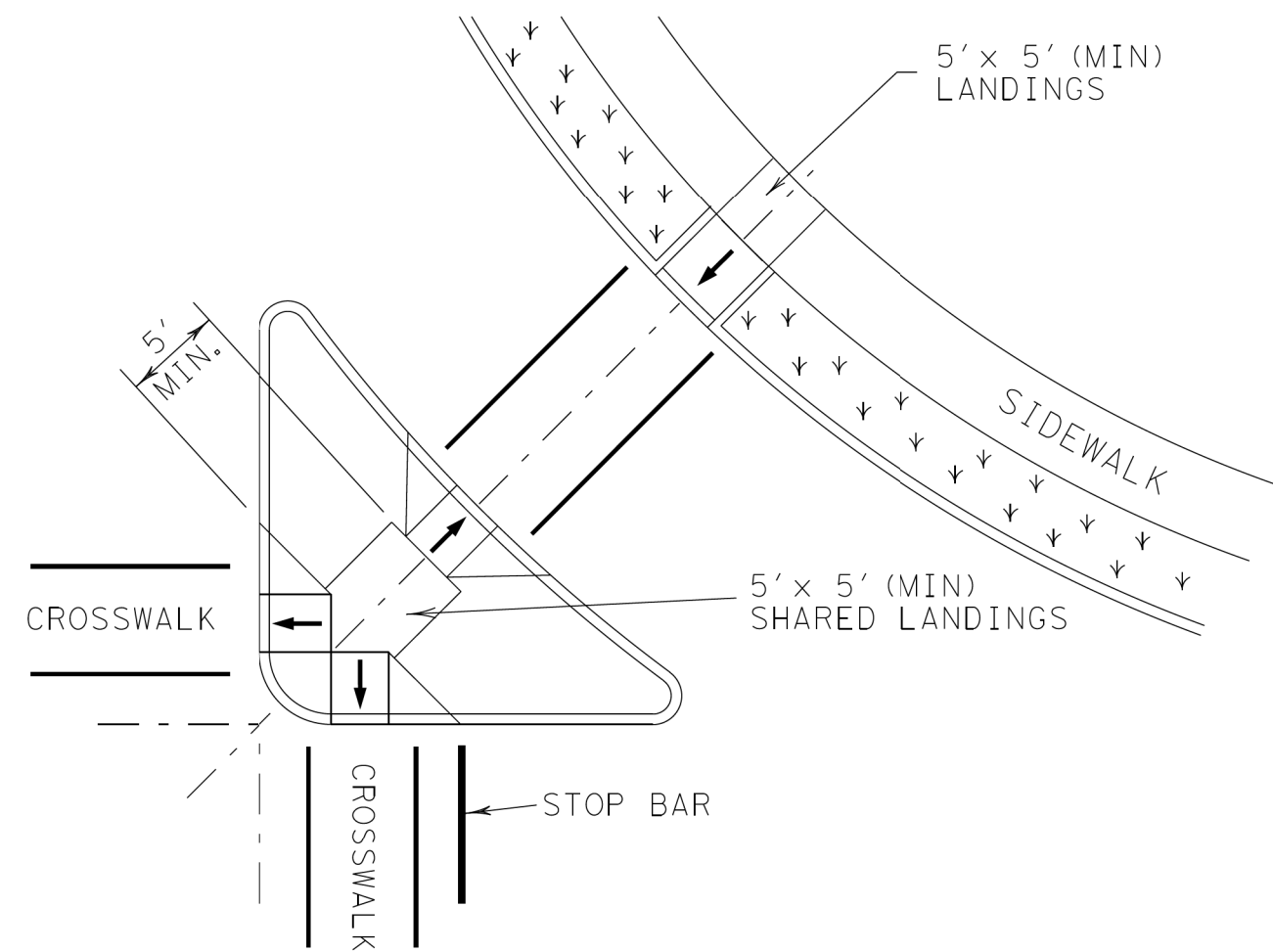
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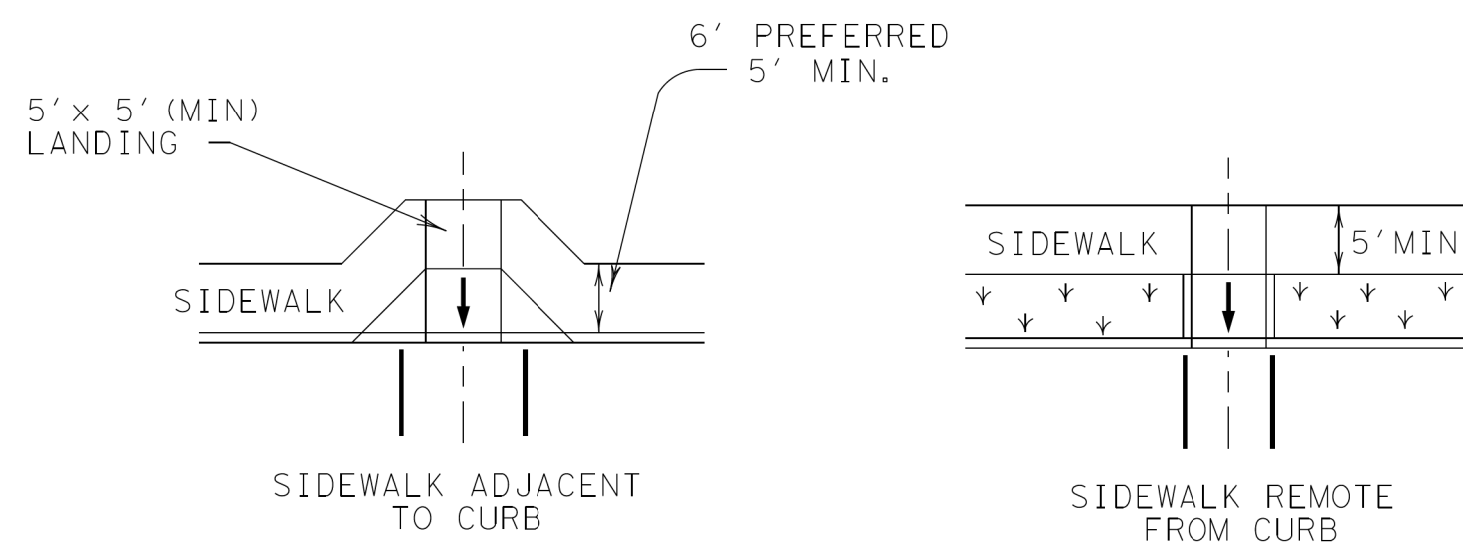
SKewed INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION  
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT  
PERPENDICULAR RAMPS

TYPICAL CROSSING LAYOUTS

SHEET 4 OF 4



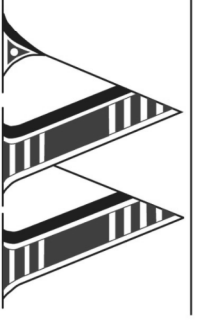
Texas Department of Transportation

Design  
Division  
Standard

PEDESTRIAN FACILITIES  
CURB RAMPS

PED-12A

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| VP June 13, 2012   | DIST      | COUNTY | SHEET NO. |         |



WILLIAMSON  
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F-312 12-4-17

STATE OF TEXAS

SHAWN M. BERTRAM

98190

LICENSED PROFESSIONAL ENGINEER

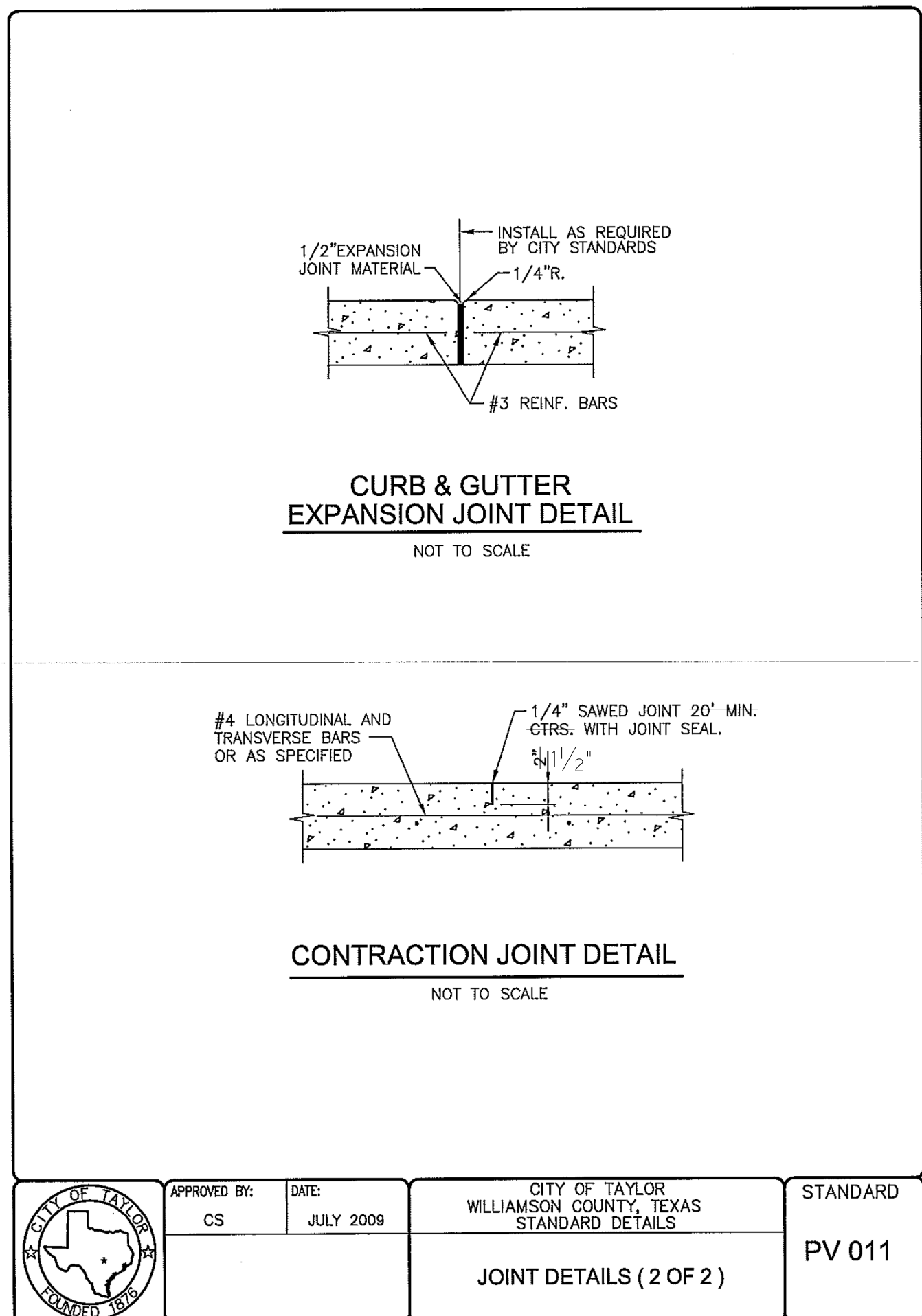
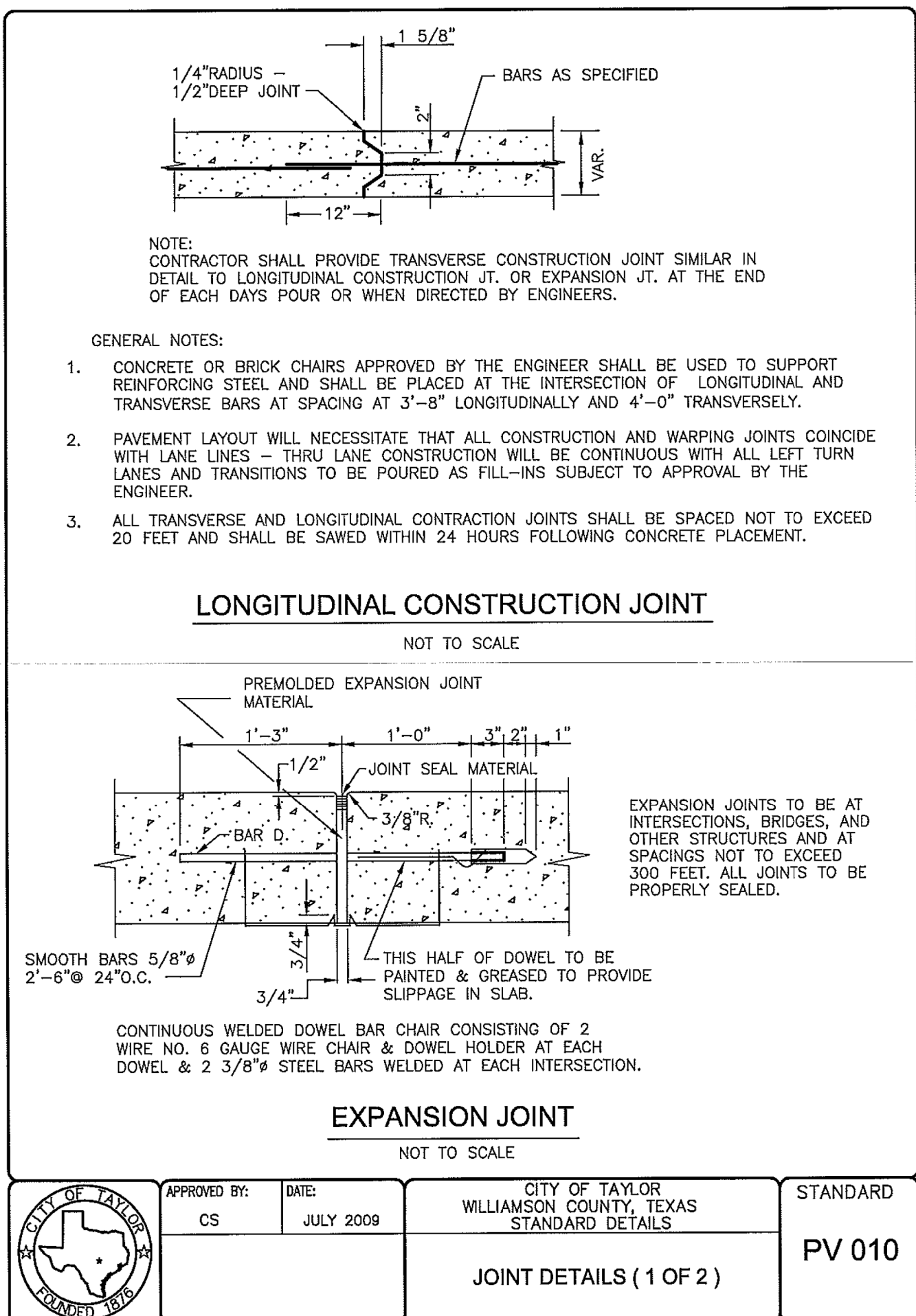
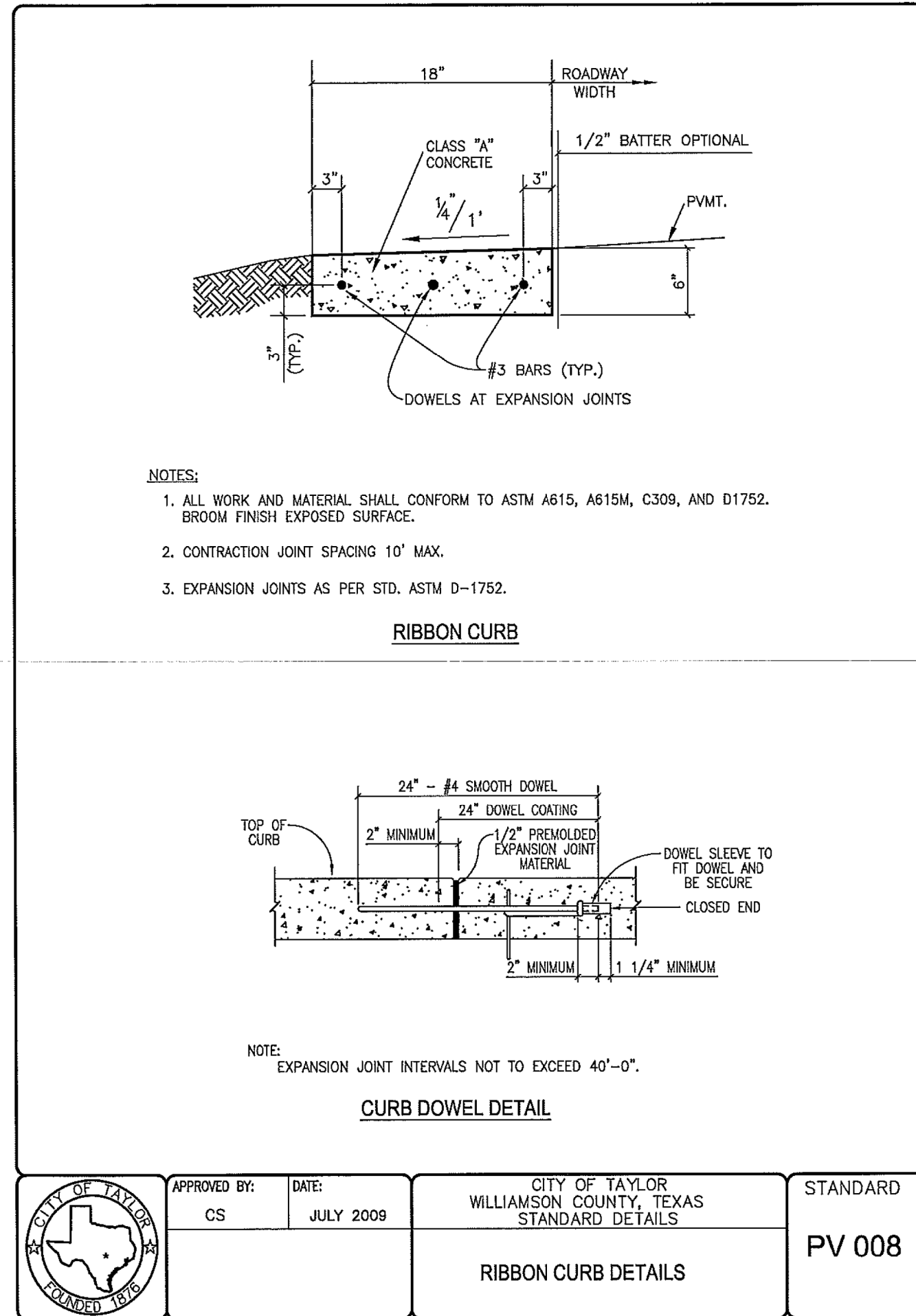
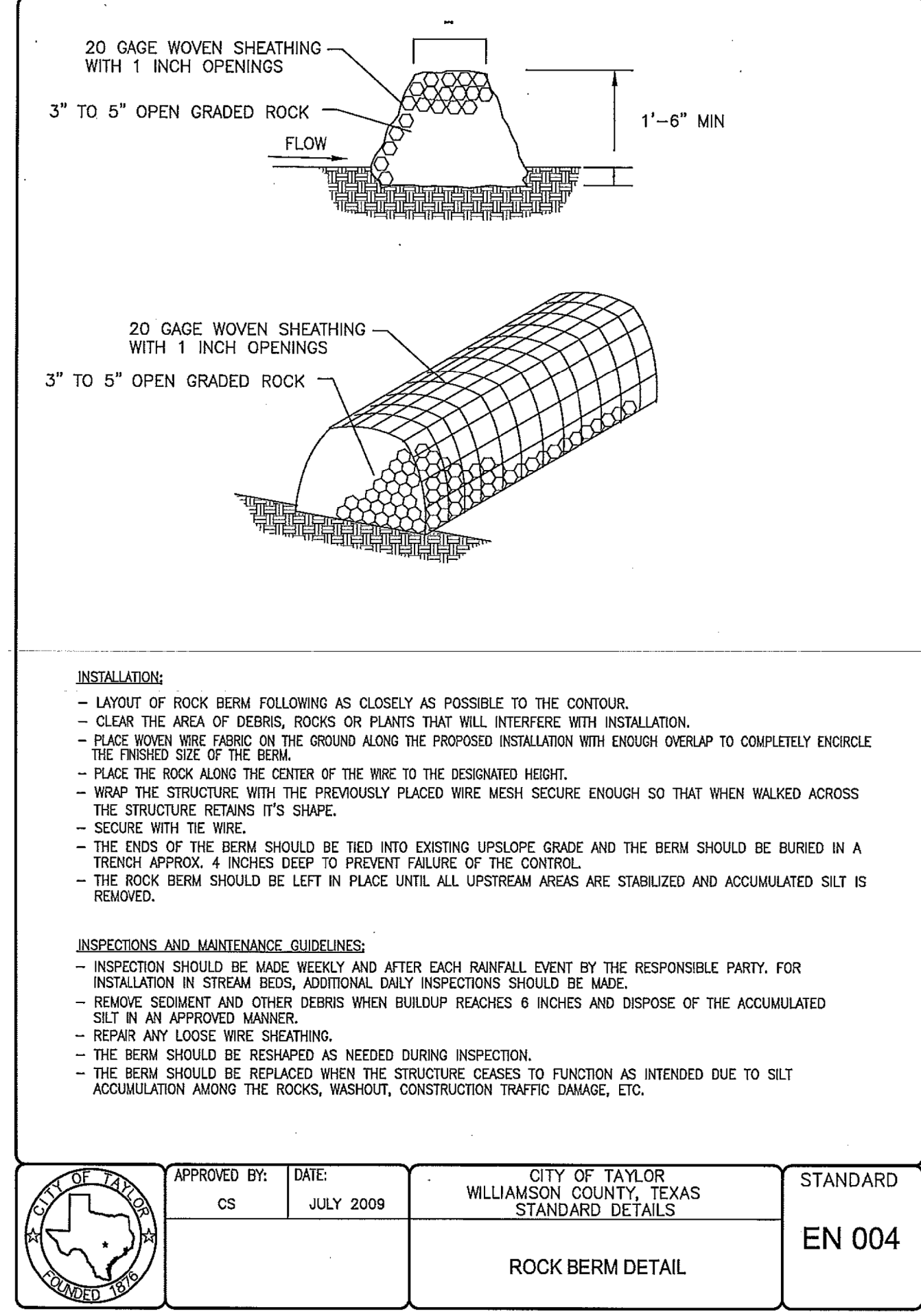
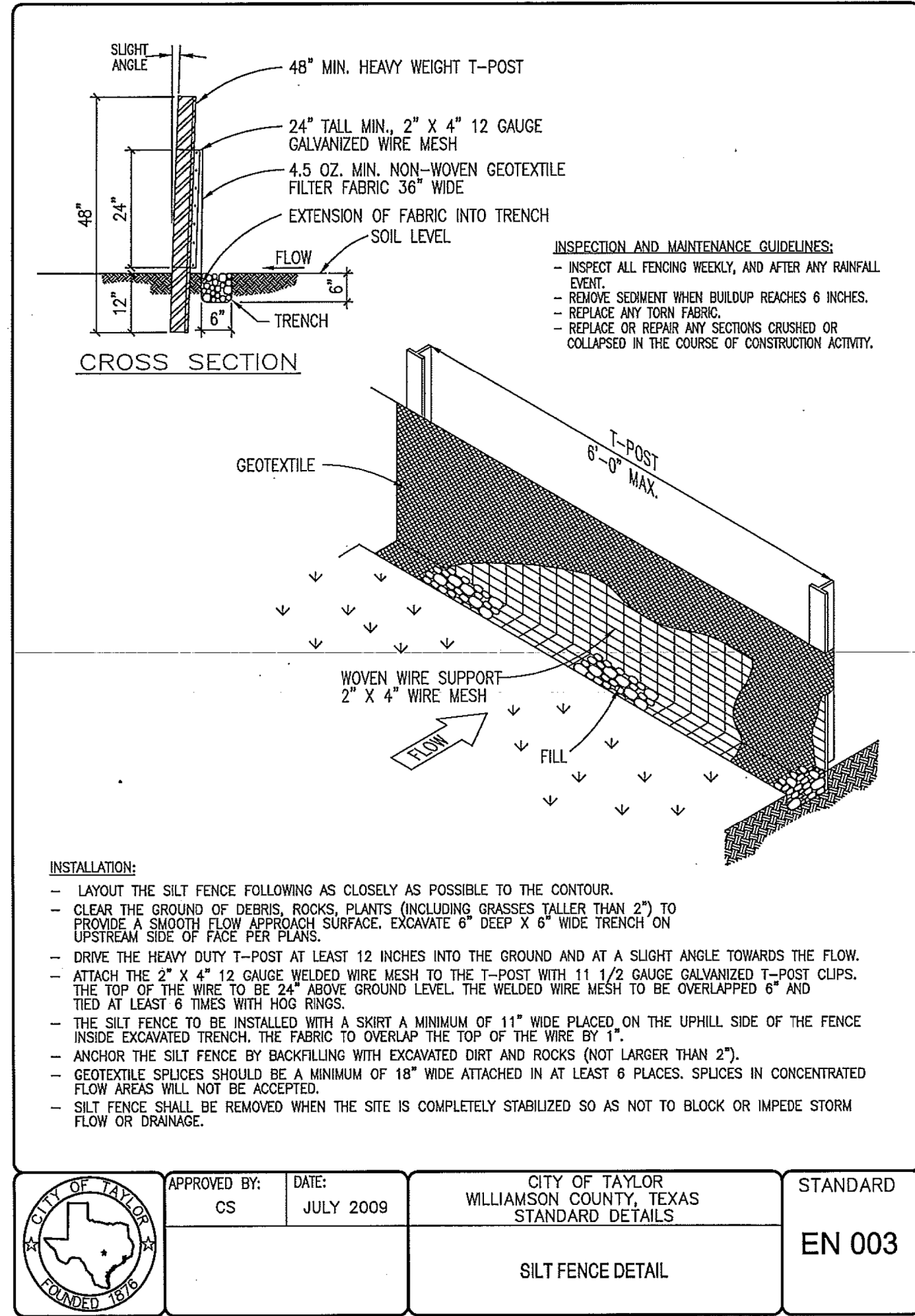
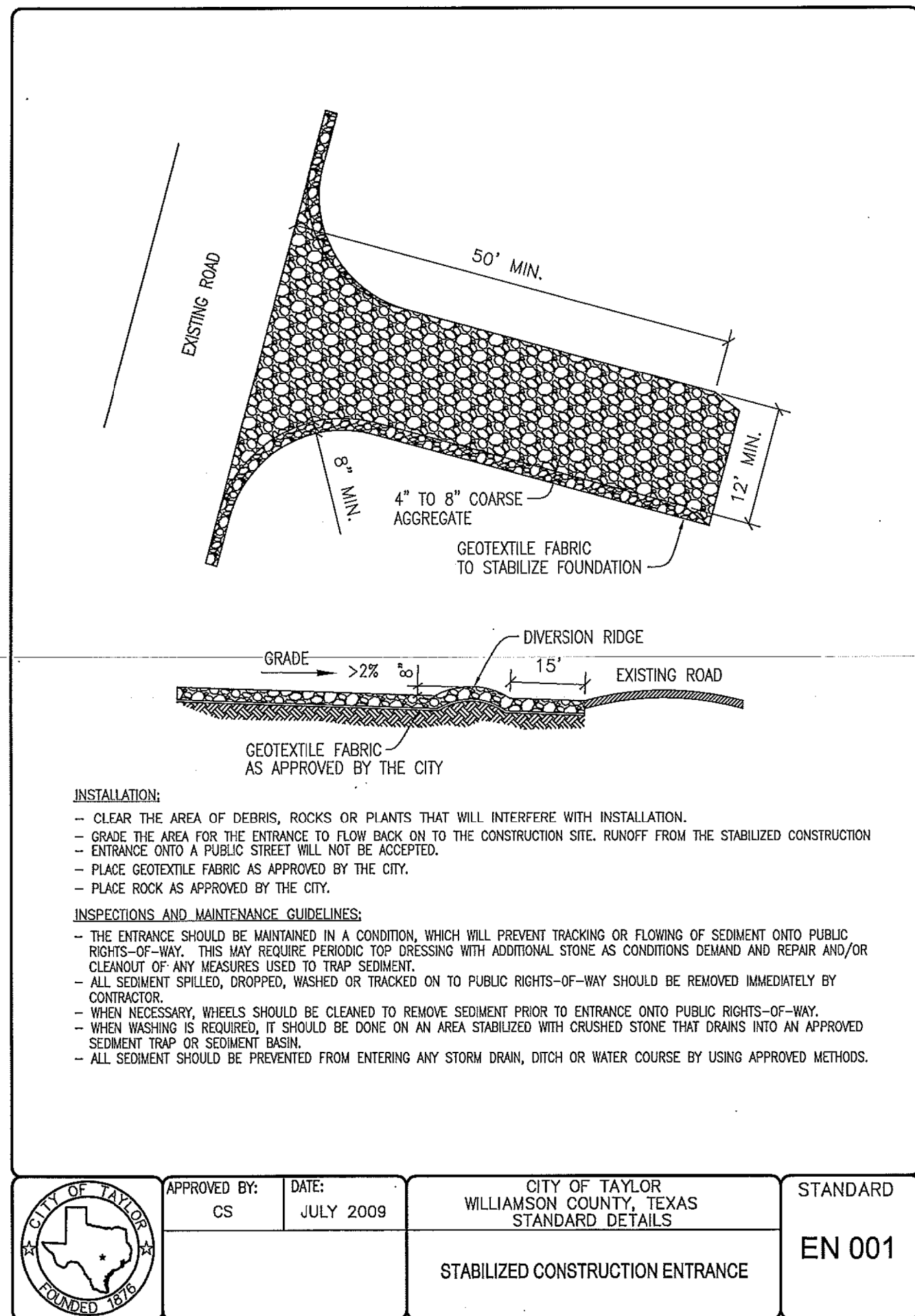
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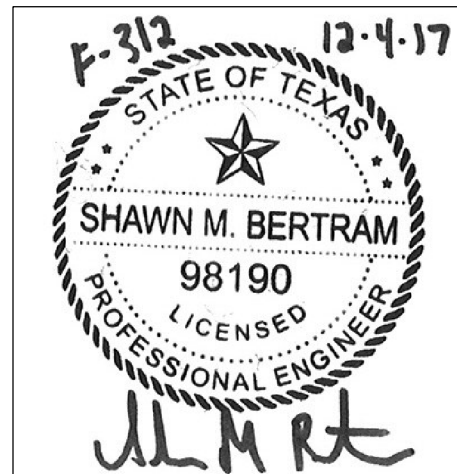
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TxDOT DETAIL  
PED-12A  
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Project No.: 32388  
Issued: 12/04/2017  
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STANDARD  
DETAILS



NOTE:  
1. 7-FOOT MIN. HEIGHT FROM GROUND TO BOTTOM OF LOWEST SIGN

|  |                             |                    |                                                                |          |
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|  | APPROVED BY:<br>CS          | DATE:<br>JULY 2009 | CITY OF TAYLOR<br>WILLIAMSON COUNTY, TEXAS<br>STANDARD DETAILS | STANDARD |
|  | STANDARD STREET SIGN DETAIL |                    |                                                                | PV 015   |

POST - 13 BWM TUBING (2.375" OUTSIDE DIAMETER)  
0.095" NORMAL WALL THICKNESS  
SEAMLESS OR ELECTRIC-RESISTANCE WELDED STEEL TUBING  
STEEL SHALL BE HSLAS G- 55 PER ASTM A1011 OR ASTM A1008  
OTHER STEEL MAY BE USED IF THEY MEET THE FOLLOWING:  
55,000 PSI MINIMUM YIELD STRENGTH  
70,000 PSI MINIMUM TENSILE STRENGTH  
18% MINIMUM ELONGATION IN 2"  
WALL THICKNESS (UNCOATED) SHALL BE WITHIN THE RANGE OF 0.083" TO 0.099"  
OUTSIDE DIAMETER (UNCOATED) SHALL BE WITHIN THE RANGE OF 2.369" TO 2.381"  
GALVANIZATION PER ASTM A123 OR A653 G210, FOR PRECOATED STEEL TUBING (ASTM A653)  
RECOAT TUBE OUTSIDE DIAMETER WELD SEAM BY METALLIZING WIRE PER ASTM B633

SOCKET  
TUBULAR SOCKET PREFABRICATED FROM 12 BWM SEAMLESS OR ELECTRIC-RESISTANCE WELDED STEEL TUBING  
2.875" OUTSIDE DIAMETER X 0.109" NORMAL WALL THICKNESS  
STEEL SHALL BE HSLAS G- 55 PER ASTM A1011 OR ASTM A1008  
OTHER STEEL MAY BE USED IF THEY MEET THE FOLLOWING:  
55,000 PSI MINIMUM YIELD STRENGTH  
70,000 PSI MINIMUM TENSILE STRENGTH  
20% MINIMUM ELONGATION IN 2"  
WALL THICKNESS (UNCOATED) SHALL BE WITHIN THE RANGE OF 0.097" TO 0.113"  
GALVANIZATION PER ASTM A123 AFTER FABRICATION, OR PER ASTM A653 G210, FOR PERCOATED STEEL TUBING (ASTM A653)  
RECOAT TUBE OUTSIDE DIAMETER WELD SEAM BY METALLIZING WITH ZINC WIRE PER ASTM B833.

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|  | WEDGE ANCHOR SYSTEM |                    |                                                                | PV 016   |

NOTE:  
WASTEWATER BEDDING SHALL BE CRUSHED STONE

|  |                                           |                    |                                                                |          |
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|  | TYPICAL TRENCH<br>WITH UNFINISHED SURFACE |                    |                                                                | UT 003   |

NOTES:  
1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.  
2. ANY CONCRETE PAVING SHALL BE SAW CUT 6" WIDER THAN UNDISTURBED SIDES OF EXCAVATION.  
3. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX.  
4. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND OF EQUAL THICKNESS, OR MINIMUM BASE THICKNESS OF 10 INCHES, WHICHEVER IS GREATER.  
5. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 8 INCHES OF BASE OR MATCH EXISTING, WHICHEVER IS GREATER.  
6. SURFACE PAVEMENT SHALL BE OF THE KIND AND THICKNESS AS EXISTING, OR MINIMUM 2 INCHES, WHICHEVER IS GREATER.  
7. ALL PRESSURE PIPE SHALL BE PROVIDED WITH THRUST BLOCKS WHERE CHANGES IN DIRECTION OCCUR, AT TEES, BENDS, CROSSES, CHANGES IN SLOPE, STOPS (DEAD ENDS) VALVES AND OR AS SHOWN, ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

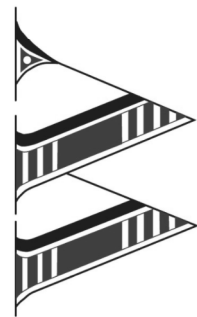
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|  | TYPICAL TRENCH<br>WITH PAVED SURFACE |                    |                                                                | UT 004   |

NOTES:  
1. ALL ASPHALT PAVEMENT SHALL BE REMOVED ALONG NEAT SAW CUT LINES.  
2. MAN-HOLE BOXOUT REQUIRED FOR ALL MANHOLES (STORM AND SANITARY) AND CLEANOUTS LOCATED IN THE STREET.  
3. 1/2" RADIUS EDGE ON CONCRETE  
4. #3 REBAR - 3000 PSI

|  |                                |                    |                                                                |          |
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|  | MANHOLE AND WATER VALVE BOXOUT |                    |                                                                | UT 008   |

NOTES:  
1. VALVE BOX SHALL BE AMERICAN FLOW CONTROL TRENCH ADAPTER OR APPROVED EQUAL HAVING AN ADJUSTABLE RANGE OF + OR - 6 INCHES FROM INSTALLED FINISH GRADE.  
2. ACCEPTABLE GATE VALVES ARE:  
A. AMERICAN FLOW CONTROL - SERIES 2500  
B. MUELLER - 2360 SERIES  
C. CLOW

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|  | TYPICAL VALVE SETTING |                    |                                                                | UT 009   |

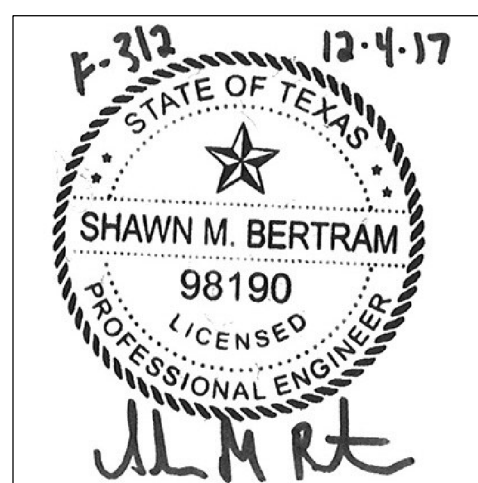


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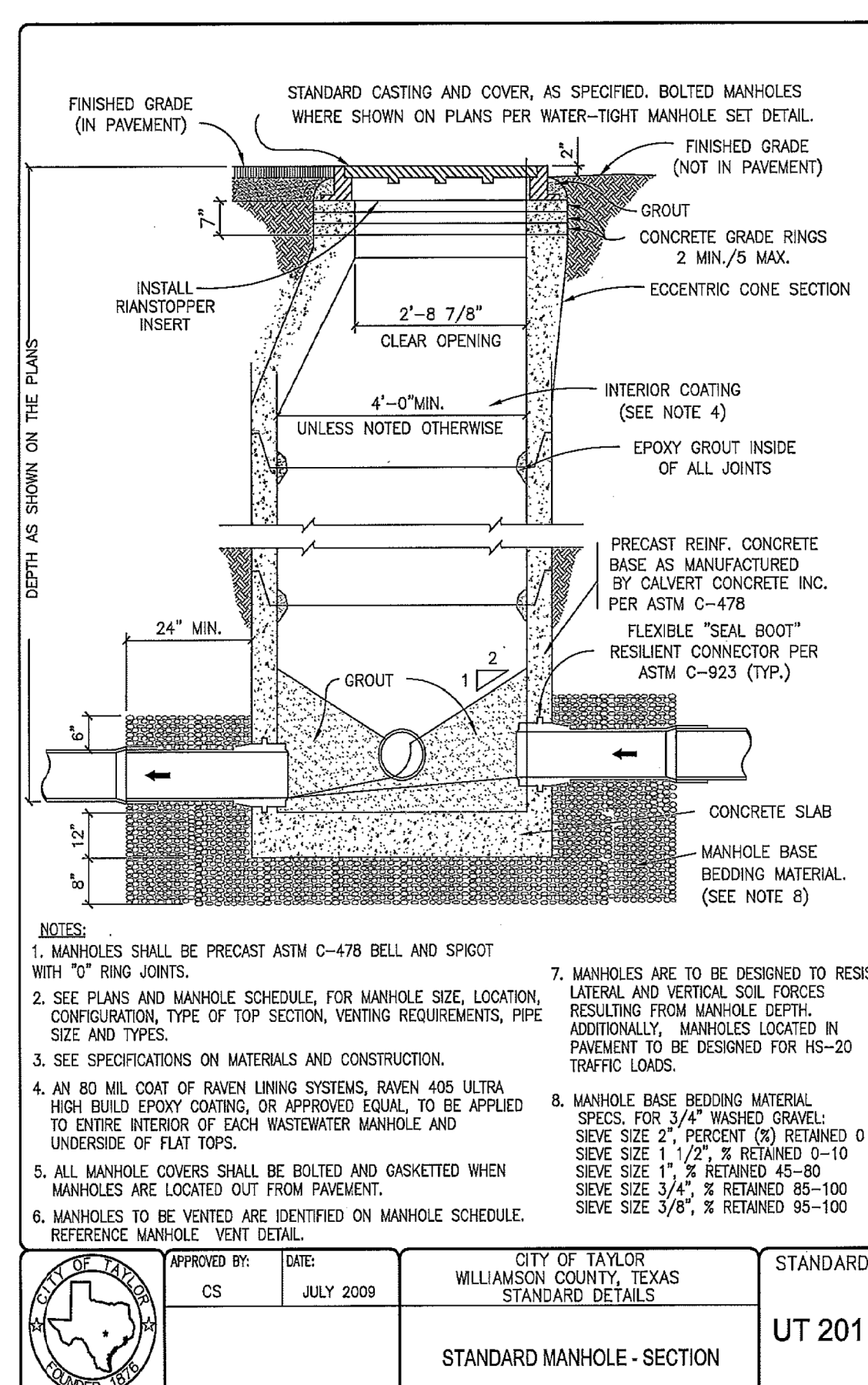
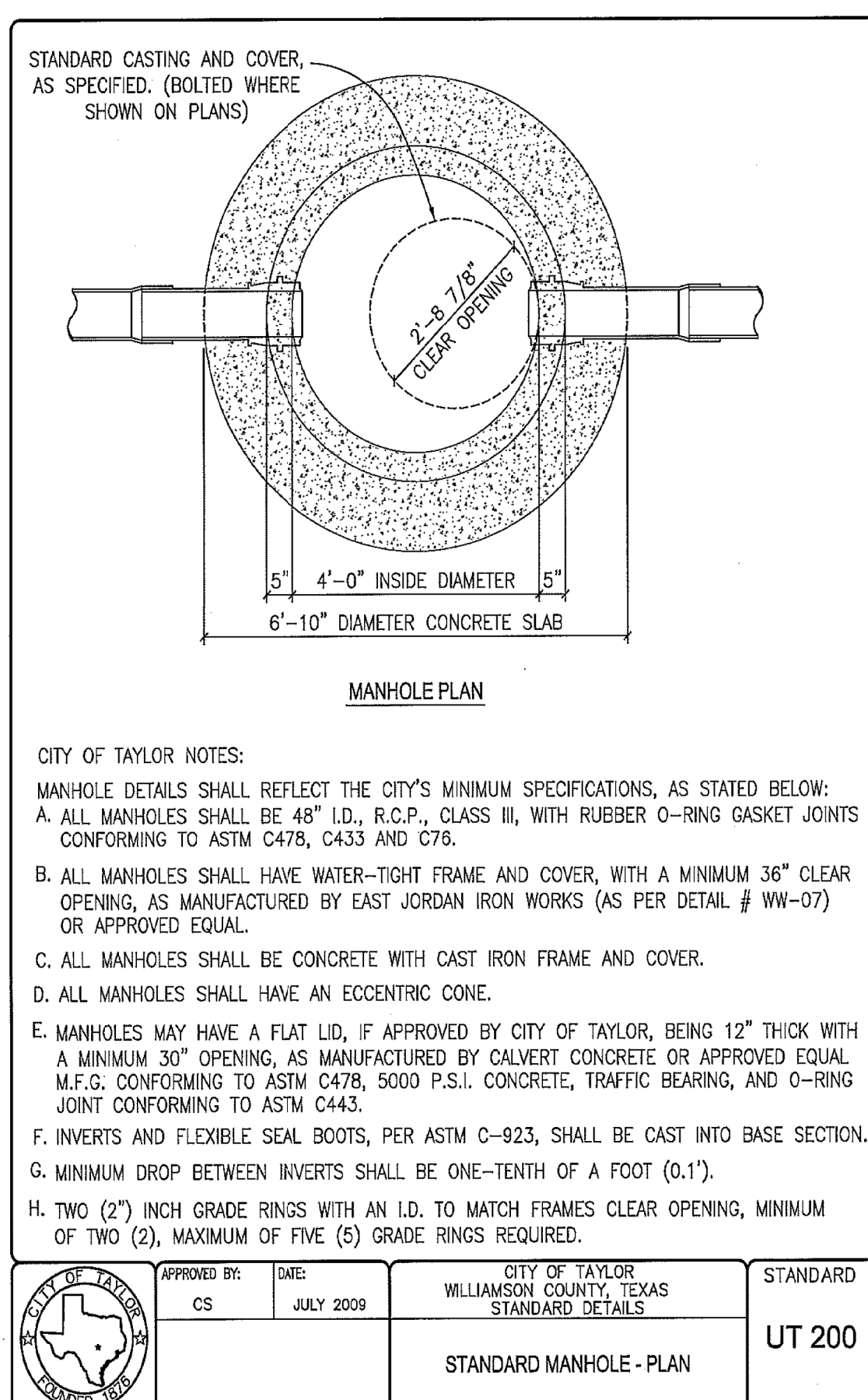
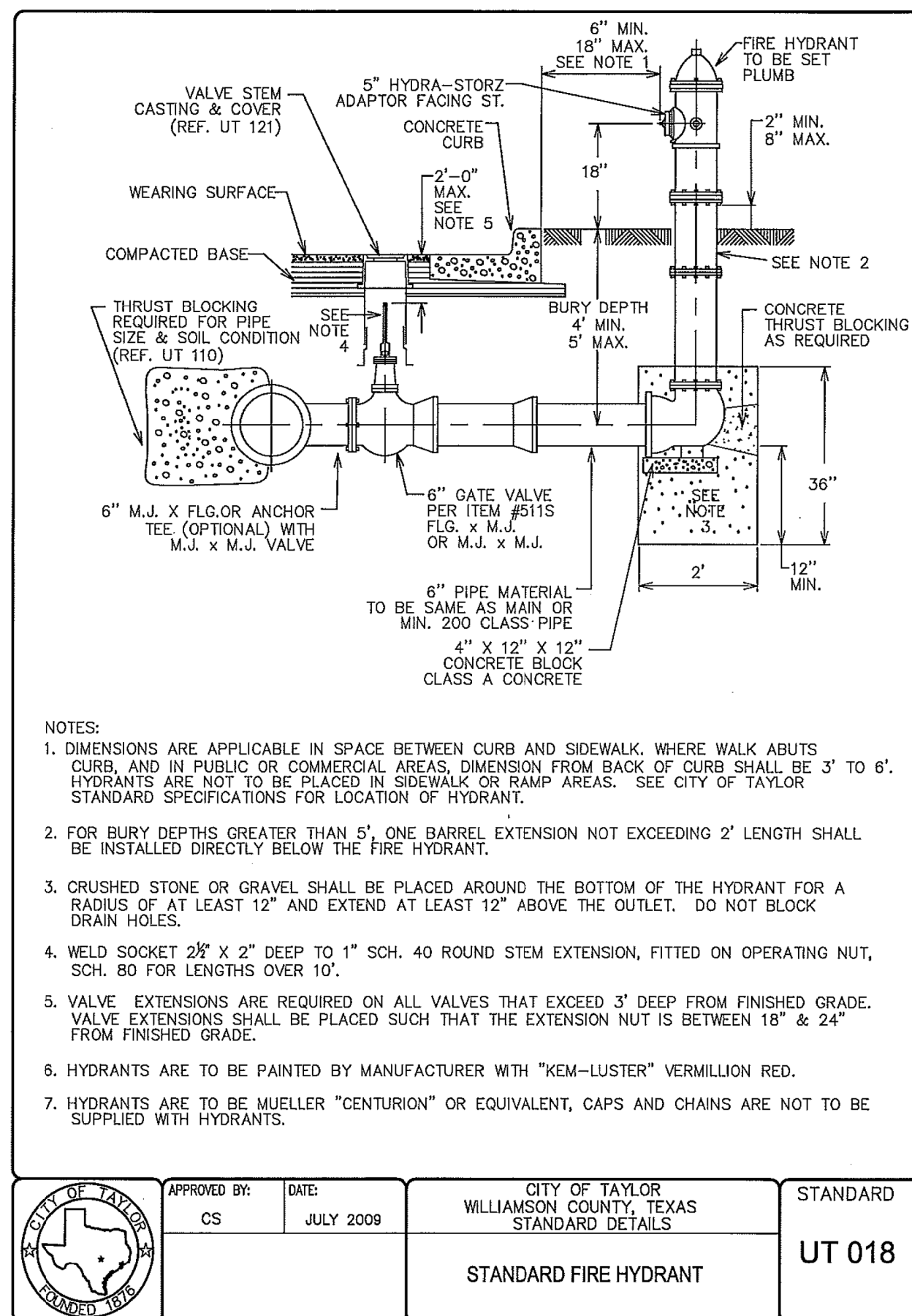
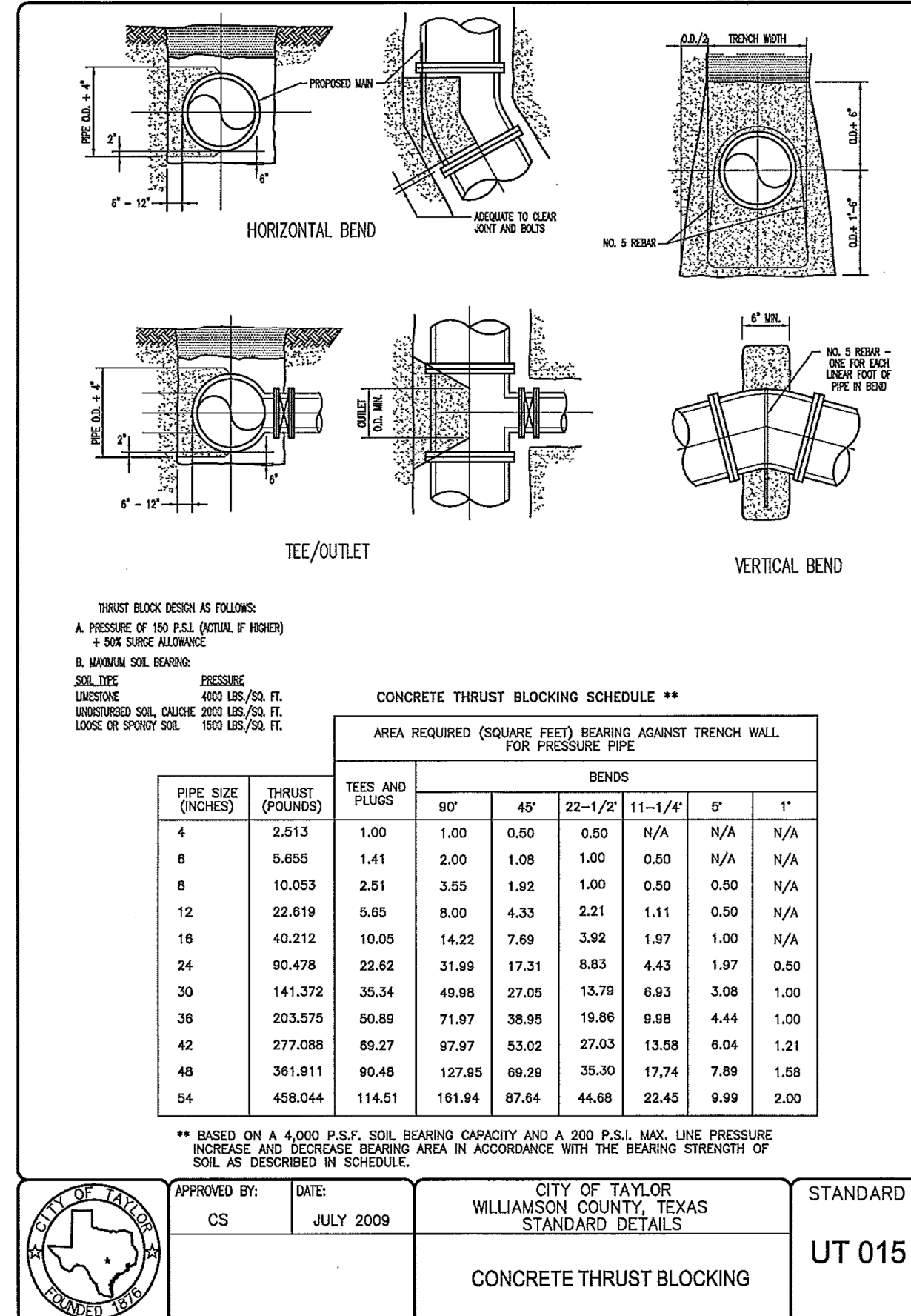
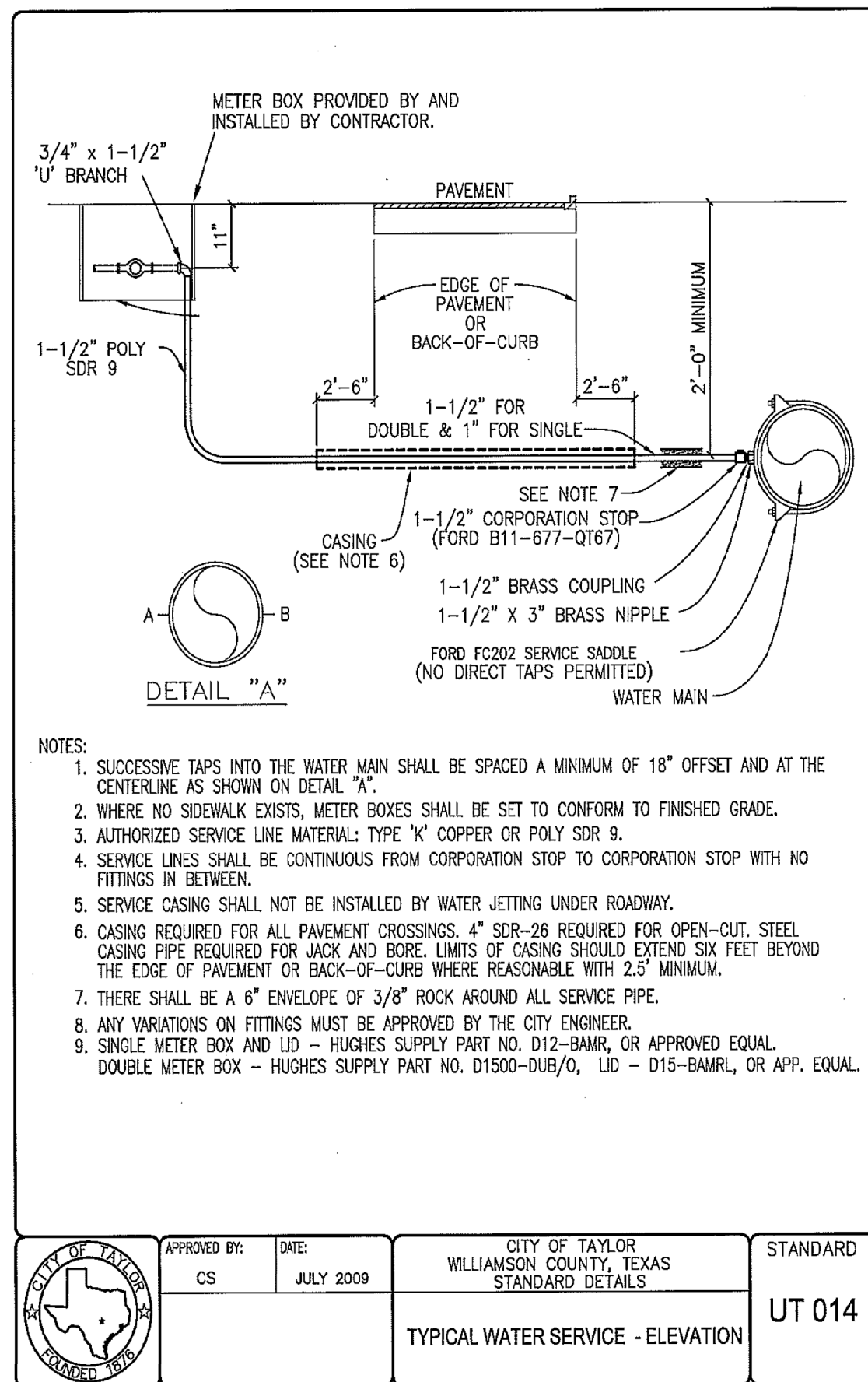
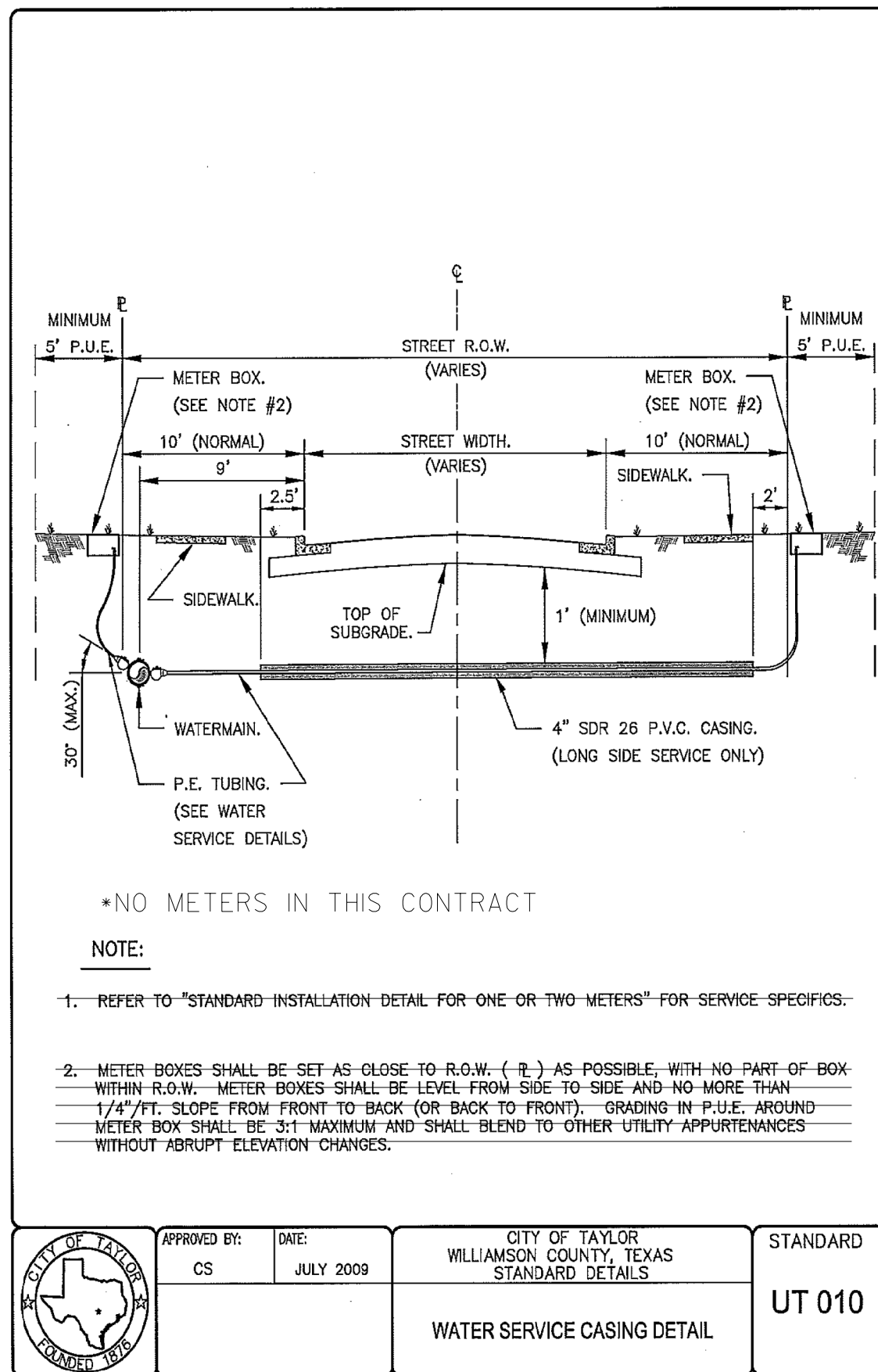
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STANDARD  
DETAILS

C9.15





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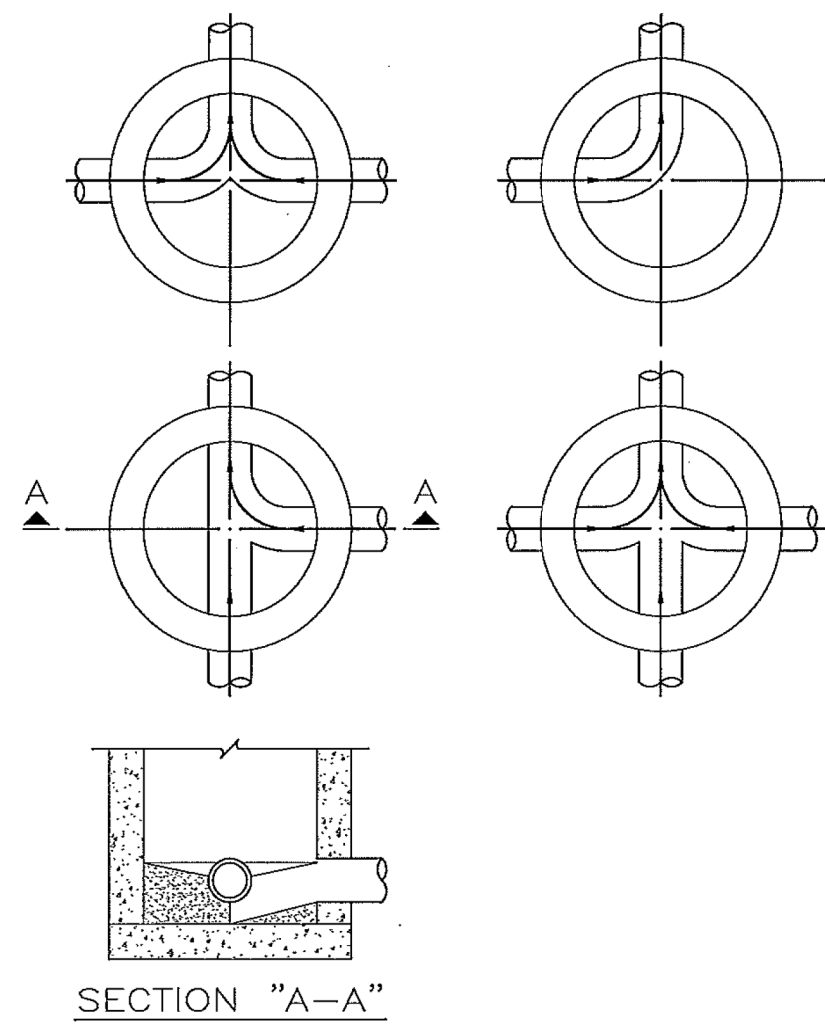
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STANDARD  
DETAILS

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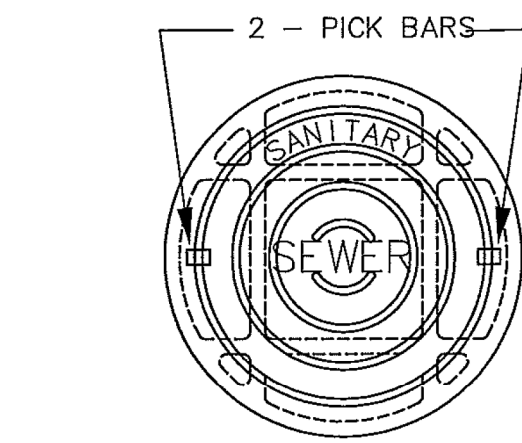
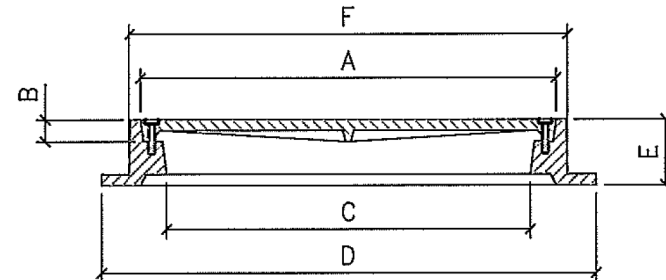




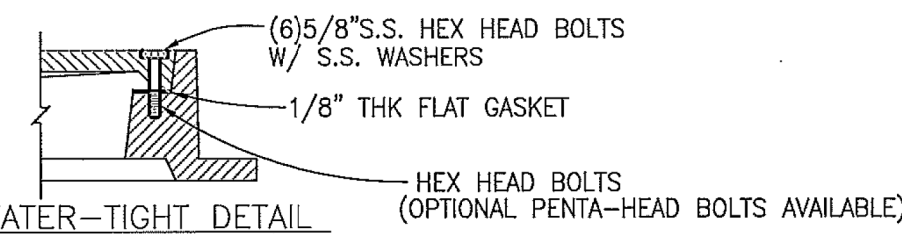
SECTION "A-A"

## NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
3. CHANNELS FOR FUTURE CONSTRUCTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND, AND COVERED WITH 1" OF MORTAR.
4. SLOPE MANHOLE ITSELF WITH A 1:2 SLOPE FROM MANHOLE WALL TO CHANNEL.
5. INVERT SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR 4" DEEP.

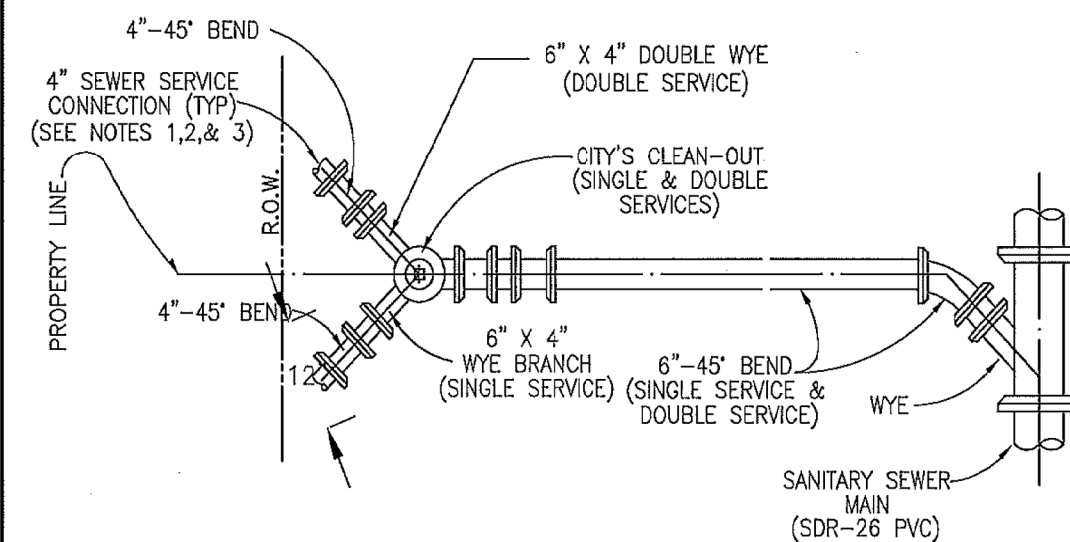
APPROVED BY: CS  
DATE: JULY 2009CITY OF TAYLOR  
WILLIAMSON COUNTY, TEXAS  
STANDARD DETAILSFLOW PATTERNS FOR  
INVERT CHANNELSSTANDARD  
UT 204VULCAN #VM-42 OR  
APPROVED EQUALNOTE:  
LID SHALL HAVE TWO (2)  
TYPE 4 PICK BAR

PLEASE SPECIFY TOP OR BOTTOM FLANGE WHEN ORDERING.  
FOR TOP FLANGE ORDER No. V-1800-5 (East Jordan Iron Works, inc.)  
FOR BOTTOM FLANGE ORDER No. V-1800-5 (East Jordan Iron Works, inc.)  
THE WATER-TIGHT MANHOLE SETS (V-2600-5) FEATURE SIX STAINLESS STEEL  
BOLTS IN COUNTERSUNK POCKETS AND A SEALING FLAT GASKET IN THE RING SET.  
BOLTING PADS REDUCE THE STANDARD CLEAR OPENING BY TWO TO THREE INCHES.



WATER-TIGHT DETAIL

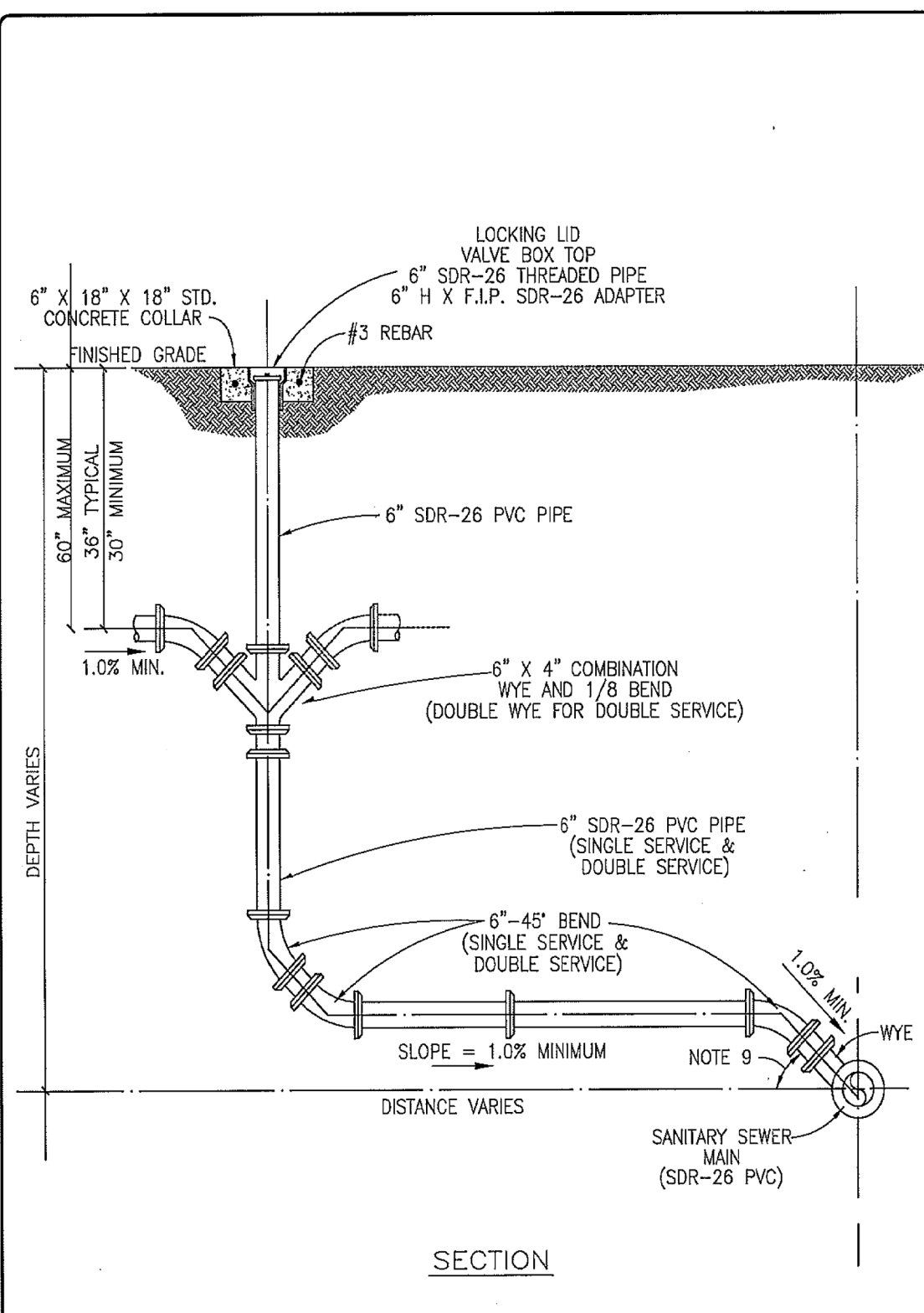
|          | DIMENSIONS |   |    |    |   |    | COVER    |         | RING     |         | SET     |
|----------|------------|---|----|----|---|----|----------|---------|----------|---------|---------|
|          | A          | B | C  | D  | E | F  | CASTING  | WEIGHT  | CASTING  | WEIGHT  | WEIGHT  |
| V-1800-5 | 38         | 2 | 36 | 46 | 6 | 40 | 41600523 | 365 LBS | 41600510 | 320 LBS | 685 LBS |
| V-1800-5 | 38         | 2 | 36 | 46 | 6 | 40 | 41600523 | 365 LBS | 41600510 | 320 LBS | 685 LBS |
| V-2600-5 | 38         | 2 | 36 | 46 | 6 | 40 | 42600523 | 365 LBS | 41600511 | 320 LBS | 685 LBS |

APPROVED BY: CS  
DATE: JULY 2009CITY OF TAYLOR  
WILLIAMSON COUNTY, TEXAS  
STANDARD DETAILSSTANDARD WASTEWATER MANHOLE  
SETSTANDARD  
UT 205

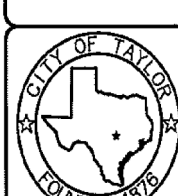
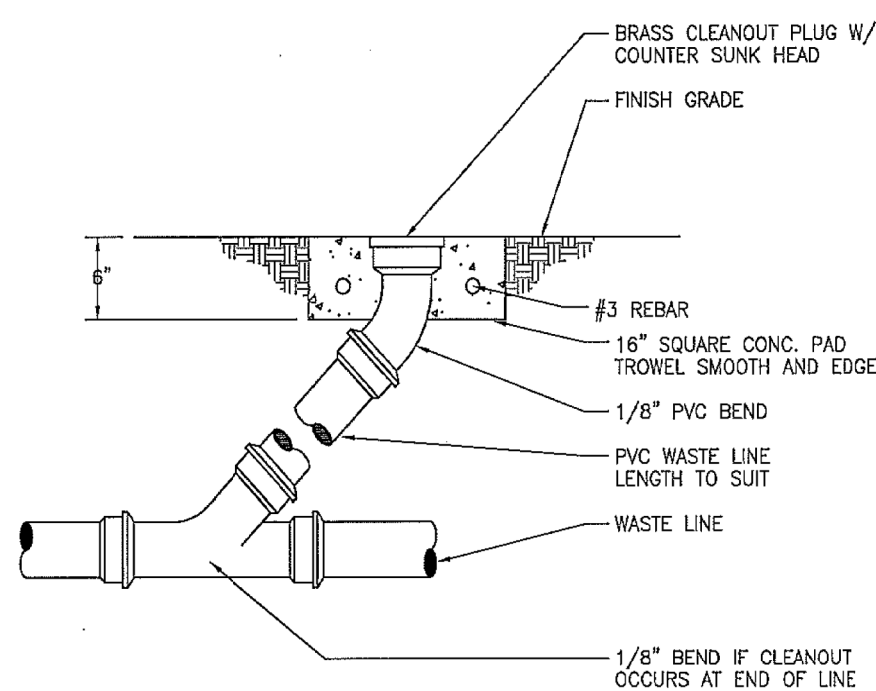
PLAN

## NOTES:

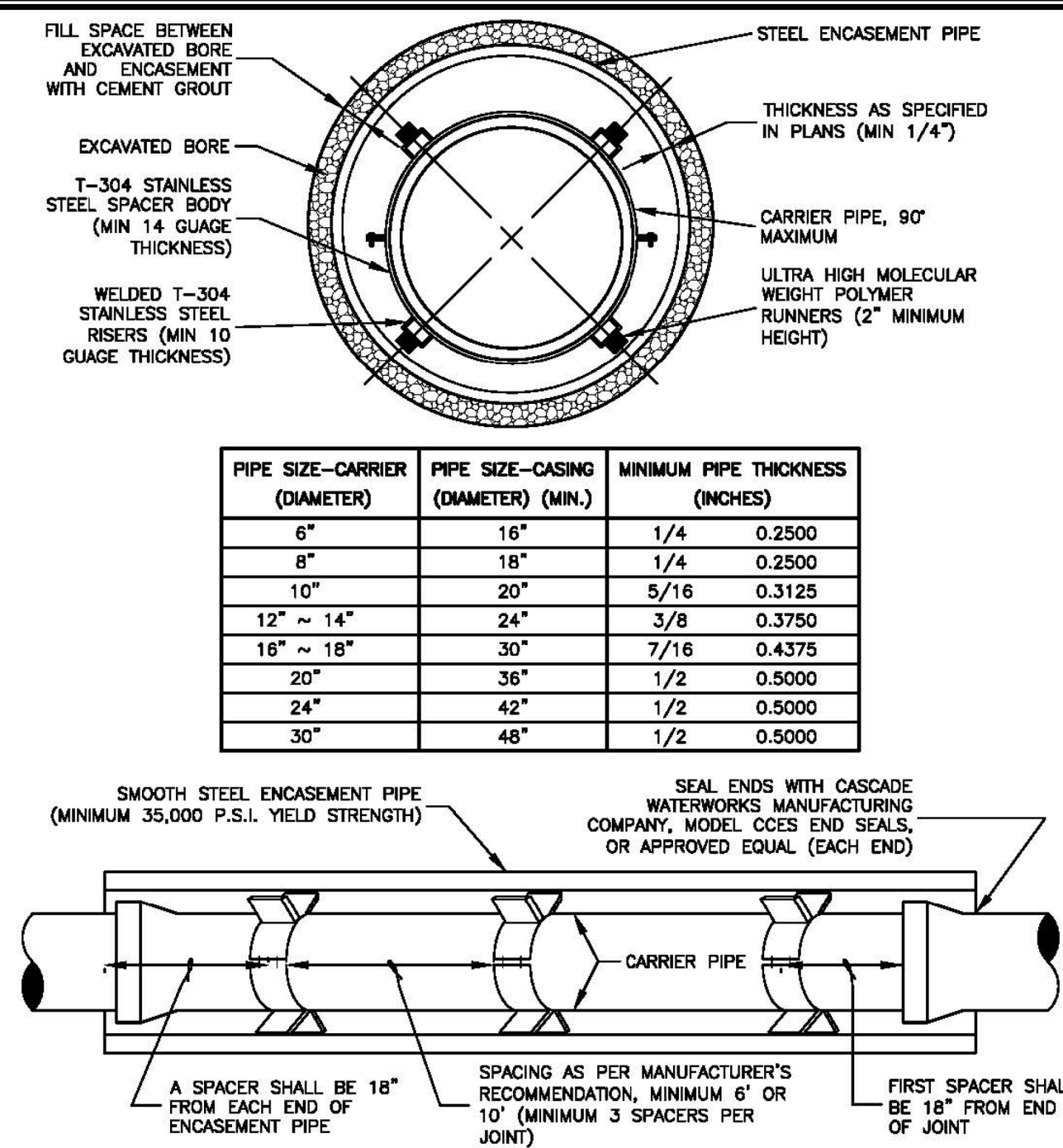
1. FOR INSTALLATION WITHIN UTILITY EASEMENTS, SERVICE CONNECTION RISERS MAY BE LOCATED INSIDE THE PROPERTY LINE.
2. THE CLEAN-OUT SHALL BE EXTENDED 12" ABOVE FINISH GRADE.
3. EACH SERVICE CONNECTION SHALL BE PLUGGED WATER TIGHT WITH AN APPROVED CAP OR PLUG.
4. CONNECT YARD LINE TO SERVICE LINE WITH RIGID, SOLVENT-WELDED PVC TO PVC ADAPTER.
5. SOLIDLY TAMP BACKFILL AT LEAST ONE FOOT (1'-0") ABOVE TOP OF PIPE SERVICES UNDER PAVED AREAS SHALL BE BACKFILLED TO THE SAME SPECIFICATIONS AS SHOWN ON PAVEMENT REPLACEMENT DETAIL.
6. CONTRACTOR SHALL MARK ON A CLEAN SET OF PLANS THE FINAL STATIONING OR DISTANCE AND DIRECTION FROM MANHOLE TO EACH SERVICE LATERAL AND GIVE TO ENGINEER FOR RECORD DRAWING PURPOSES.
7. ANY DEVIATION FROM THESE METHODS MUST BE APPROVED BY THE CITY ENGINEERING DEPARTMENT.
8. SERVICE LINE MATERIAL SHALL BE P.V.C., SDR-26.
9. SEWER SERVICE SLOPE TO BE 45° OFF CENTERLINE OF MAIN.

APPROVED BY: CS  
DATE: JULY 2009CITY OF TAYLOR  
WILLIAMSON COUNTY, TEXAS  
STANDARD DETAILSSEWER SERVICE CONNECTION  
PLAN VIEWSTANDARD  
UT 206

SECTION

APPROVED BY: CS  
DATE: JULY 2009CITY OF TAYLOR  
WILLIAMSON COUNTY, TEXAS  
STANDARD DETAILSSEWER SERVICE CONNECTIONS  
SECTION VIEWSTANDARD  
UT 207APPROVED BY: CS  
DATE: JULY 2009CITY OF TAYLOR  
WILLIAMSON COUNTY, TEXAS  
STANDARD DETAILS

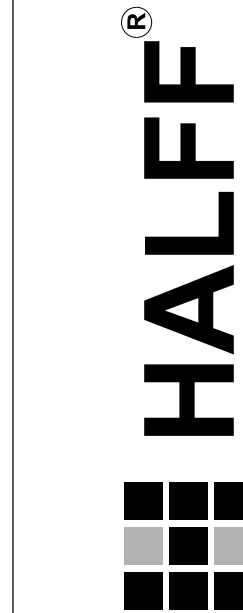
SANITARY SEWER CLEANOUT

STANDARD  
UT 208

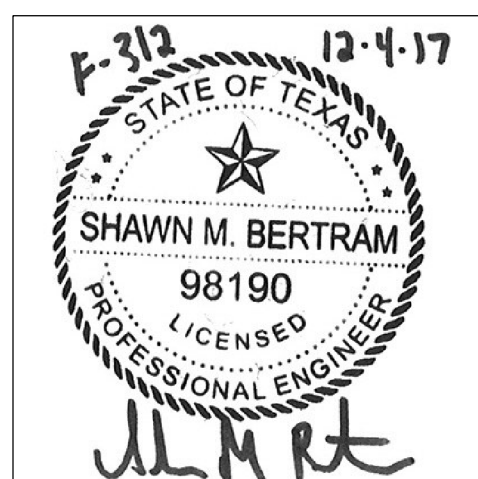
## NOTES:

1. CASING SPACER CONFIGURATION AND SPACING SHALL BE AS SHOWN ON MANUFACTURER'S DRAWINGS FOR SPECIFIC WORK; THESE MUST BE ACCEPTABLE TO THE CITY OF ROUND ROCK.
2. CASING SPACER SHALL BE AS MANUFACTURED BY CASCADE WATERWORKS MANUFACTURING COMPANY, MODEL CCS, OR APPROVED EQUAL.

PIPE ENCASEMENT DETAIL



| Revision No. | Date | Description |
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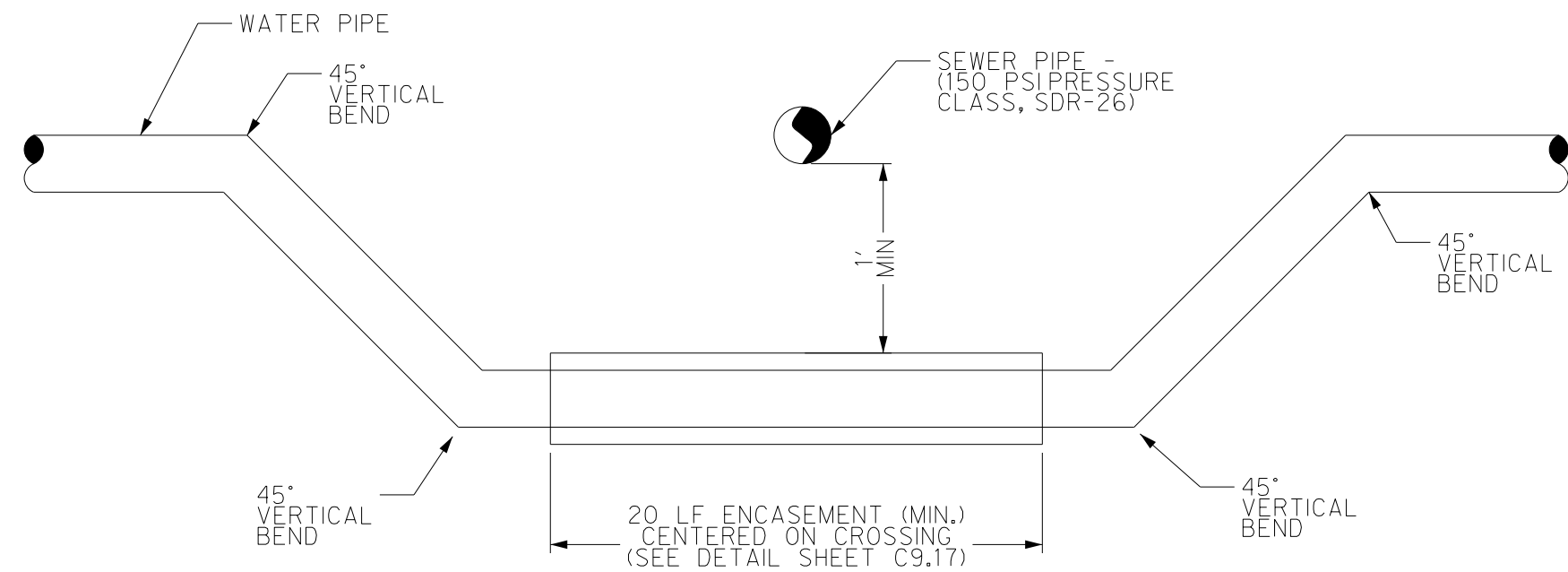
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Project No.: 32388  
Issued: 12/04/2017  
Drawn By: JN  
Checked By: SB

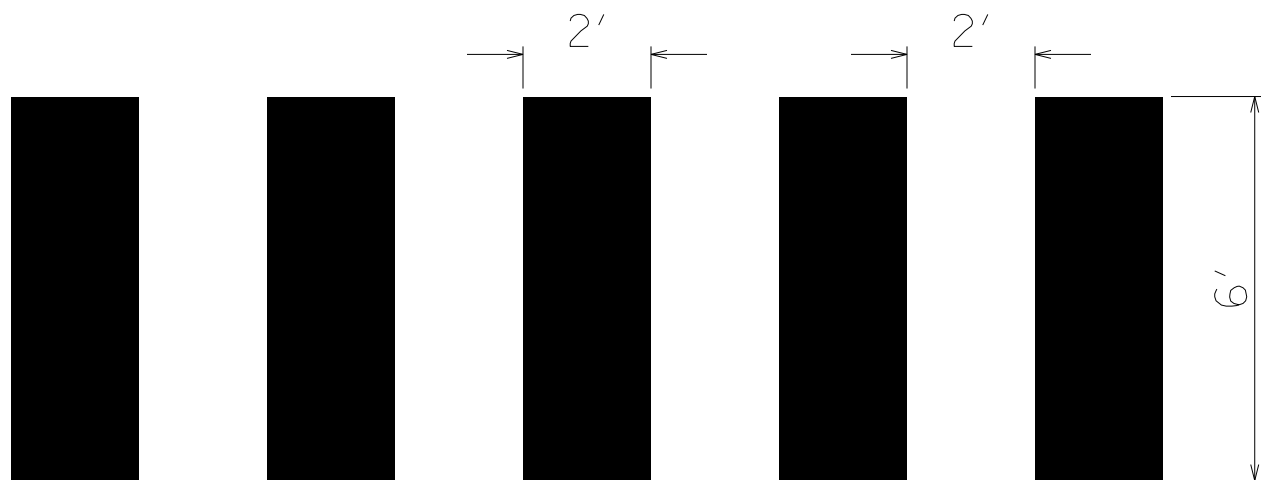
STANDARD  
DETAILS

C9.17

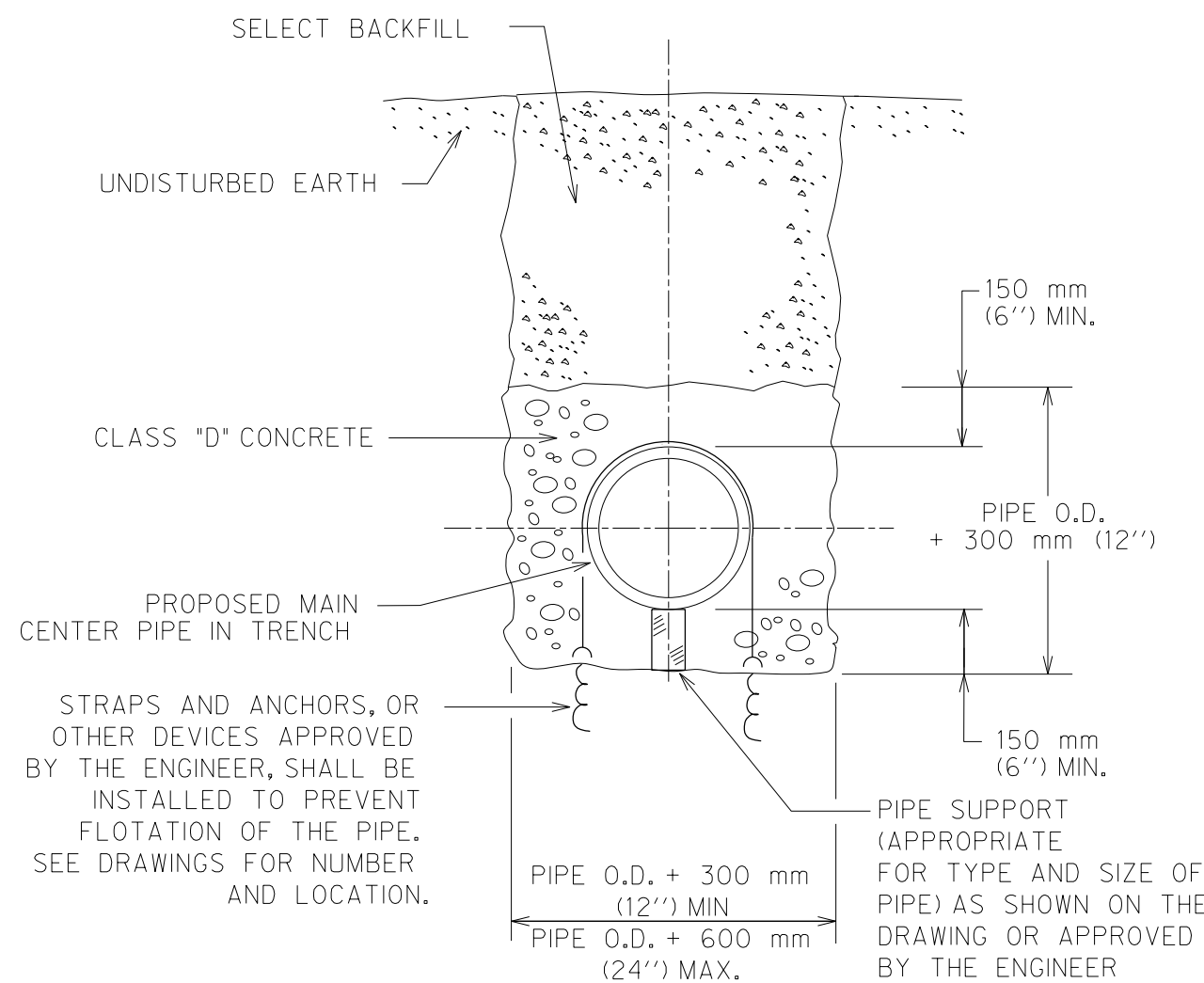




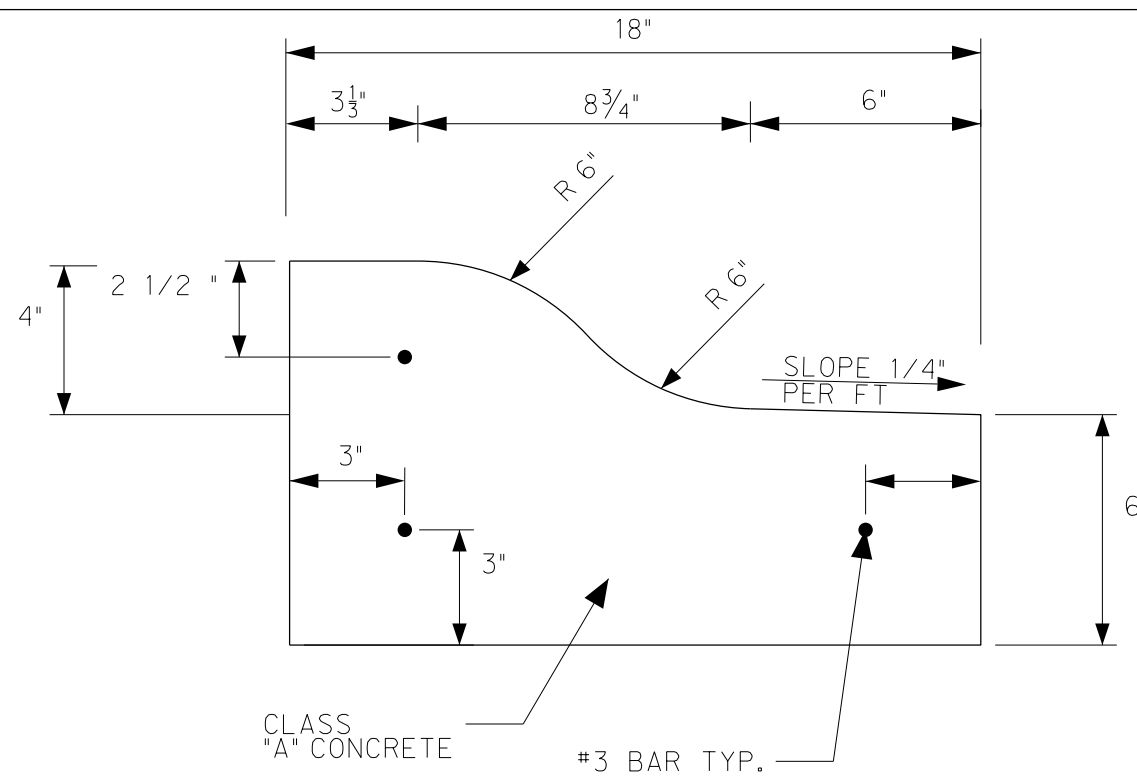
WATER - SEWER  
CROSSING DETAIL  
N.T.S.



CROSSWALK PAINTING DETAIL  
N.T.S.



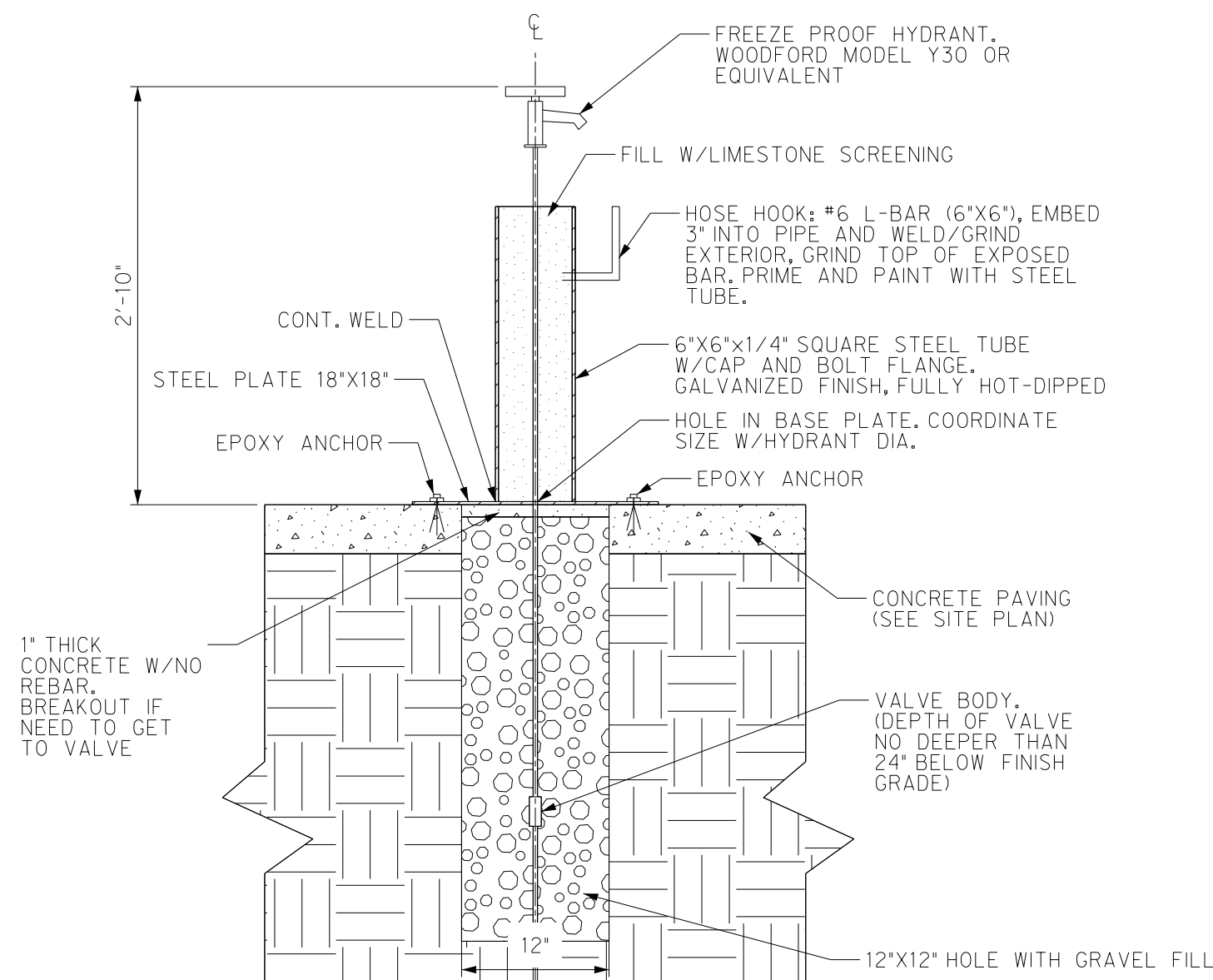
CONCRETE ENCASEMENT DETAIL  
N.T.S.



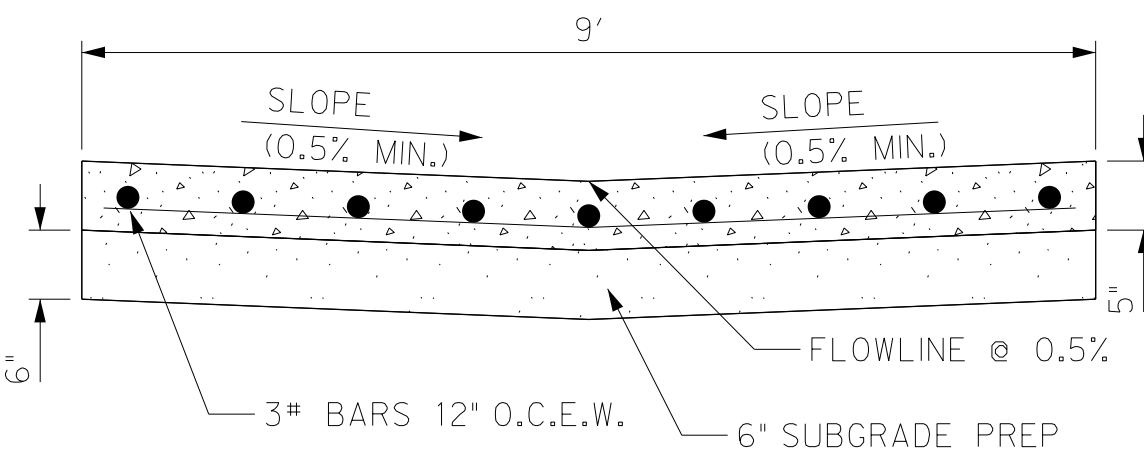
NOTES:

- 1.) ALL WORK & MATERIALS SHALL CONFORM TO ASTM A615, A615M, C309 AND D1752. BROOM FINISH EXPOSED SURFACE.
- 2.) CONTRACTION JOINT SPACING 10' MAX.
- 3.) EXPANSION JOINTS PER STD. ASTM D-1752

4-IN ROLL CURB DETAIL  
N.T.S.



YARD HYDRANT DETAIL  
N.T.S.



NOTES:

- 1.) CLASS A CONCRETE
- 2.) PROVIDE TOOLED JOINTS @ 10' WITH DOWELS AND EXPANSION JOINTS @ 40' MAX.

CONCRETE PILOT CHANNEL DETAIL  
N.T.S.

ONE COMPANY. ONE WORLD. ONE SOURCE.™

**OPW**  
FUELING CONTAINMENT SYSTEMS

## Specification Sheet

**Product: OPW 269 Sanitary Tank Hatch**

### OPW 269 Sanitary Tank Hatch

The OPW 269 Sanitary Tank Hatch threads onto the fill pipe of an underground sanitary waste disposal tank. The 269 is foot-operated and quick-opening/closing for clean emptying of sanitary waste from RV's, campers and travel trailers.

The non-recessed design provides straight-through flow to eliminate entrapment of waste materials.

**Body: Coated Ductile Iron**  
**Cap: Cast Zinc**



### Ordering Specifications

| Part Number | in. | Mm  | lbs.  | kg   |
|-------------|-----|-----|-------|------|
| 269-0085    | 4   | 102 | 10.92 | 4.91 |

### Replacement Parts

| Part Number | Description |
|-------------|-------------|
| D00800B     | Cap         |
| H05783DI    | Treadles    |
| H05784M     | Pin         |

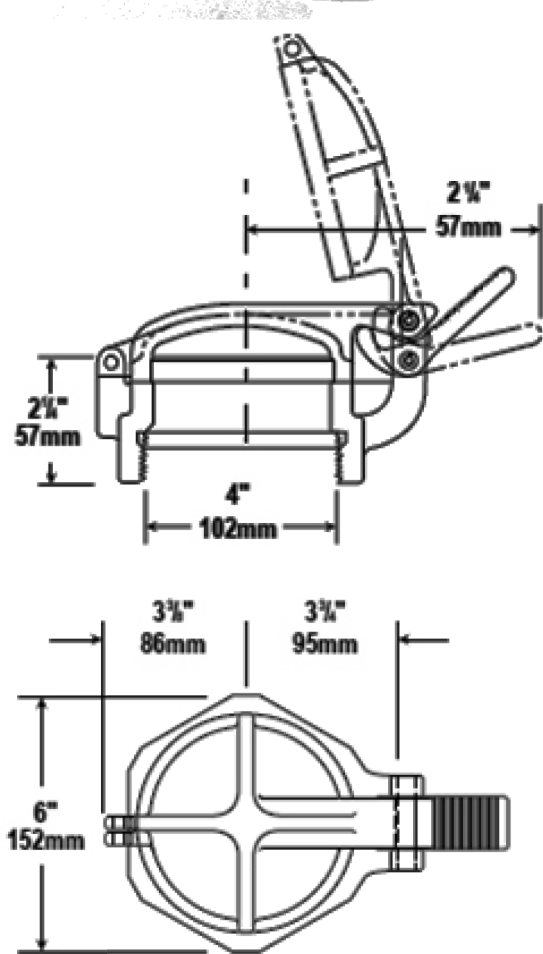
**OPW Fueling Containment Systems**  
3250 US Highway 70 Business W.  
Smithfield, NC 27577  
Customer Service: 1-800-422-2525  
www.opwglobal.com

Publication: 269-SPEC  
Issue Date: 04/03/12

NOTE:

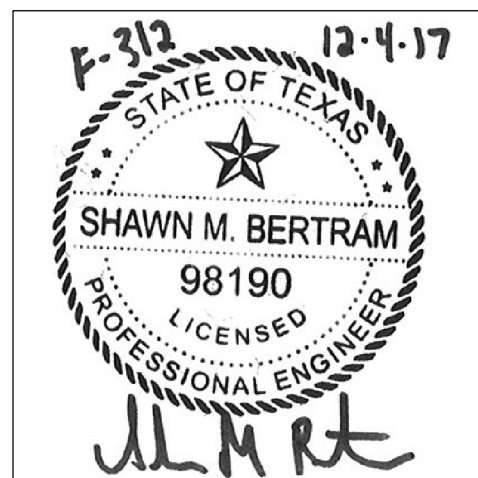
ABOVE PRODUCT OR APPROVED EQUAL

DUMPSTATION LOCKING LID DETAIL  
N.T.S.



**HALFF**  
9500 AMBERGLEN BLVD.  
BLDG F, SUITE 125  
AUSTIN, TEXAS 78729  
TEL (512) 262-8141  
FAX (512) 262-8141  
TBPE FIRM#F-312

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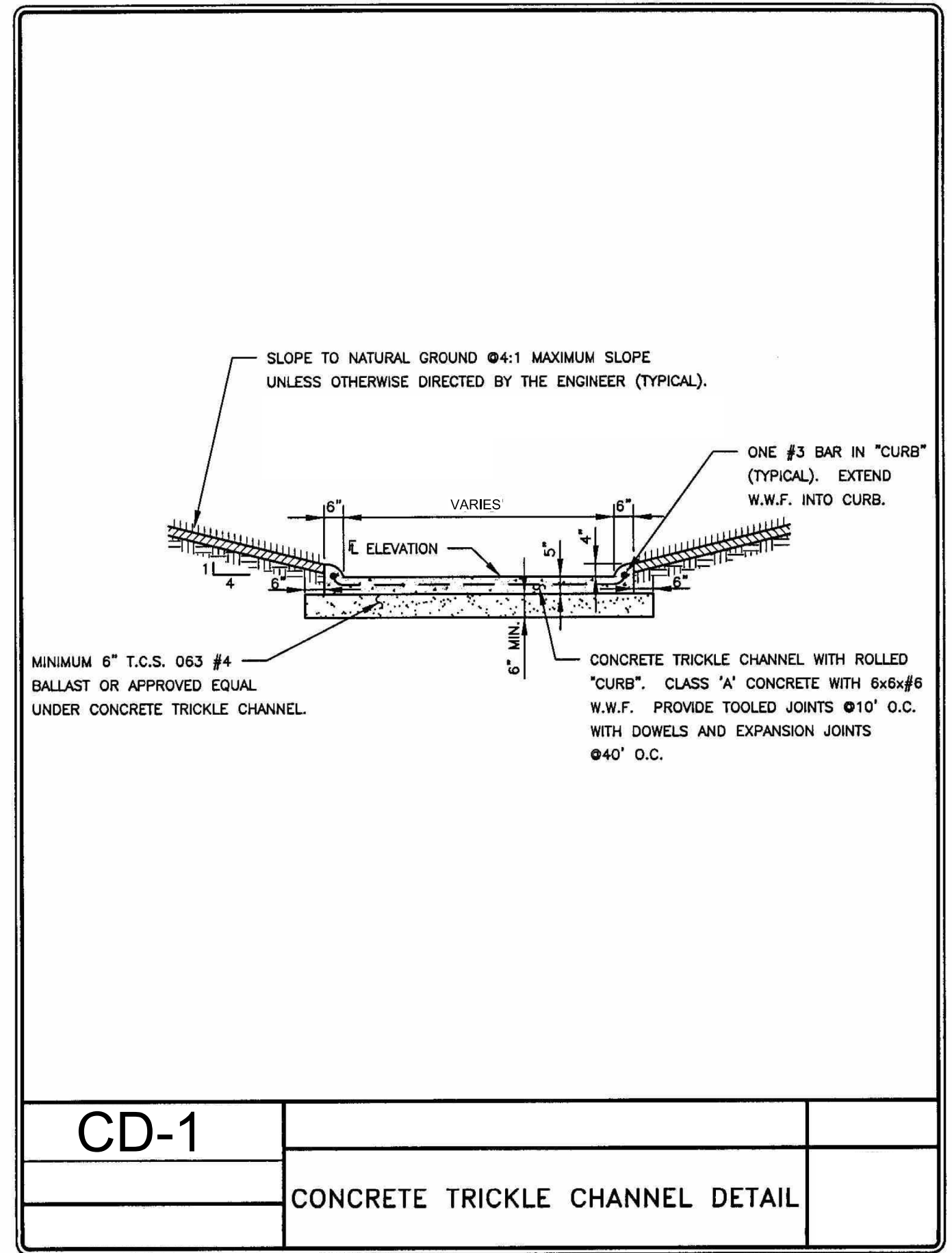
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| Issued: 12/04/2017 |
| Drawn By: JN       |
| Checked By: SB     |

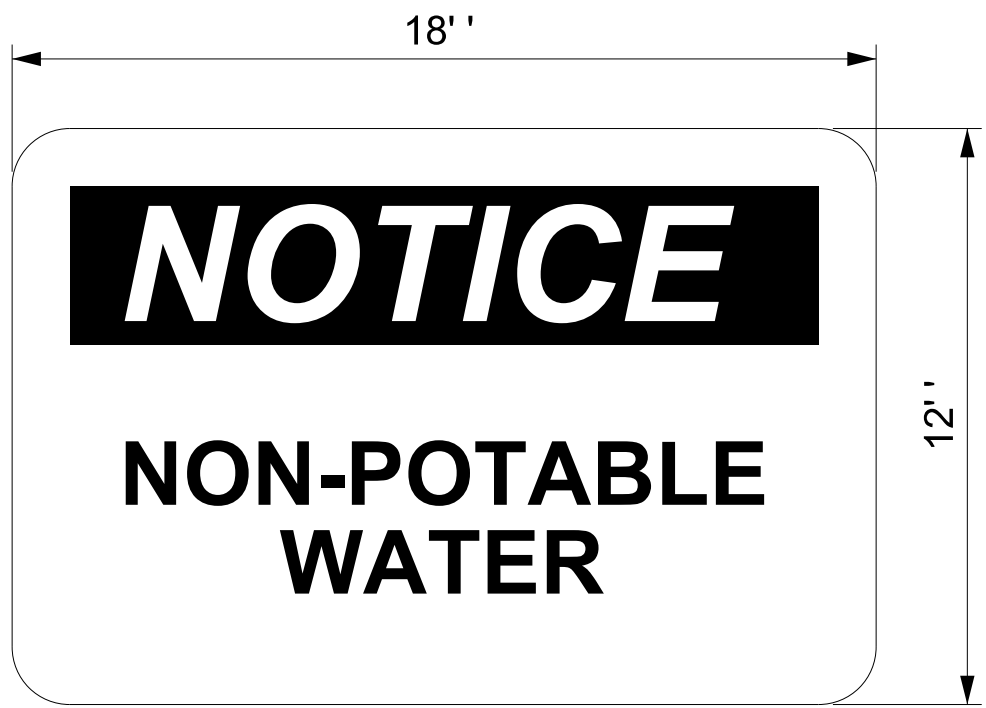
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C9.18







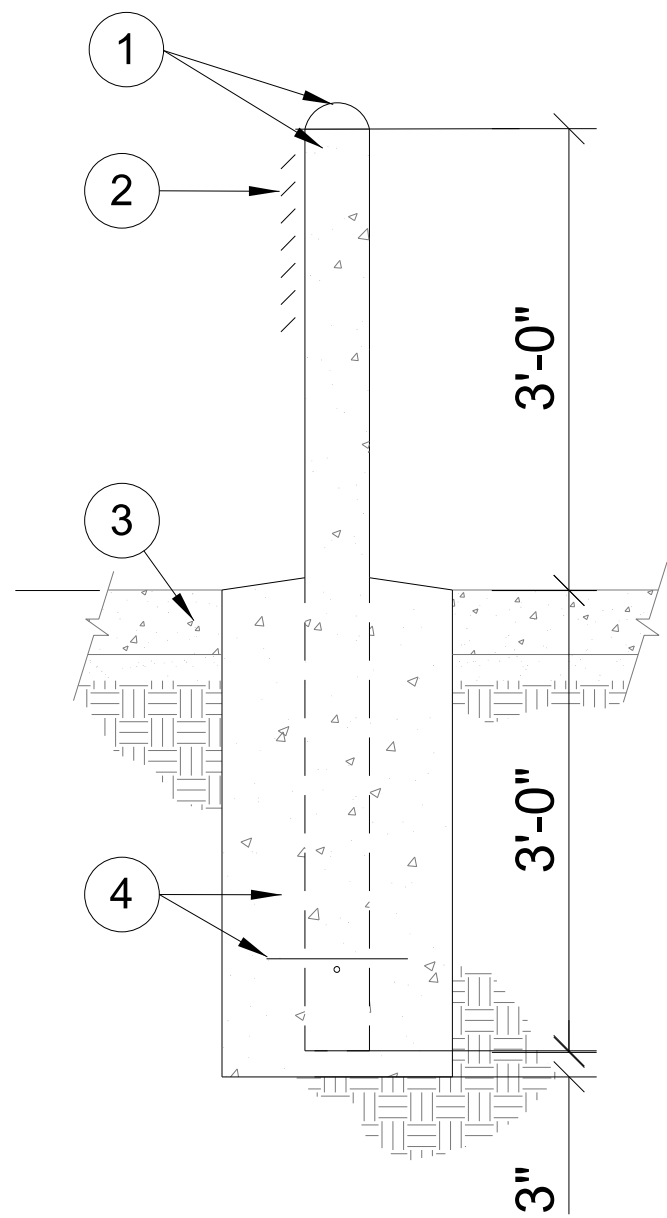


- NOTES:
- 1.) "NOTICE" SHALL BE WHITE BLOCK TEXT 3' ' MINIMUM HEIGHT ON BLUE REFLECTIVE BACKGROUND
  - 2.) "NON-POTABLE WATER" SHALL BE BLOCK TEXT 1' ' MINIMUM HEIGHT BLACK IN COLOR
  - 3.) SIGN BACKGROUND TO BE WHITE IN COLOR
  - 4.) SIGN TO BE MOUNTED PER BOLLARD DETAIL
  - 5.) SIGN MATERIAL SHALL BE ENGINEERING GRADE (TYPE I) REFLECTIVE ALUMINUM OR APPROVED EQUAL



- NOTES:
- 1.) "DUMP STATION TRAFFIC ONLY" SHALL BE BLOCK TEXT 2' ' MINIMUM HEIGHT WHITE IN COLOR
  - 2.) SIGN BACKGROUND TO BE BROWN IN COLOR
  - 3.) SIGN TO BE MOUNTED WITH PROFESSIONAL HARDWARE (NO ALL-THREAD ALLOWED)
  - 4.) SIGN MATERIAL SHALL BE ENGINEERING GRADE (TYPE I) REFLECTIVE ALUMINUM OR APPROVED EQUAL

DUMPSTATION SIGNAGE  
N.T.S.

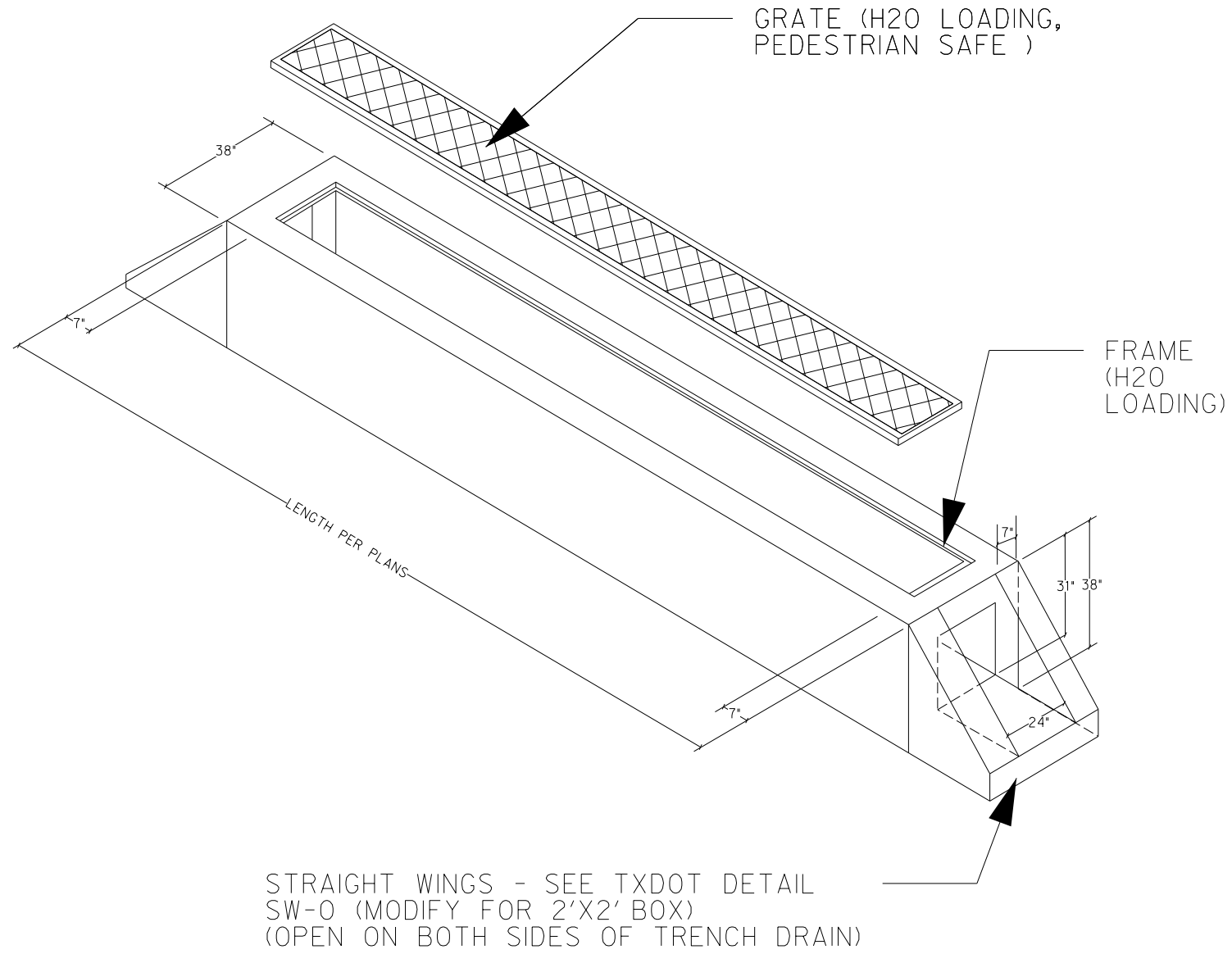


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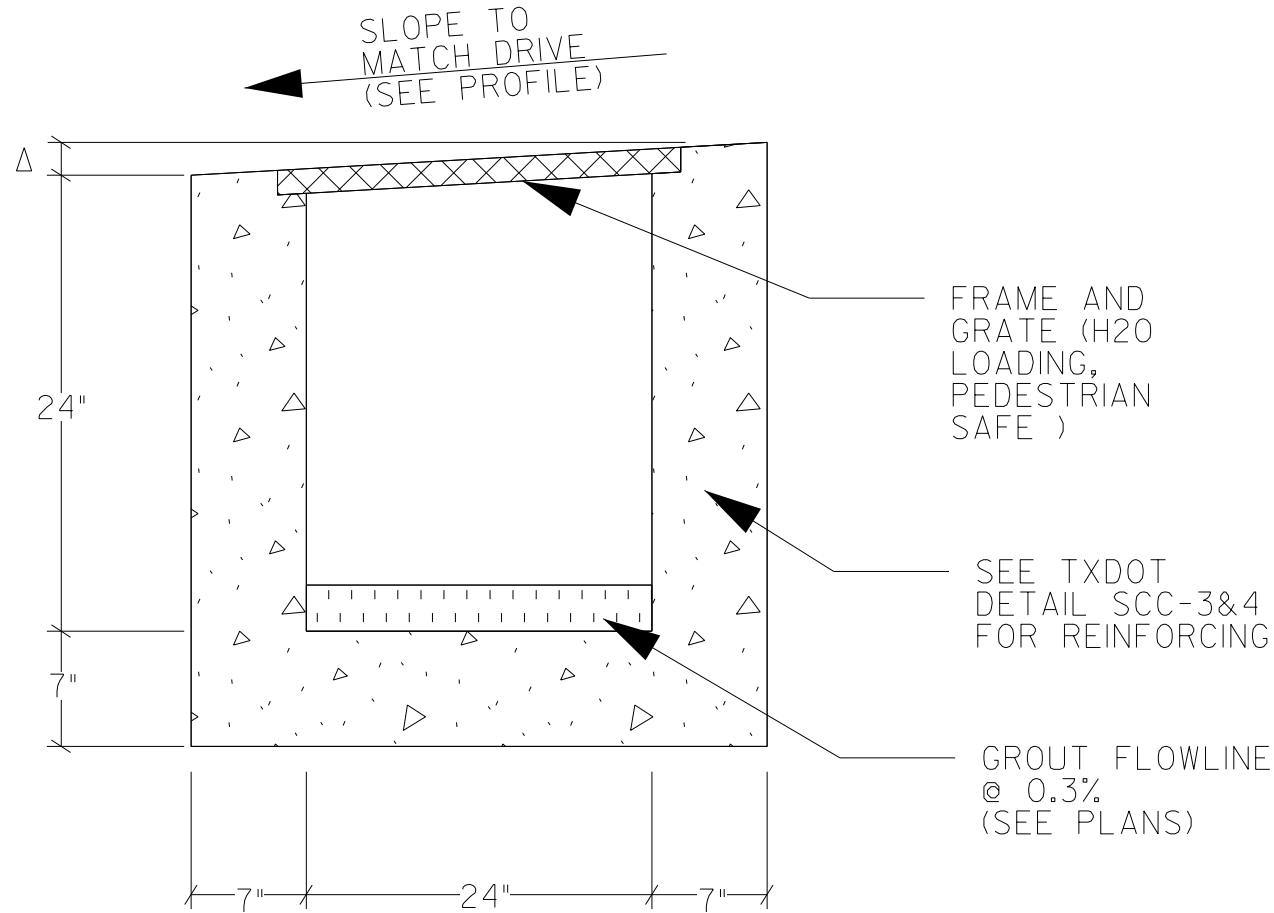
- 1 6" DIA. X6 ' L SCH. 40 STEEL PIPE BOLLARD PRIMED WITH RUST INHIBITOR, PAINT WITH SHERWIN-WILLIAMS INDUSTRIAL COATING COLOR: UMBRA (SW4008). FILL POST WITH CONCRETE AND 2" HT. DOME CONC. CAP TOP.
- 2 SIGN "NON-POTABLE", ATTACH WITH (2) 1/2" TAMPER PROOF LAG BOLTS.\*
- 3 FINISH GRADE
- 4 18" DIA. CONCRETE FOOTING 3000 PSI WITH (2) #6 X 14" BARS EACH WAY THRU PIPE. CROWN TOP OF FOOTING AWAY FROM POST

\*OMIT SIGN WHERE SHOWN ON PLANS AS "PLAIN BOLLARD"

BOLLARD DETAIL  
N.T.S.



STRAIGHT WINGS - SEE TXDOT DETAIL SW-0 (MODIFY FOR 2'X2' BOX) (OPEN ON BOTH SIDES OF TRENCH DRAIN)



- NOTES:
- 1.) CONCRETE SHALL BE 5,000 PSI 28 DAY STRENGTH
  - 2.) REINFORCING SHALL MEET ASTM A-615 OR A-185
  - 3.) CAST IRON SHALL MEET ASTM A-46 CLASS 30/35
  - 4.) FRAME AND GRATE SHALL MEET H2O LOADING REQUIREMENTS
  - 5.) GRATE SHALL MEET ADA STANDARDS (1/2" MAX. OPENING WIDTH)
  - 6.) GROUT FLOWLINE @ 0.3% PER PLANS
  - 7.) SEE TXDOT DETAIL SCC-3&4 (MODIFY FOR 2'x2' W/OPEN TOP)

TRENCH DRAIN DETAIL  
N.T.S.



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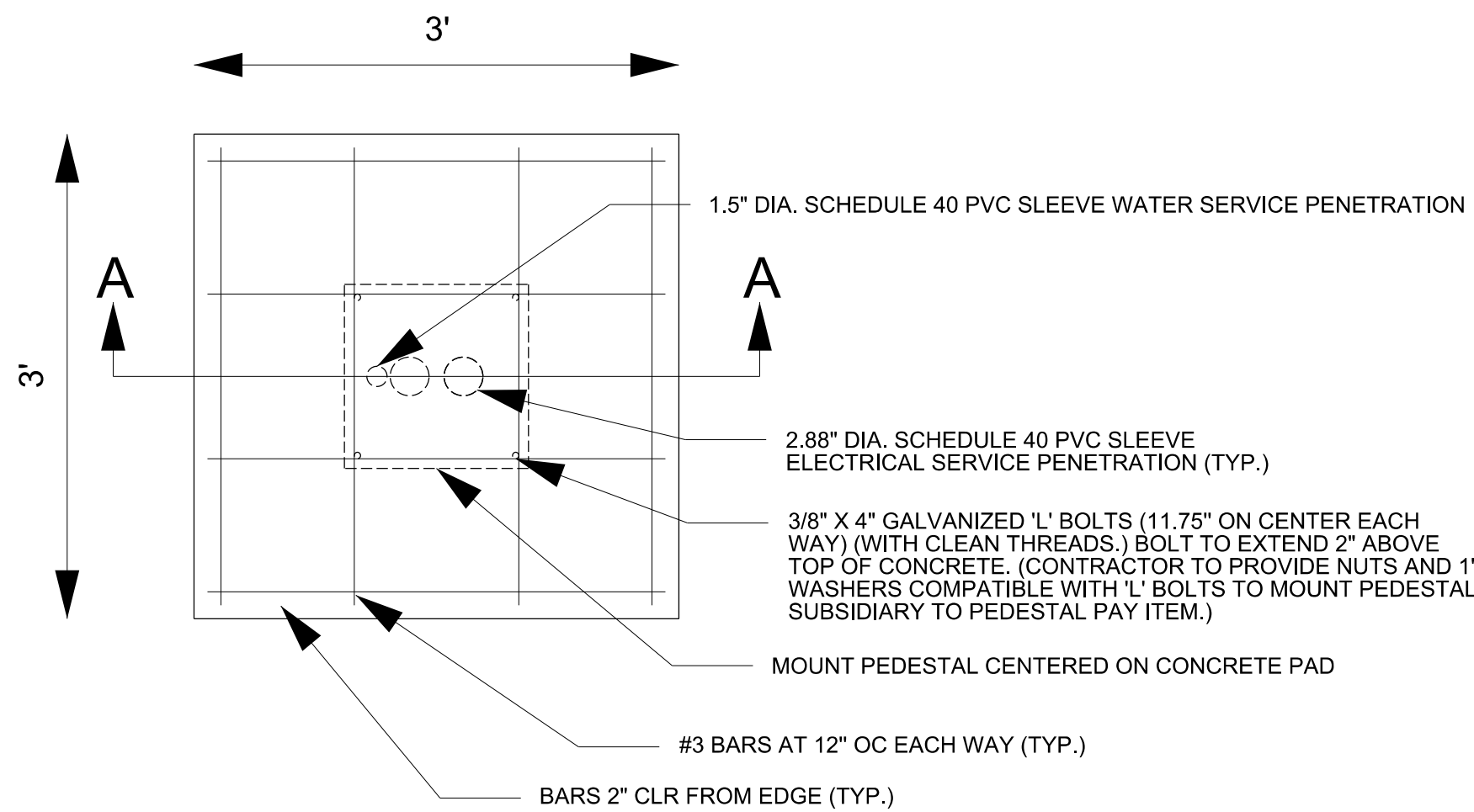
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| Project No.: 32388 |
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| Drawn By: JN       |
| Checked By: SB     |

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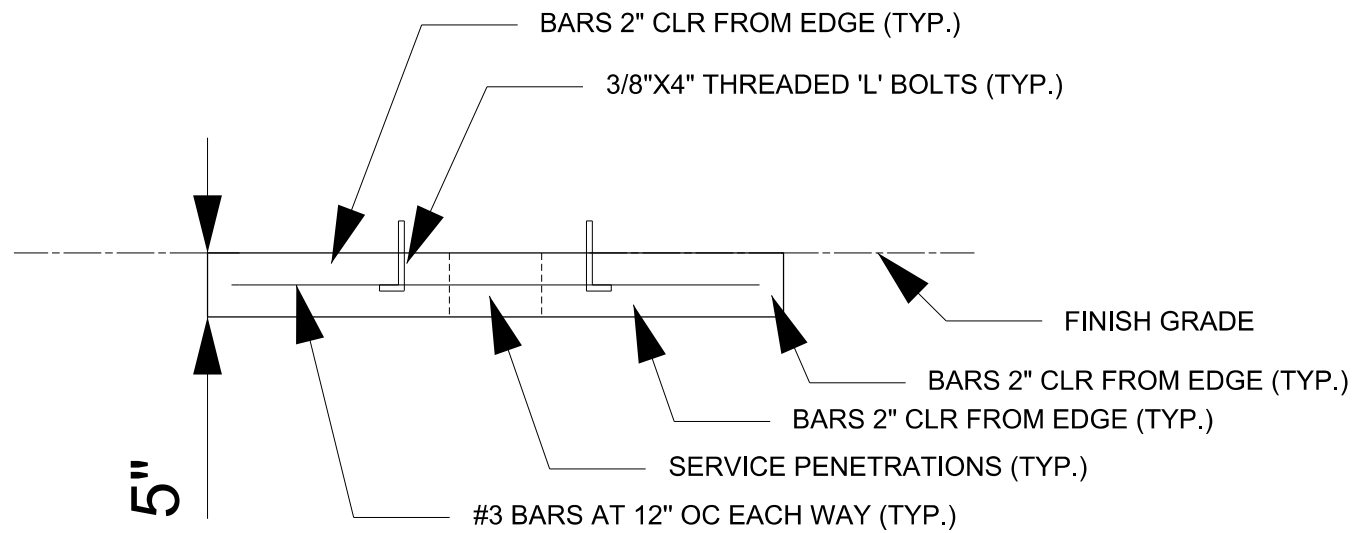
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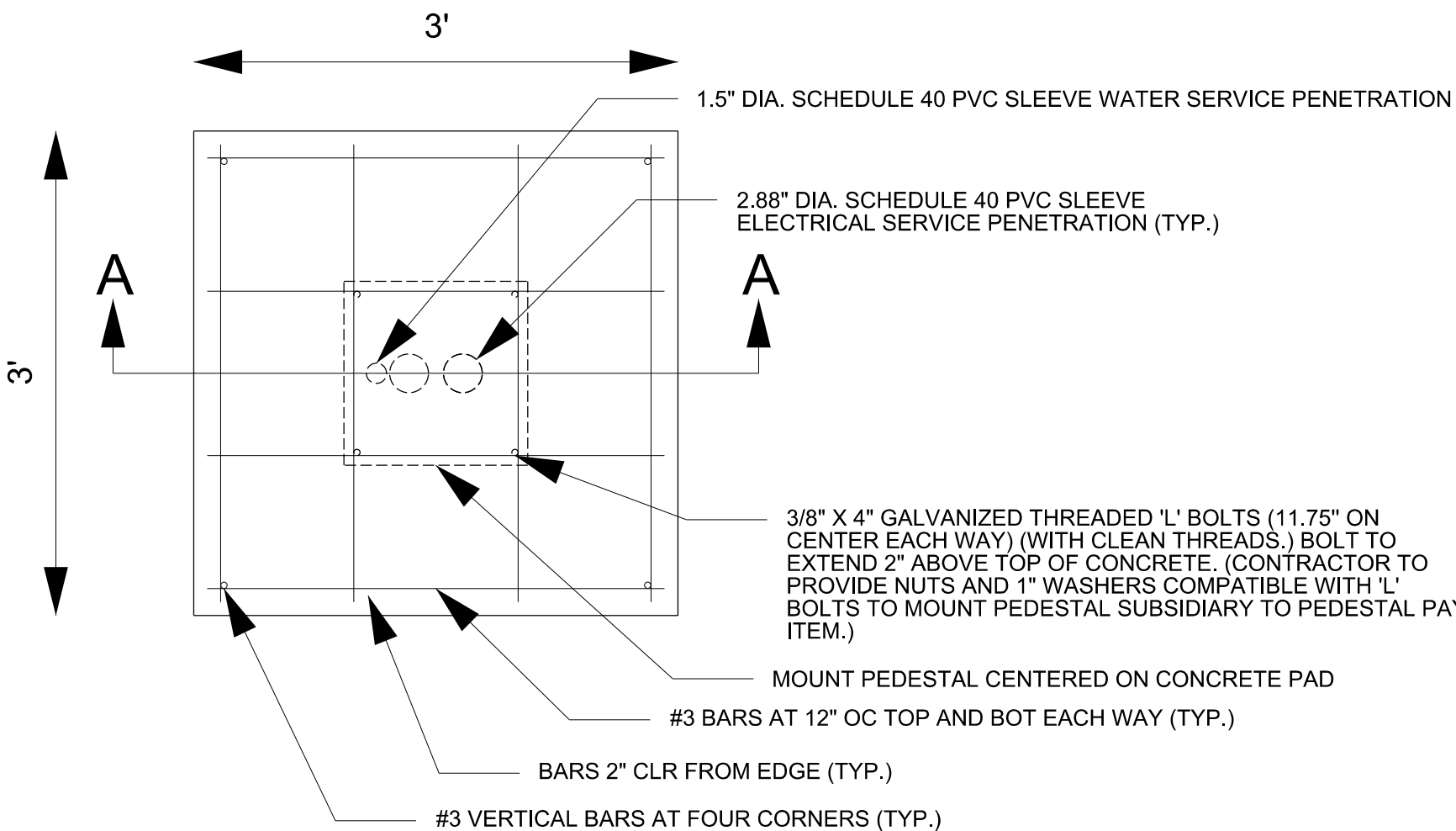


**TYPICAL CONCRETE PEDESTAL MOUNTING PAD**  
FLUSH POUR WITH ADJACENT GRADE N.T.S.

NOTES:  
1) CONCRETE SHALL BE 3000 PSI MIN. (5" THICKNESS)  
2) REINFORCEMENT SHALL BE #3 REBAR.  
3) 2" MINIMUM CONCRETE COVER OVER REINFORCING STEEL.  
4) SEE EATON POWERHOUSE POWER PEDESTAL INSTALLATION INSTRUCTIONS FOR BASE SERVICE PENETRATION LOCATION, SIZE AND DETAIL.  
5) SEE TYPICAL ISLAND UTILITY ASSIGNMENT DETAIL FOR PAD LOCATION WITHIN ISLAND.

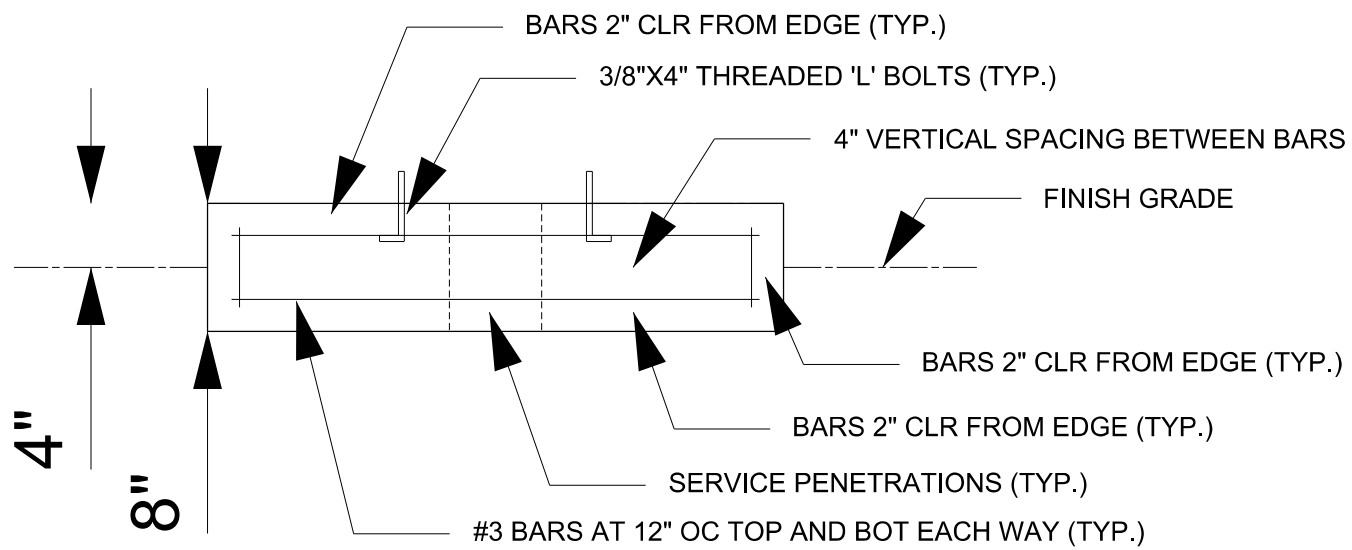


**TYPICAL FLUSH POUR CONCRETE PEDESTAL MOUNTING PAD**  
SECTION A-A N.T.S.



**TYPICAL RAISED CONCRETE PEDESTAL MOUNTING PAD**  
N.T.S.

NOTES:  
1) CONCRETE SHALL BE 3000 PSI MIN. (8" THICKNESS)  
2) CONCRETE PAD SHALL EXTEND 4" ABOVE ADJACENT FINISH GRADE.  
3) REINFORCEMENT SHALL BE #3 REBAR.  
4) VERTICAL SPACING OF REINFORCEMENT 4" ON CENTER.  
5) 2" MINIMUM CONCRETE COVER OVER REINFORCING STEEL.  
6) SEE EATON POWERHOUSE POWER PEDESTAL INSTALLATION INSTRUCTIONS FOR BASE SERVICE PENETRATION LOCATION, SIZE AND DETAIL.  
7) SEE TYPICAL ISLAND UTILITY ASSIGNMENT DETAIL FOR PAD LOCATION WITHIN ISLAND.



**TYPICAL RAISED CONCRETE PEDESTAL MOUNTING PAD**  
SECTION A-A N.T.S.

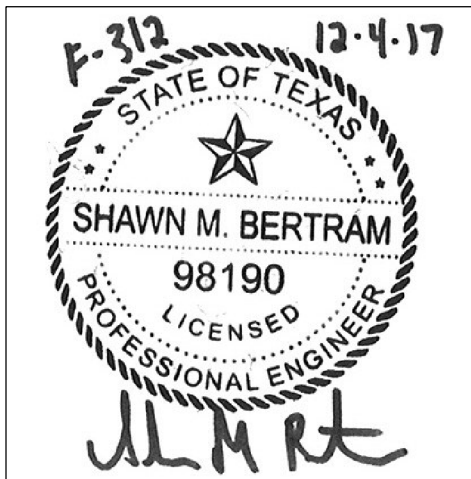


Expo Center RV Park  
210 Carlos Parker Blvd.  
Taylor, Texas 76574



9500 AMBERGLEN BLVD.  
BLDG F, SUITE 125  
AUSTIN, TEXAS 78729  
TEL (512) 252-3141  
FAX (512) 252-3141  
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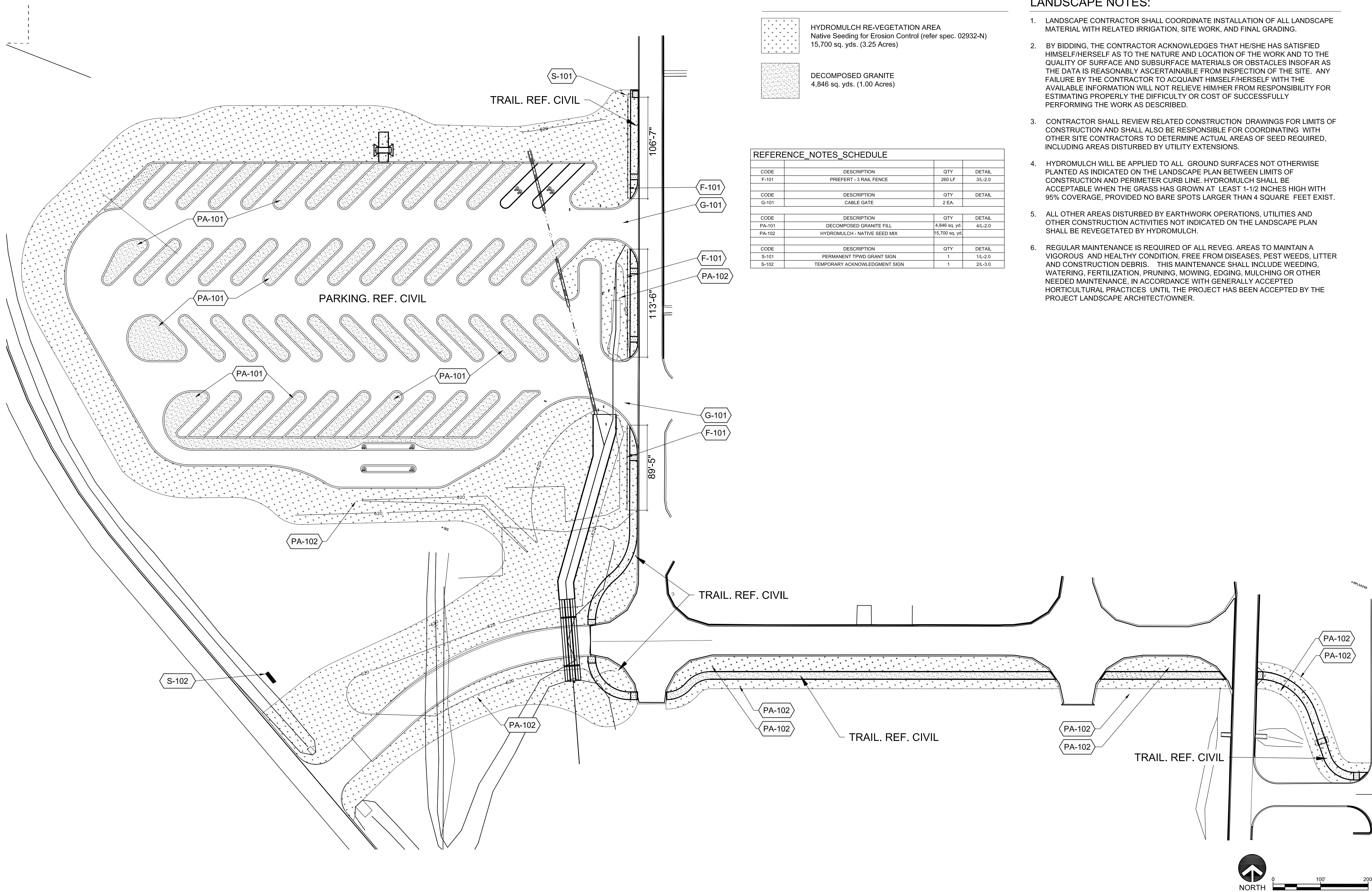
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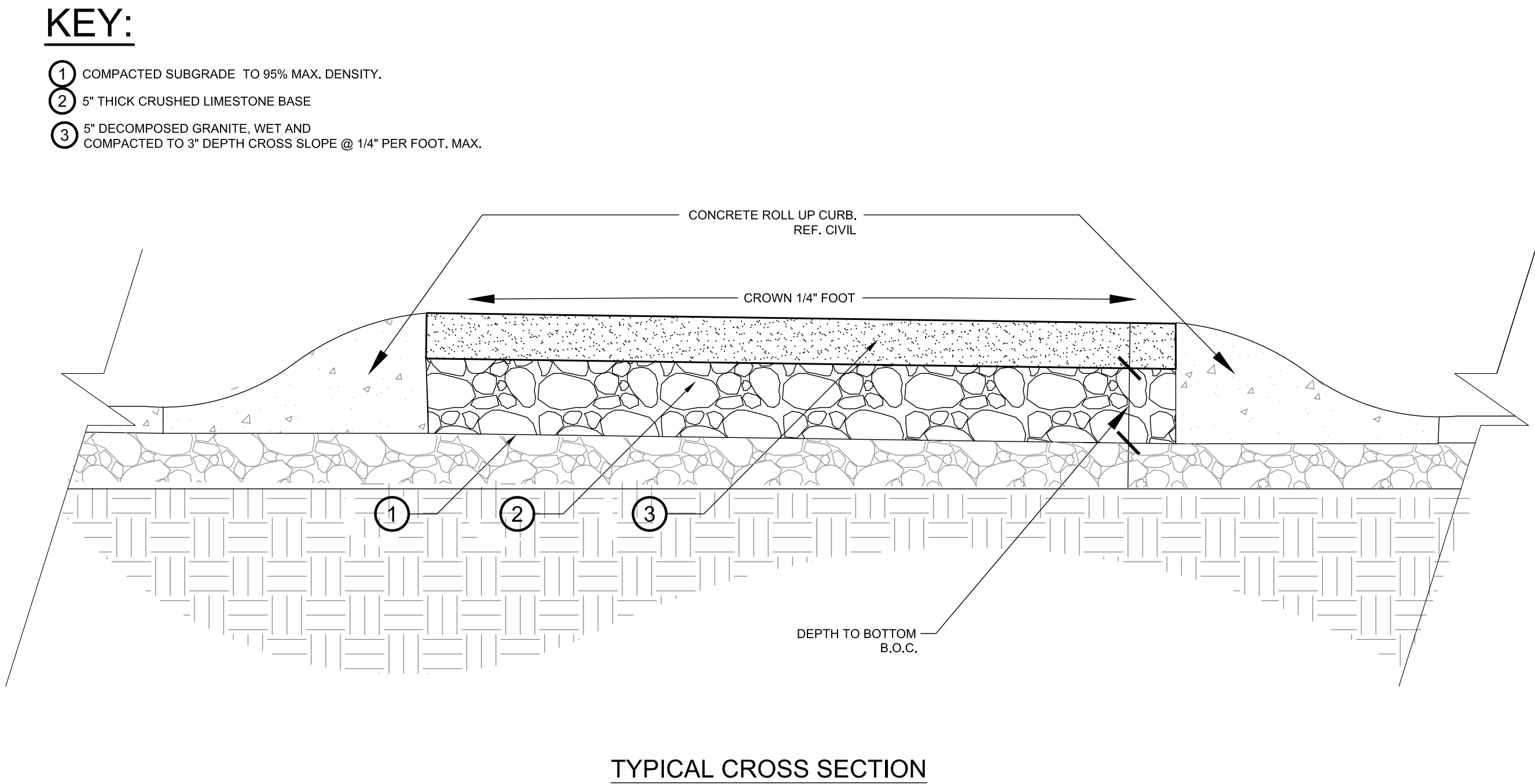
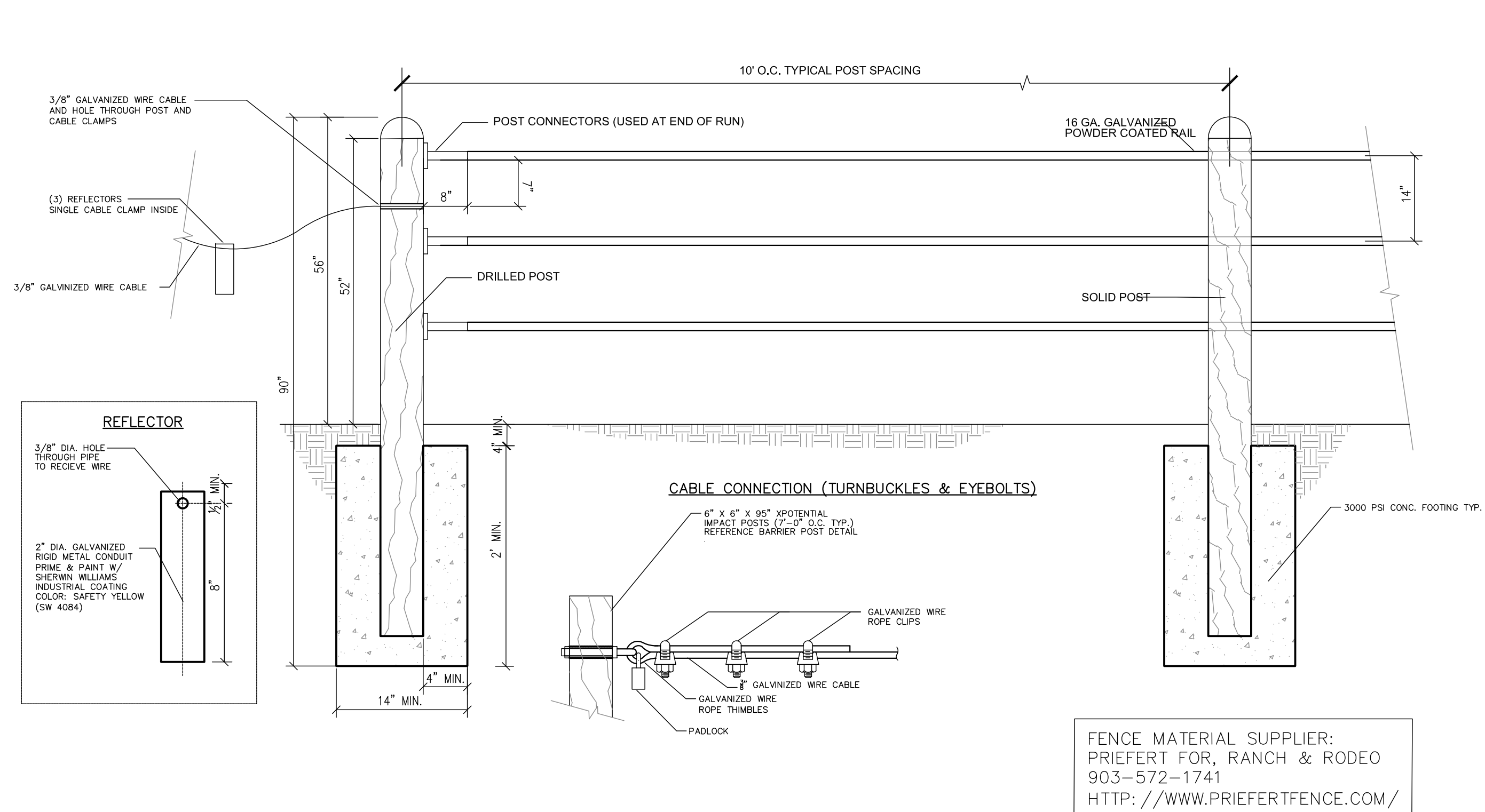
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| F-101                    | PRIERTF - 3 RAIL FENCE        | 260 LF         | 3/L-2.0 |
| CODE                     | DESCRIPTION                   | QTY            | DETAIL  |
| G-101                    | CABLE GATE                    | 2 EA.          |         |
| CODE                     | DESCRIPTION                   | QTY            | DETAIL  |
| PA-101                   | DECOMPOSED GRANITE FILL       | 4,846 sq. yd.  | 4/L-2.0 |
| PA-102                   | HYDROMULCH - NATIVE SEED MIX  | 15,700 sq. yd. |         |
| CODE                     | DESCRIPTION                   | QTY            | DETAIL  |
| S-101                    | PERMANENT TPWD GRANT SIGN     | 1              | 1/L-2.0 |
| S-102                    | TEMPORARY ACKNOWLEDGMENT SIGN | 1              | 2/L-3.0 |

1. LANDSCAPE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL LANDSCAPE MATERIAL WITH RELATED IRRIGATION, SITE WORK, AND FINAL GRADING.
2. BY BIDDING, THE CONTRACTOR ACKNOWLEDGES THAT HE/SHE HAS SATISFIED HIMSELF/HERSELF AS TO THE NATURE AND LOCATION OF THE WORK AND TO THE QUALITY OF SURFACE AND SUBSURFACE MATERIALS OR OBSTACLES INsofar AS THE DATA IS REASONABLY ASCERTAINABLE FROM INSPECTION OF THE SITE. ANY FAILURE BY THE CONTRACTOR TO ACQUAINT HIMSELF/HERSELF WITH THE AVAILABLE INFORMATION WILL NOT RELIEVE HIM/HER FROM RESPONSIBILITY FOR ESTIMATING PROPERLY THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK AS DESCRIBED.
3. CONTRACTOR SHALL REVIEW RELATED CONSTRUCTION DRAWINGS FOR LIMITS OF CONSTRUCTION AND SHALL ALSO BE RESPONSIBLE FOR COORDINATING WITH OTHER SITE CONTRACTORS TO DETERMINE ACTUAL AREAS OF SEED REQUIRED, INCLUDING AREAS DISTURBED BY UTILITY EXTENSIONS.
4. HYDROMULCH WILL BE APPLIED TO ALL GROUND SURFACES NOT OTHERWISE PLANTED AS INDICATED ON THE LANDSCAPE PLAN BETWEEN LIMITS OF CONSTRUCTION AND PERIMETER CURB LINE. HYDROMULCH SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1-1/2 INCHES HIGH WITH 95% COVERAGE, PROVIDED NO BARE SPOTS LARGER THAN 4 SQUARE FEET EXIST.
5. ALL OTHER AREAS DISTURBED BY EARTHWORK OPERATIONS, UTILITIES AND OTHER CONSTRUCTION ACTIVITIES NOT INDICATED ON THE LANDSCAPE PLAN SHALL BE REVEGETATED BY HYDROMULCH.
6. REGULAR MAINTENANCE IS REQUIRED OF ALL REVEG. AREAS TO MAINTAIN A VIGOROUS AND HEALTHY CONDITION, FREE FROM DISEASES, PEST WEEDS, LITTER AND CONSTRUCTION DEBRIS. THIS MAINTENANCE SHALL INCLUDE WEEDING, WATERING, FERTILIZATION, PRUNING, MOWING, EDGING, MULCHING OR OTHER NEEDED MAINTENANCE, IN ACCORDANCE WITH GENERALLY ACCEPTED HORTICULTURAL PRACTICES UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE PROJECT LANDSCAPE ARCHITECT/OWNER.



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND, SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 (DIG TESS) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL ALSO BE FULLY RESPONSIBLE FOR FIELD VERIFICATION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR- DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.





- 1 (3) 2" x 6" x 8' TREATED RAILS (TYP.)
- 2 4' x 8' x 3/4" TREATED PLYWOOD SIGN
- 3 1/2" GALV. CARRIAGE BOLTS (TYP.) AT 2'-0" O.C. MAX.
- 4 4" x 4" x 10' TREATED OR CEDAR POST (TYP.)
- 5 NOT USED
- 6 DIRECT BURIAL INTO SUBGRADE. MIN. 5 FT.
- 7 ALL BORDERS, GRAPHICS AND TEXT WILL BE PAINTED BLACK OR BY APPROVED EQUIVALENT METHOD AS SHOWN. SIGN INFORMATION MUST BE CLEARLY LEGIBLE FOR THE DURATION OF PROJECT CONSTRUCTION.
- 8 4' x 8' x 3/4" TREATED PLYWOOD
- 9 (12) 1/2" GALV. CARRIAGE BOLTS AT 2'-0" O.C. MAX.
- 10 4" x 4" x 10' TREATED OR CEDAR POSTS, REF. SECTION FOR ANCHORING DETAIL.
- 11 SIGN BACKGROUND WILL BE PAINTED WHITE.

|                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div> <div style="border-bottom: 1px solid black; padding-top: 5px;"> <b>PERMANENT ACKNOWLEDGEMENT SIGN</b><br/> N.T.S. </div> | <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">2</div> <div style="border-bottom: 1px solid black; padding-top: 5px;"> <b>TEMPORARY ACKNOWLEDGEMENT SIGN - TPWD</b><br/> N.T.S. </div> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

3 PRIEFERT - 3 RAIL FENCE  
N.T.S.

4 DECOMPOSED GRANITE ISLAND  
N.T.S.



Expo Center RV Park  
210 Carlos Parker Blvd  
Taylor, Texas 76574



9500 AMBERGLEN BLVD.  
BLDG F, SUITE 125  
AUSTIN, TEXAS 78729  
TEL (512) 777-4600  
FAX (512) 252-8141

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|                    |
|--------------------|
| Project No.: 32388 |
| Issued: 9-29-17    |
| Drawn By: TR       |
| Checked By: BB     |

## LANDSCAPE DETAILS

L2.0



KEYED NOTES

THESE NOTES APPLY TO THIS SHEET ONLY

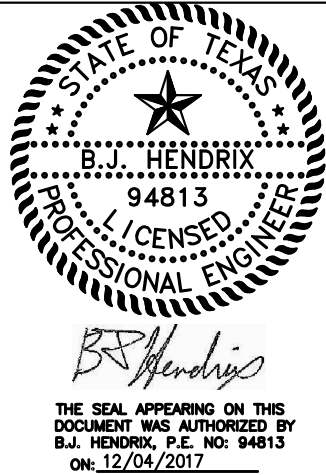
- 1 UNDERGROUND ELECTRIC CONDUIT, PULL BOXES, ETC. REFERENCE RISER DIAGRAM ON SHEET E102. ALL UTILITIES PER LATEST UTILITY COMPANY REQUIREMENTS.
- 2 UNDERGROUND ELECTRIC, SECONDARY. REFERENCE RISER DIAGRAM ON SHEET E102.
- 3A APPROXIMATE LOCATION OF EXISTING PRIMARY PULLBOX. COORDINATE FINAL CONNECTION POINT AND REQUIREMENTS WITH UTILITY PROVIDER.
- 3B PROVIDE ALTERNATE PRICE TO EXTEND TO THIS CONNECTION POINT. COORDINATE WITH ONCOR IF LOCATION '3A' ABOVE OR '3B' IS TO BE USED.
- 4 REFERENCE STRUCTURAL FOR STRUCTURAL LIGHT POLE BASE DETAIL. COORDINATE ALL FINAL POLE LOCATIONS AND CURB SETBACK DIMENSIONS WITH SITE CONTRACTOR, LANDSCAPE, AND CIVIL PLANS..
- 5 ROUTE CIRCUIT THROUGH LIGHTING CONTACTOR.
- 6 STUB 1" CONDUIT FOR FUTURE SITE SIGN POWER TO PANEL 'LA'. PROVIDE 1" CONDUIT BETWEEN SIGN LOCATION AND ELECTRICAL YARD AREA. COORDINATE LOCATION WITH OWNER AND GENERAL CONTRACTOR PRIOR TO PERFORMING WORK. MARK STUB LOCATION ON AS-BUILTS.
- 7 RV PEDESTAL POWER, APPROXIMATE LOCATION. EATON POWERHOUSE #PSU42110000200X. PEDESTAL TO HAVE 1-50A/2P RECEPTACLE, 1-30A/1P RECEPTACLE, 2-20A/1P RECEPTACLES, AMBER LED LIGHT, WITH 2 WATER CONNECTIONS. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH ACTUAL PEDESTAL SUPPLIED. COORDINATE LOCATIONS AND WATER CONNECTION WITH LANDSCAPE ARCHITECT AND CIVIL PLANS.
- 8 STUB 1-4" C TO AREA FOR FUTURE RESTROOM BUILDING. COORDIANTE LOCATION WITH OWNER AND GENERAL CONTRACTOR PRIOR TO PERFORMING WORK. MARK STUB LOCATION ON AS-BUILTS.
- 9 FUTURE EXPANSION AREA. KEEP CONDUITS OUT OF THIS AREA.

SITE LIGHTING CIRCUITING IS DIAGRAMMATIC ONLY. DOES NOT INDICATE CONDUIT ROUTING. ELECTRICAL CONTRACTOR IS TO DETERMINE ALL FINAL CONDUIT ROUTING, COORDINATED WITH ALL SITE UTILITIES AND SITE CONDITIONS. REFERENCE CIVIL AND LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.

DO NOT BEGIN SITE UTILITY WORK UNTIL DRAWINGS HAVE BEEN RECEIVED FROM UTILITY COMPANY.

NO CIVIL SITE PUMPS.

| Revision No. | Date | Description |
|--------------|------|-------------|
|              |      |             |
|              |      |             |
|              |      |             |
|              |      |             |
|              |      |             |
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REFERENCE GENERAL NOTES ON SHEETS M501, P501 AND E501 FOR ADDITIONAL INFORMATION.



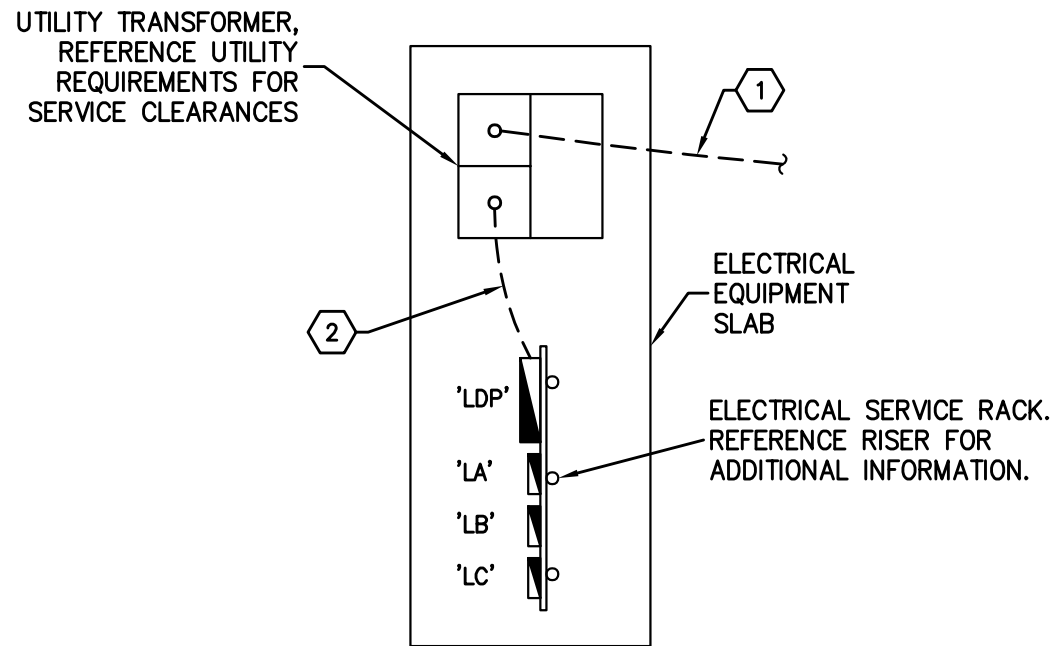
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HCE job no.: 17-046

Project No.: 32388  
Issued:  
Drawn By:  
Checked By:

SITE PLAN - ELECTRICAL

E100



02 ENLARGED PLAN - ELECTRICAL

SCALE: 1/8" = 1'-0"

01 SITE PLAN - ELECTRICAL

SCALE: 1" = 60'-0"







## WILCO EXPO RV PARK

|                                                   |                                                   |         |
|---------------------------------------------------|---------------------------------------------------|---------|
| 1. LIGHTING LOAD:                                 |                                                   | KVA     |
| A. LIGHTING LOAD                                  | 1.2 KVA X 1.25                                    | = 1.5   |
|                                                   |                                                   |         |
| 2. RECEPTACLE LOAD:                               |                                                   |         |
| A.                                                | 0 KVA - 10 KVA = N/A KVA x 50% = N/A KVA + 10 KVA | = 0.0   |
|                                                   |                                                   |         |
| 3. EQUIPMENT LOAD:                                |                                                   |         |
| A. AC                                             |                                                   | = 0.0   |
| B. HEAT                                           |                                                   | = 0.0   |
| C. WATER HEATER(S)                                |                                                   | = 0.0   |
| D. ELEVATOR(S)                                    |                                                   | = 0.0   |
| E. MISCELLANEOUS                                  |                                                   | = 0.5   |
| F. EXST. LOAD PER UTILITY CO.                     | KW X .9 PF X 125%                                 | = 0.0   |
| G.                                                |                                                   | =       |
| H.                                                |                                                   | =       |
|                                                   |                                                   |         |
| 4. RECREATIONAL VEHICLE PEDESTAL LOAD (51 SITES): |                                                   |         |
| A.                                                | 510 KVA x 50% DEMAND FACTOR (NEC 551.73)          | = 255.0 |
|                                                   |                                                   |         |
| 5. 25% OF LARGEST MOTOR ( HP)                     | 0 KVA                                             | = 0.0   |
|                                                   |                                                   |         |
| 6. TOTAL CONNECTED LOAD (KVA)                     |                                                   | = 257.0 |
|                                                   |                                                   |         |
| 7. FUTURE RESTROOM LOAD                           |                                                   | = 357.0 |
| 100 KVA + TOTAL CONNECTED LOAD                    | 257 KVA                                           |         |
|                                                   |                                                   |         |
| 8. TOTAL AMP LOAD OF:                             |                                                   |         |
| 1488 AMPS AT                                      | 240 VOLT, PHASE, WIRE                             |         |

ESC-68-240V

A. USE TABLE FOR WIRE AND CONDUIT SIZES FOR ALL PANELBOARDS UNLESS NOTED OTHERWISE

B. WIRE SIZES BASED ON 86" AMBIENT, 75° COLUMN OF CHART. NEC 310.15(B)(16)

C. TABLE FOR 120/240/1PH/3W PANELBOARDS.

D. PROVIDE 200% NEUTRAL BUS BAR AND 200% NEUTRAL WIRE WHEN SPECIFIED.

| PANEL SIZE OR MCB SIZE | WIRE SIZE        | GROUND | CONDUIT    |
|------------------------|------------------|--------|------------|
| 60                     | 3 #6             | #10    | 1"         |
| 100                    | 3 #3             | #8     | 1 1/4"     |
| 125                    | 3 #1             | #6     | 1 1/2"     |
| 150                    | 3 #1/0           | #6     | 2"         |
| 200                    | 3 #3/0           | #6     | 2"         |
| 225                    | 3 #4/0           | #4     | 2 1/2"     |
| 300                    | 3 #350           | #4     | 3"         |
| 400                    | 2 SETS 3 #3/0 OR | #3     | 2" PER SET |
|                        | 1 SET 3 #600     | #3     | 4"         |
| 600                    | 2 SETS 3 #350    | #1     | 3" PER SET |
| 800                    | 2 SETS 3 #600    | #1/0   | 4" PER SET |

**GEAR MANUFACTURER TO PROVIDE COORDINATION STUDY, FAULT CURRENT ANALYSIS AND DETERMINE FINAL KAIC RATINGS FOR ALL GEAR.**

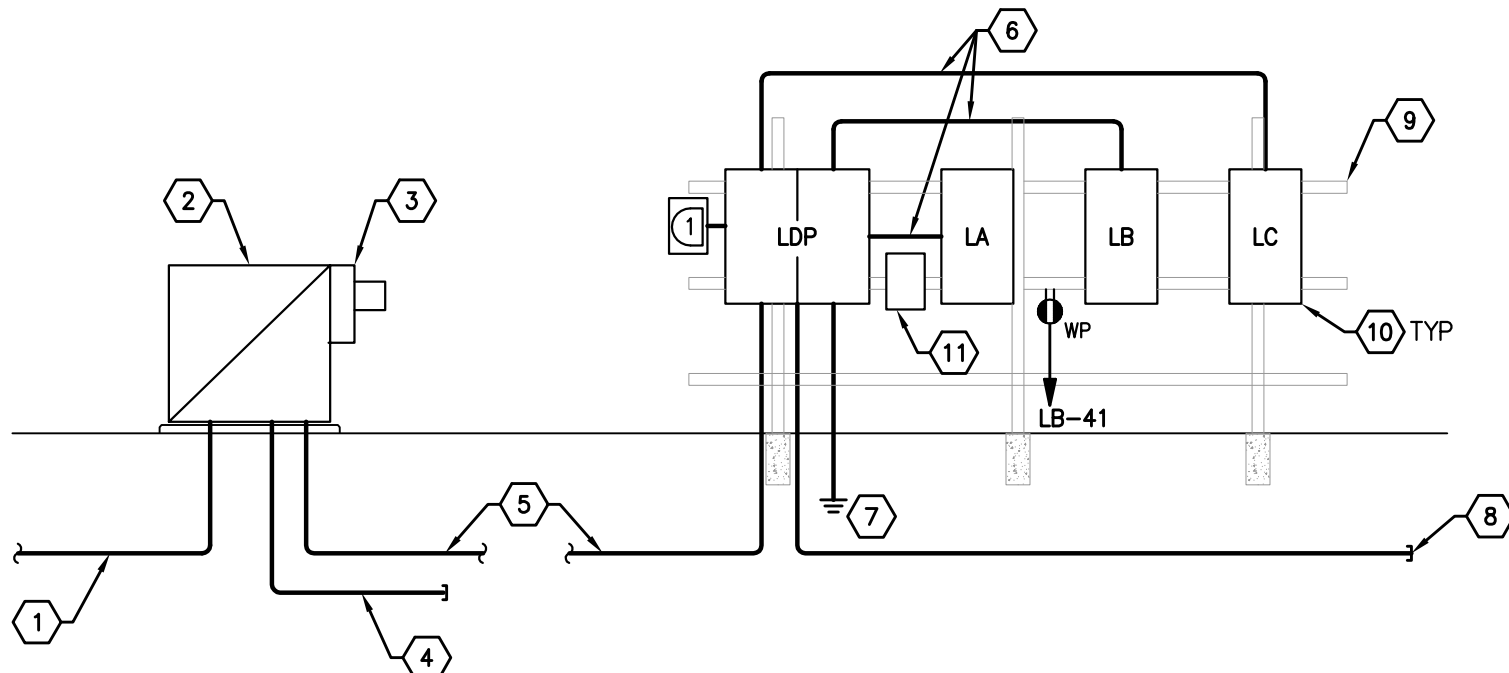
**ELECTRICAL CONTRACTOR TO COORDINATE  
METER AND SERVICE LOCATION WITH DOOR  
LOCATION. CLEARANCES TO MEET N.E.C.**

**ELECTRICAL CONTRACTOR FILL OUT UTILITY  
COMPANY LOAD FORMS BASED ON LOAD  
ANALYSIS PROVIDED ON THE PLANS.**

- 1 TWO (2) - 4" PRIMARY CONDUITS PER UTILITY COMPANY REQUIREMENTS.
- 2 NEW UTILITY TRANSFORMER PROVIDED AND INSTALLED BY UTILITY COMPANY.  
TRANSFORMER PAD BY ELECTRICAL CONTRACTOR PER UTILITY COMPANY  
REQUIREMENTS.
- 3 METER AT TRANSFORMER PROVIDED BY UTILITY COMPANY AND INSTALLED BY  
ELECTRICAL CONTRACTOR PER UTILITY COMPANY REQUIREMENTS.
- 4 STUB THE MAXIMUM NUMBER OF SPARE SECONDARY CONDUITS ALLOWED BY  
UTILITY COMPANY TO A POINT 5' OUTSIDE TRANSFORMER PAD. INDICATE EXACT  
LOCATION OF CONDUITS ON RECORD DRAWINGS.
- 5 THREE (3) SETS OF 3 #600 KCM. EACH SET IN A 4" CONDUIT.
- 6 REFERENCE PANELBOARD CONNECTION SCHEDULE FOR CONDUIT/WIRING SIZES  
AND QUANTITIES.
- 7 REFERENCE SERVICE GROUNDING DETAIL ON DETAIL SHEET(S) FOR GROUNDING  
REQUIREMENTS.
- 8 STUB 1.4" FOR FUTURE RESTROOM BUILDING. REFERENCE SITE PLAN FOR  
ADDITIONAL INFORMATION. COORDINATE STUB LOCATION WITH OWNER AND CIVIL.
- 9 SERVICE RACK SHALL HAVE 2 1/2" RIGID PIPE VERTICALS BURIED A MINIMUM OF 3' IN  
THE GROUND AND ENCASED IN CONCRETE. PROVIDE SCREW CAPS AT TOP OF  
POLE TO PREVENT THE ENTRY OF WATER. HORIZONTALS MAY BE UNISTRUT  
INSTALLED AS NEEDED FOR SUPPORT OF PANEL. PROVIDE A COLD GALV PAINT ON  
ALL UNISTRUT CUTS TO PREVENT RUSTING.
- 10 REFERENCE PANELBOARD SCHEDULE.
- 11 TIMECLOCK/LIGHTING CONTACTOR. REFERENCE DETAIL. PROVIDE NEMA 3R  
LOCKABLE ENCLOSURE TO HOUSE COMPONENTS. MOUNT ON SERVICE RACK.

ESC-71

- A. PROVIDE TVSS SURGE SUPPRESSION PER LATEST UL. BASIS OF DESIGN, CURRENT TECHNOLOGY. TVSS MUST BE ABLE TO BE SERVICEABLE WITHOUT SHUTTING PANEL OFF.
- B. 3RD PARTY SINGLE IMPULSE SURGE CURRENT TEST MUST BE PROVIDED WITH SUBMITTAL VERIFYING PERFORMANCE MEETS SPECIFICATIONS.
- C. WHERE FLUSH MOUNT PANELS ARE SPECIFIED, COORDINATE 'PX3' PANEL MANUFACTURER OPTION WITH ELECTRICAL CONTRACTOR.
- D. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- E. VOLTAGE AND CONFIGURATION TO MATCH PANEL BEING SERVICED. REFERENCE RISER DIAGRAM AND PANEL SCHEDULES.
- E. PROVIDE FILTER OPTION.
- F. 15 YEAR WARRANTY STANDARD.
- G. CABLE ENTRY TO BE COORDINATED WITH ELECTRICAL CONTRACTOR.
- H. QUANTITIES PER RISER DIAGRAM.
- I. PROVIDE NEMA 3R WHEN ROOF MOUNTED. REFERENCE PLANS AND RISER DIAGRAM.

[illegible]

# 01 ELECTRICAL RISER DIAGRAM

SCALE: NONE

A. CONFIRM CEILING TYPE AND CONSTRUCTION PRIOR TO ORDERING LIGHT FIXTURE. PROVIDE FLANGE KIT FOR PROPER INSTALLATION OF LAY-IN FIXTURE IN GYPSUM CEILING. PROVIDE FIXTURE TYPE 'h2' IN LIEU OF FIXTURE TYP 'A2' IN ROOMS WITH NO CEILING. CHAIN HANG AT 10' A.F.F.

B. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF WALL MOUNTED LIGHT FIXTURES WITH ARCHITECT PRIOR TO ROUGH-IN.

C. CONFIRM FINISH WITH OWNER PRIOR TO ORDERING LIGHT FIXTURES.

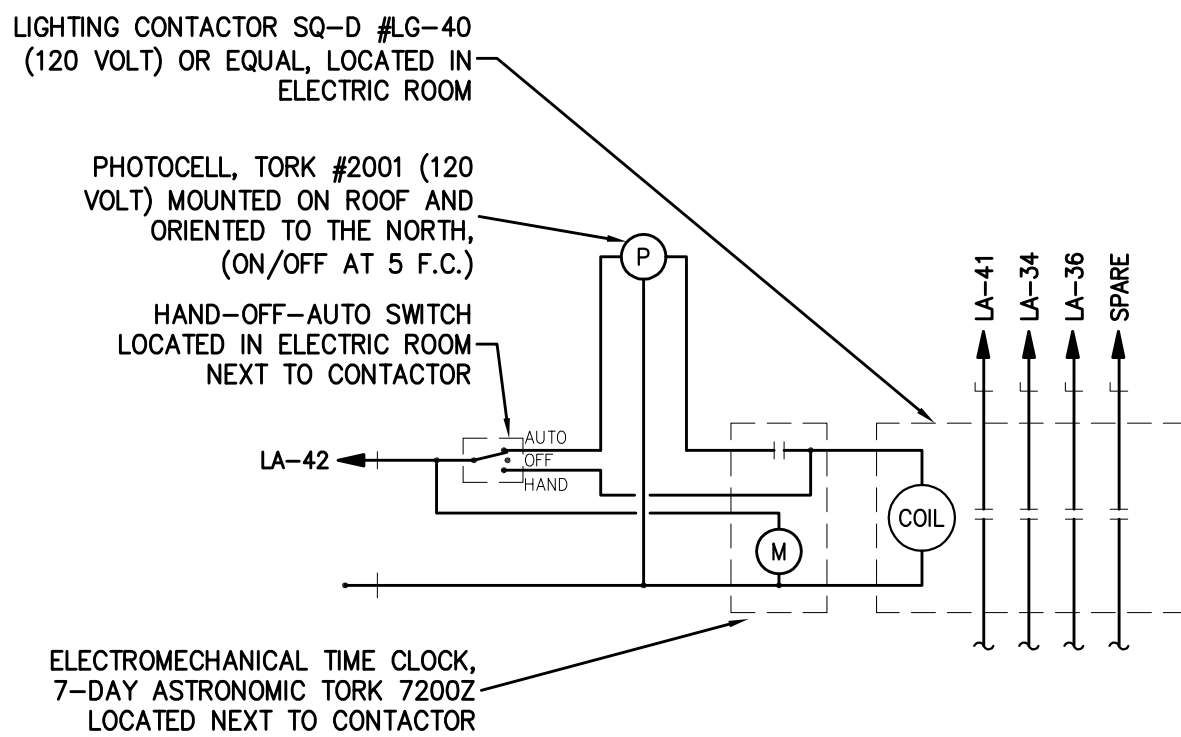
(\*) PROVIDE UNIT PRICE FOR THIS FIXTURE. INCLUDE MATERIAL AND LABOR TO BE ADDED AT ANY TIME DURING THE PROJECT.

| MARK | MANUFACTURERS<br>CATALOG NUMBER                                                                    | NO. / LAMPS<br>/ TYPE / WATTS | FIXTURE<br>VOLTS / WATTS | DESCRIPTION AND COMMENTS                                                                                                                                                                                                                         |
|------|----------------------------------------------------------------------------------------------------|-------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S1   | AMERICAN ELECTRIC LIGHTING<br>ATBM-H-MVOLT-R4-PN2BTDD4<br>(pole) HOLOPHANE AORTS3080B-<br>P5-ND-HG | 1/17439 LUMENS/164            | 1MVOLT/164               | POLE MOUNTED LED FIXTURE WITH DIE CAST<br>ALUMINUM HOUSING, PHOTOCELL ON/OFF<br>CONTROL WITH AUTO DIM TO 50% AFTER 10PM.<br>GRAY FINISH. POLE IS ROUND TAPERED STEEL<br>TENON FOR FIXTURE MOUNTING AND BASE COVER.<br>HOT DIP GALVANIZED FINISH. |

ED FLOWERS 512-639-5220  
edward.flowers@oncor.com

UTILITY COMPANY TO DETERMINE SERVICE TRANSFORMER SIZES. DO NOT BEGIN ANY UTILITY WORK UNTIL UTILITY DRAWINGS HAVE BEEN ISSUED BY UTILITY COMPANY. UTILITY COMPANY TO PROVIDE AVAILABLE FAULT CURRENT WHEN AVAILABLE.

THE ELECTRICAL RISER DIAGRAM IS SHOWN SCHEMATICALLY IN NATURE TO INDICATE THE RELATIONSHIP OF THE ELECTRICAL SYSTEM COMPONENTS. IT DOES NOT REFLECT THE ACTUAL ROUTING OF CONDUITS. CONTRACTOR SHALL DETERMINE OVERHEAD OR UNDERGROUND CONDUIT ROUTING. CONDUIT SHALL NOT BE ROUTED EXPOSED ON EXTERIOR WALLS EXCEPT OUT OF THE BOTTOM OF THE PANEL TO RUN UNDER SLAB OR TO AN ADJACENT PANEL WITHIN 24". EXTERIOR EXPOSED CONDUIT SHALL BE MINIMIZED.



SCALE: NONE

EDE-11

REFERENCE GENERAL NOTES ON  
SHEETS M501, P501 AND E501  
FOR ADDITIONAL INFORMATION



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**F - 4095** ©

HCE job no.: 17-046

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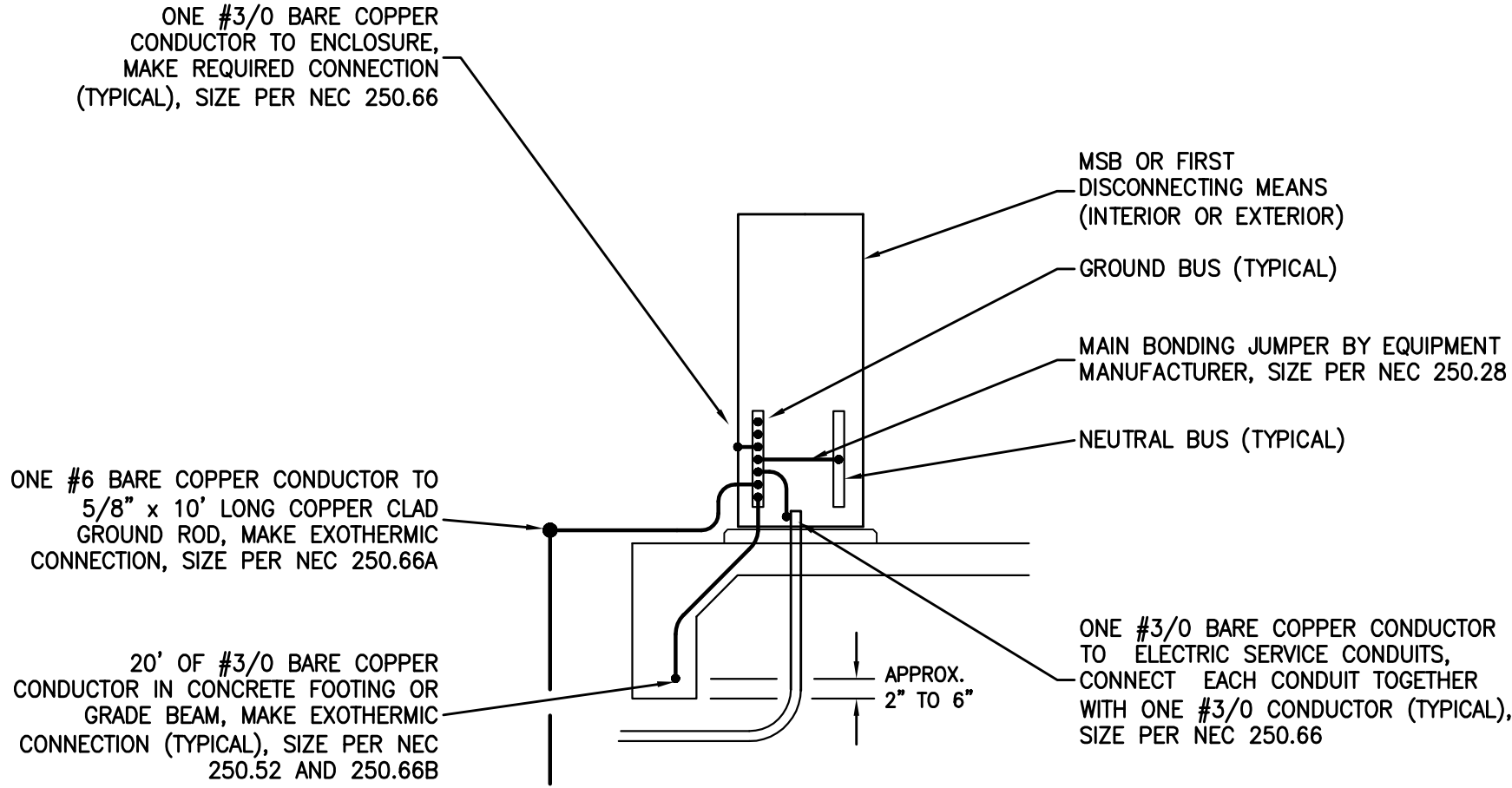
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| Project No.: 32388 |
| Issued:            |
| Drawn By:          |
| Checked By:        |

## RISER & SCHEDULES - ELECTRICAL

E102





### TYPICAL ELECTRIC SERVICE GROUNDING DETAIL

NO SCALE (CONDUCTOR SIZES SHOWN MAY BE ADJUSTED PER NEC FOR THE ACTUAL AMPACITY OF SERVICE) EDE-53

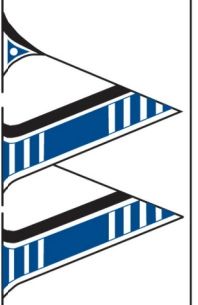
| CIRCUIT BREAKER PANELBOARD ' LB '                                                                                                                                                                                                                                                                                                                                                                                                           |   |                     |              |      |       |       |      |              |                  |   |     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------|--------------|------|-------|-------|------|--------------|------------------|---|-----|--|
| WILCO EXPO RV PARK                                                                                                                                                                                                                                                                                                                                                                                                                          |   |                     |              |      |       |       |      |              |                  |   |     |  |
| <b>STANDARD NOTES:</b><br>1. PROVIDE BALANCED LOAD ON EACH PHASE. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY.<br>2. REFERENCE BRANCH CIRCUIT WIRE AND CONDUIT SCHEDULE.                                                                                                                                                                                                                                                       |   |                     |              |      |       |       |      |              |                  |   |     |  |
| <b>NOTES: (THESE ITEMS APPLY ONLY WHERE SPECIFIED BELOW)</b><br>(a) REFERENCE SPLIT SYSTEM / ROOFTOP ELECTRICAL CONNECTION SCHEDULE.<br>(b) REFERENCE TRANSFORMER SCHEDULE.<br>(c) REFERENCE FAN POWERED BOX / VAV CONNECTION SCHEDULE.<br>(d) PROVIDE WITH SHUNT TRIP BREAKER.<br>(e) PROVIDE WITH 200% NEUTRAL BUS AND WIRE.<br>(f) PROVIDE PANEL EXTENSION WITH PHASE MONITORING PROTECTION.<br>(g) REFERENCE ASSOCIATED PANEL SCHEDULE. |   |                     |              |      |       |       |      |              |                  |   |     |  |
| 120/240 VOLT, 1 PHASE, 3 WIRE, 600 A, MCB, KA, RMS SYM.<br>SURFACE MOUNTED, NEMA 3R ENCLOSURE, S/N<br>FEEDER: REFERENCE PANELBOARD CONNECTION SCHEDULE                                                                                                                                                                                                                                                                                      |   |                     |              |      |       |       |      |              |                  |   |     |  |
| CKT                                                                                                                                                                                                                                                                                                                                                                                                                                         |   | LOAD DESCRIPTION    | WIRE/CONDUIT | KVA  | C/B   | C/B   | KVA  | WIRE/CONDUIT | LOAD DESCRIPTION |   | CKT |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE          | E | 2   |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 4   |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE          | E | 6   |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 8   |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE          | E | 10  |  |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 12  |  |
| 13                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 14  |  |
| 15                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 16  |  |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 18  |  |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 20  |  |
| 21                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 22  |  |
| 23                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 24  |  |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 26  |  |
| 27                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 28  |  |
| 29                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 30  |  |
| 31                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 32  |  |
| 33                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE             | 40           | 10.0 | 100/2 | 100/2 | --   | --           | SPARE            | S | 34  |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | SPARE            | S | 36  |  |
| 37                                                                                                                                                                                                                                                                                                                                                                                                                                          | S | SPARE               | --           | --   | 100/2 | 100/2 | --   | --           | SPARE            | S | 38  |  |
| 39                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                   | --           | --   | --    | --    | --   | --           | "                | " | 40  |  |
| 41                                                                                                                                                                                                                                                                                                                                                                                                                                          | R | EXTERIOR RECEPTACLE | 2            | 1.0  | 20/1  | 20/1  | --   | --           | SPARE            | S | 42  |  |
| <b>ELECTRICAL LOAD CALCULATIONS:</b><br>CONNECTED LOAD<br>LIGHTING = 0.0 KVA<br>RECEPTACLE = 1.0 KVA<br>EQUIPMENT = 170.0 KVA<br>KITCHEN = 0.0 KVA<br>SPARES = 0.0 KVA<br>TOTAL = 171.0 KVA<br>DEMAND FACTOR<br>X 1.25<br>NEC 220 - 14<br>X 0.5 (NEC 551.73)<br>NEC 220 - 56<br>X 0.5<br>DEMAND LOAD<br>= 0.0 KVA<br>= 1.0 KVA<br>= 85.0 KVA<br>= 0.0 KVA<br>= 86.0 KVA<br>REMARKS:<br>TOTAL 358 AMPS                                       |   |                     |              |      |       |       |      |              |                  |   |     |  |

| CIRCUIT BREAKER PANELBOARD ' LC '                                                                                                                                                                                                                                                                                                                                                                                                           |   |                  |              |      |       |       |      |              |                  |   |     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------|--------------|------|-------|-------|------|--------------|------------------|---|-----|--|
| WILCO EXPO RV PARK                                                                                                                                                                                                                                                                                                                                                                                                                          |   |                  |              |      |       |       |      |              |                  |   |     |  |
| <b>STANDARD NOTES:</b><br>1. PROVIDE BALANCED LOAD ON EACH PHASE. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY.<br>2. REFERENCE BRANCH CIRCUIT WIRE AND CONDUIT SCHEDULE.                                                                                                                                                                                                                                                       |   |                  |              |      |       |       |      |              |                  |   |     |  |
| <b>NOTES: (THESE ITEMS APPLY ONLY WHERE SPECIFIED BELOW)</b><br>(a) REFERENCE SPLIT SYSTEM / ROOFTOP ELECTRICAL CONNECTION SCHEDULE.<br>(b) REFERENCE TRANSFORMER SCHEDULE.<br>(c) REFERENCE FAN POWERED BOX / VAV CONNECTION SCHEDULE.<br>(d) PROVIDE WITH SHUNT TRIP BREAKER.<br>(e) PROVIDE WITH 200% NEUTRAL BUS AND WIRE.<br>(f) PROVIDE PANEL EXTENSION WITH PHASE MONITORING PROTECTION.<br>(g) REFERENCE ASSOCIATED PANEL SCHEDULE. |   |                  |              |      |       |       |      |              |                  |   |     |  |
| 120/240 VOLT, 1 PHASE, 3 WIRE, 600 A, MCB, KA, RMS SYM.<br>SURFACE MOUNTED, NEMA 3R ENCLOSURE, S/N<br>FEEDER: REFERENCE PANELBOARD CONNECTION SCHEDULE                                                                                                                                                                                                                                                                                      |   |                  |              |      |       |       |      |              |                  |   |     |  |
| CKT                                                                                                                                                                                                                                                                                                                                                                                                                                         |   | LOAD DESCRIPTION | WIRE/CONDUIT | KVA  | C/B   | C/B   | KVA  | WIRE/CONDUIT | LOAD DESCRIPTION |   | CKT |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE          | E | 2   |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 4   |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE          | E | 6   |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 8   |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE          | E | 10  |  |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 12  |  |
| 13                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 14  |  |
| 15                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 16  |  |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 18  |  |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 20  |  |
| 21                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 22  |  |
| 23                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 24  |  |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 26  |  |
| 27                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 28  |  |
| 29                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE          | E | 30  |  |
| 31                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 32  |  |
| 33                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | --   | --           | SPARE            | S | 34  |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | SPARE            | S | 36  |  |
| 37                                                                                                                                                                                                                                                                                                                                                                                                                                          | S | SPARE            | --           | --   | 100/2 | 100/2 | --   | --           | SPARE            | S | 38  |  |
| 39                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 40  |  |
| 41                                                                                                                                                                                                                                                                                                                                                                                                                                          | S | SPARE            | --           | --   | 20/1  | 20/1  | --   | --           | SPARE            | S | 42  |  |
| <b>ELECTRICAL LOAD CALCULATIONS:</b><br>CONNECTED LOAD<br>LIGHTING = 0.0 KVA<br>RECEPTACLE = 0.0 KVA<br>EQUIPMENT = 170.0 KVA<br>KITCHEN = 0.0 KVA<br>SPARES = 0.0 KVA<br>TOTAL = 170.0 KVA<br>DEMAND FACTOR<br>X 1.25<br>NEC 220 - 14<br>X 0.5 (NEC 551.73)<br>NEC 220 - 56<br>X 0.5<br>DEMAND LOAD<br>= 0.0 KVA<br>= 0.0 KVA<br>= 85.0 KVA<br>= 0.0 KVA<br>= 85.0 KVA<br>REMARKS:<br>TOTAL 354 AMPS                                       |   |                  |              |      |       |       |      |              |                  |   |     |  |

| CIRCUIT BREAKER PANELBOARD ' LDP '                                                                                                                                                                                                                                                                                                                                                                                                          |   |                  |              |      |       |       |      |              |                  |   |     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------|--------------|------|-------|-------|------|--------------|------------------|---|-----|--|
| WILCO EXPO RV PARK                                                                                                                                                                                                                                                                                                                                                                                                                          |   |                  |              |      |       |       |      |              |                  |   |     |  |
| <b>STANDARD NOTES:</b><br>1. PROVIDE BALANCED LOAD ON EACH PHASE. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY.<br>2. REFERENCE BRANCH CIRCUIT WIRE AND CONDUIT SCHEDULE.                                                                                                                                                                                                                                                       |   |                  |              |      |       |       |      |              |                  |   |     |  |
| <b>NOTES: (THESE ITEMS APPLY ONLY WHERE SPECIFIED BELOW)</b><br>(a) REFERENCE SPLIT SYSTEM / ROOFTOP ELECTRICAL CONNECTION SCHEDULE.<br>(b) REFERENCE TRANSFORMER SCHEDULE.<br>(c) REFERENCE FAN POWERED BOX / VAV CONNECTION SCHEDULE.<br>(d) PROVIDE WITH SHUNT TRIP BREAKER.<br>(e) PROVIDE WITH 200% NEUTRAL BUS AND WIRE.<br>(f) PROVIDE PANEL EXTENSION WITH PHASE MONITORING PROTECTION.<br>(g) REFERENCE ASSOCIATED PANEL SCHEDULE. |   |                  |              |      |       |       |      |              |                  |   |     |  |
| 120/240 VOLT, 1 PHASE, 3 WIRE, 1800 A, MCB, KA, RMS SYM.<br>SURFACE MOUNTED, NEMA 3R ENCLOSURE, S/N<br>FEEDER: REFERENCE PANELBOARD CONNECTION SCHEDULE                                                                                                                                                                                                                                                                                     |   |                  |              |      |       |       |      |              |                  |   |     |  |
| CKT                                                                                                                                                                                                                                                                                                                                                                                                                                         |   | LOAD DESCRIPTION | WIRE/CONDUIT | KVA  | C/B   | C/B   | KVA  | WIRE/CONDUIT | LOAD DESCRIPTION |   | CKT |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | PANEL 'LA'       | (g)          | 90.0 | 600/2 | 600/2 | 90.0 | (g)          | PANEL 'LB'       | E | 2   |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 4   |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | PANEL 'LC'       | (g)          | 90.0 | 600/2 | 225/2 | --   | --           | SPARE            | S | 6   |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 8   |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                           | S | SPARE            | --           | --   | 100/2 | 100/2 | --   | --           | SPARE            | S | 10  |  |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                | " | 12  |  |
| <b>ELECTRICAL LOAD CALCULATIONS:</b><br>CONNECTED LOAD<br>LIGHTING = 0.0 KVA<br>RECEPTACLE = 0.0 KVA<br>EQUIPMENT = 270.0 KVA<br>KITCHEN = 0.0 KVA<br>SPARES = 0.0 KVA<br>TOTAL = 270.0 KVA<br>DEMAND FACTOR<br>X 1.25<br>NEC 220 - 14<br>X 0.5 (NEC 551.73)<br>X 0.5<br>DEMAND LOAD<br>= 0.0 KVA<br>= 0.0 KVA<br>= 270.0 KVA<br>= 0.0 KVA<br>= 270.0 KVA<br>REMARKS:<br>TOTAL 1125 AMPS                                                    |   |                  |              |      |       |       |      |              |                  |   |     |  |

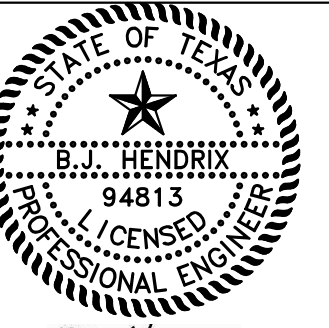
| CIRCUIT BREAKER PANELBOARD ' LA '                                                                                                                                                                                                                                                                                                                                                                                                           |   |                  |              |      |       |       |      |              |                    |   |     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------|--------------|------|-------|-------|------|--------------|--------------------|---|-----|--|
| WILCO EXPO RV PARK                                                                                                                                                                                                                                                                                                                                                                                                                          |   |                  |              |      |       |       |      |              |                    |   |     |  |
| <b>STANDARD NOTES:</b><br>1. PROVIDE BALANCED LOAD ON EACH PHASE. CIRCUIT NUMBERS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY.<br>2. REFERENCE BRANCH CIRCUIT WIRE AND CONDUIT SCHEDULE.                                                                                                                                                                                                                                                       |   |                  |              |      |       |       |      |              |                    |   |     |  |
| <b>NOTES: (THESE ITEMS APPLY ONLY WHERE SPECIFIED BELOW)</b><br>(a) REFERENCE SPLIT SYSTEM / ROOFTOP ELECTRICAL CONNECTION SCHEDULE.<br>(b) REFERENCE TRANSFORMER SCHEDULE.<br>(c) REFERENCE FAN POWERED BOX / VAV CONNECTION SCHEDULE.<br>(d) PROVIDE WITH SHUNT TRIP BREAKER.<br>(e) PROVIDE WITH 200% NEUTRAL BUS AND WIRE.<br>(f) PROVIDE PANEL EXTENSION WITH PHASE MONITORING PROTECTION.<br>(g) REFERENCE ASSOCIATED PANEL SCHEDULE. |   |                  |              |      |       |       |      |              |                    |   |     |  |
| 120/240 VOLT, 1 PHASE, 3 WIRE, 600 A, MCB, KA, RMS SYM.<br>SURFACE MOUNTED, NEMA 3R ENCLOSURE, S/N<br>FEEDER: REFERENCE PANELBOARD CONNECTION SCHEDULE                                                                                                                                                                                                                                                                                      |   |                  |              |      |       |       |      |              |                    |   |     |  |
| CKT                                                                                                                                                                                                                                                                                                                                                                                                                                         |   | LOAD DESCRIPTION | WIRE/CONDUIT | KVA  | C/B   | C/B   | KVA  | WIRE/CONDUIT | LOAD DESCRIPTION   |   | CKT |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE            | E | 2   |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 4   |  |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE            | E | 6   |  |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                           | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 8   |  |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                           | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10   | 40           | RV SITE            | E | 10  |  |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 12  |  |
| 13                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE            | E | 14  |  |
| 15                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 16  |  |
| 17                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE            | E | 18  |  |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 20  |  |
| 21                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE            | E | 22  |  |
| 23                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 24  |  |
| 25                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE            | E | 26  |  |
| 27                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 28  |  |
| 29                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 100/2 | 10.0 | 40           | RV SITE            | E | 30  |  |
| 31                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 32  |  |
| 33                                                                                                                                                                                                                                                                                                                                                                                                                                          | E | RV SITE          | 40           | 10.0 | 100/2 | 20/2  | --   | --           | FUTURE SITE SIGN   | S | 34  |  |
| 35                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 36  |  |
| 37                                                                                                                                                                                                                                                                                                                                                                                                                                          | S | SPARE            | --           | --   | 100/2 | 100/2 | --   | --           | SPARE              | S | 38  |  |
| 39                                                                                                                                                                                                                                                                                                                                                                                                                                          | " | "                | --           | --   | --    | --    | --   | --           | "                  | " | 40  |  |
| 41                                                                                                                                                                                                                                                                                                                                                                                                                                          | L | SITE LIGHTING    | 9            | 1.2  | 20/1  | 20/1  | 0.5  | 2            | LIGHTING TIMECLOCK | E | 42  |  |
| <b>ELECTRICAL LOAD CALCULATIONS:</b><br>CONNECTED LOAD<br>LIGHTING = 0.0 KVA<br>RECEPTACLE = 0.0 KVA<br>EQUIPMENT = 170.0 KVA<br>KITCHEN = 0.0 KVA<br>SPARES = 0.0 KVA<br>TOTAL = 171.7 KVA<br>DEMAND FACTOR<br>X 1.25<br>NEC 220 - 14<br>X 0.3 (NEC 551.73)<br>X 0.5<br>DEMAND LOAD<br>= 0.0 KVA<br>= 0.0 KVA<br>= 85.3 KVA<br>= 0.0 KVA<br>= 86.8 KVA<br>REMARKS:<br>TOTAL 361 AMPS                                                       |   |                  |              |      |       |       |      |              |                    |   |     |  |

Expo Center RV Park  
210 Carlos Parker Blvd.  
Taylor, Texas 76574



**WILLIAMSON**  
COUNTY  
1848

| Revision |      | Description |  |  |  |  |  |
|----------|------|-------------|--|--|--|--|--|
| No.      | Date |             |  |  |  |  |  |
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|          |      |             |  |  |  |  |  |



*B.J. Hendrix*

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY B.J. HENDRIX, P.E. NO. 94813 ON 12/04/2017

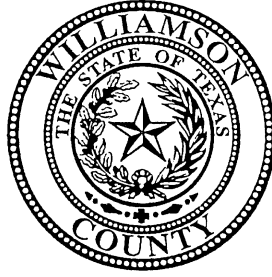
REFERENCE GENERAL NOTES ON SHEETS M501, P501 AND E501 FOR ADDITIONAL INFORMATION.



This document, the ideas and designs incorporated herein are and shall remain the property of

Williamson County Expo Center RV Park  
Bid Schedule

| Item No.                                   | Spec. No. | Quantity | Unit | Description<br>(with unit price in words)                                                                | Unit Price | Total Price |
|--------------------------------------------|-----------|----------|------|----------------------------------------------------------------------------------------------------------|------------|-------------|
| BASE BID SCHEDULE 100 - GENERAL SITE CIVIL |           |          |      |                                                                                                          |            |             |
| Site General                               |           |          |      |                                                                                                          |            |             |
| 100.01                                     |           | 1        | LS   | Mobilization                                                                                             | \$         | \$          |
| 100.02                                     |           | 4        | MO   | Traffic Control                                                                                          | \$         | \$          |
| 100.03                                     |           | 1        | LS   | SWPPP Preparation and Compliance                                                                         | \$         | \$          |
| Erosion/Sedimentation Control              |           |          |      |                                                                                                          |            |             |
| 100.04                                     |           | 2,287    | LF   | Silt Fence                                                                                               | \$         | \$          |
| 100.05                                     |           | 12       | CY   | Stabilized Construction Entrance                                                                         | \$         | \$          |
| Site Paving & Earthwork                    |           |          |      |                                                                                                          |            |             |
| 100.06                                     |           | 1        | LS   | Site Prep                                                                                                | \$         | \$          |
| 100.07                                     |           | 310      | LF   | Remove Existing Curb & Gutter                                                                            | \$         | \$          |
| 100.08                                     |           | 9,458    | CY   | Embankment "General" (Final) (ORD COMP) (TY B)                                                           | \$         | \$          |
| 100.09                                     |           | 2,100    | LF   | Curb (Ribbon)                                                                                            | \$         | \$          |
| 100.10                                     |           | 8,325    | LF   | Curb (Roll)                                                                                              | \$         | \$          |
| 100.11                                     |           | 1,374    | TON  | HMAC, Type D (2") - Parking Lot                                                                          | \$         | \$          |
| 100.12                                     |           | 3,679    | GAL  | Prime Coat                                                                                               | \$         | \$          |
| 100.13                                     |           | 4,192    | CY   | Limestone Base (10") - Parking Lot (Type A, Grade 4) (WilCO Item 247)                                    | \$         | \$          |
| 100.14                                     |           | 4,975    | CY   | Embankment "Select" (Final) (Dens Cont) (TY C1)                                                          | \$         | \$          |
| Site Utilities                             |           |          |      |                                                                                                          |            |             |
| 100.15                                     |           | 1,485    | LF   | 8-In PVC Water C-900                                                                                     | \$         | \$          |
| 100.16                                     |           | 1,377    | LF   | 8-In PVC Sewer SDR-26 ASTM D3034                                                                         | \$         | \$          |
| 100.17                                     |           | 40       | LF   | 8-In PVC Sewer SDR-26 ASTM D2241                                                                         | \$         | \$          |
| 100.18                                     |           | 271      | LF   | 6-In PVC Sewer SDR-26 D3034                                                                              | \$         | \$          |
| 100.19                                     |           | 10       | LF   | 6-In D.I. Pipe                                                                                           | \$         | \$          |
| 100.20                                     |           | 18       | CY   | Concrete Encasement                                                                                      | \$         | \$          |
| 100.21                                     |           | 40       | LF   | 18-In Steel Encasement                                                                                   | \$         | \$          |
| 100.22                                     |           | 3        | EA   | 4-FT Dia. Pre-Cast WW MH                                                                                 | \$         | \$          |
| 100.23                                     |           | 1        | EA   | 5-FT Dia. Pre-Cast WW MH                                                                                 | \$         | \$          |
| 100.24                                     |           | 1        | EA   | Fire Hydrant Assembly                                                                                    | \$         | \$          |
| 100.25                                     |           | 3        | EA   | Water Service Connection (SNGL)                                                                          | \$         | \$          |
| 100.26                                     |           | 24       | EA   | Water Service Connection (DBL)                                                                           | \$         | \$          |
| 100.27                                     |           | 23       | EA   | Sewer Service (SNGL)                                                                                     | \$         | \$          |
| 100.28                                     |           | 1        | EA   | Back Flow Prevention Device Assembly (RPZ)                                                               | \$         | \$          |
| 100.29                                     |           | 2        | EA   | Locking Dumpstation Lid                                                                                  | \$         | \$          |
| 100.30                                     |           | 2        | EA   | Yard Hydrant (at Dumpstation)                                                                            | \$         | \$          |
| 100.31                                     |           | 8        | EA   | Bollard                                                                                                  | \$         | \$          |
| 100.32                                     |           | 66       | SY   | Concrete Paving (5") - Dumpstation Island                                                                | \$         | \$          |
| Site Drainage                              |           |          |      |                                                                                                          |            |             |
| 100.33                                     |           | 550      | LF   | 18" RCP - Parking Lot                                                                                    | \$         | \$          |
| 100.34                                     |           | 2        | EA   | 18" RCP Set (3:1) - Parking Lot                                                                          | \$         | \$          |
| 100.35                                     |           | 2        | EA   | 18" RCP Set (4:1) - Parking Lot                                                                          | \$         | \$          |
| 100.36                                     |           | 70       | LF   | Cast-in-place Trench Drain                                                                               | \$         | \$          |
| 100.37                                     |           | 9        | CY   | Concrete Pilot Channel                                                                                   | \$         | \$          |
| 100.38                                     |           | 60       | CY   | Concrete Trickle Channel                                                                                 | \$         | \$          |
| 100.39                                     |           | 8        | CY   | Hidden Flume Structure                                                                                   | \$         | \$          |
| 100.40                                     |           | 19       | CY   | 4" Concrete Riprap                                                                                       | \$         | \$          |
| Road Improvments                           |           |          |      |                                                                                                          |            |             |
| 100.41                                     |           | 3        | STA  | Prep ROW                                                                                                 | \$         | \$          |
| 100.42                                     |           | 546      | LF   | Ribbon Curb - Road                                                                                       | \$         | \$          |
| 100.43                                     |           | 151      | TON  | HMAC, Type D (3") - Road                                                                                 | \$         | \$          |
| 100.44                                     |           | 275      | GAL  | Prime Coat                                                                                               | \$         | \$          |
| 100.45                                     |           | 465      | CY   | Limestone Base (15") - Road                                                                              | \$         | \$          |
| 100.46                                     |           | 372      | CY   | Embankment "SELECT" (Final) (Dens Cont) (TY C)                                                           | \$         | \$          |
| 100.47                                     |           | 392      | CY   | Embankment "GENERAL" (Final) (Dens Cont) (TY C)                                                          | \$         | \$          |
| 100.48                                     |           | 156      | LF   | 5' x 2' RCBC - Road                                                                                      | \$         | \$          |
| 100.49                                     |           | 6        | EA   | 5' x 2' RCBC Set (6:1) - Road                                                                            | \$         | \$          |
| 100.50                                     |           | 55       | LF   | Rock Filter Dam                                                                                          | \$         | \$          |
| 100.51                                     |           | 450      | LF   | REFL PAV MRK-TY I (24")                                                                                  | \$         | \$          |
| 100.52                                     |           | 9        | EA   | REFL PAV MRK (Arrow)                                                                                     | \$         | \$          |
| 100.53                                     |           | 145      | LF   | REF PAV MRK-TY I (24") Stop Bar                                                                          | \$         | \$          |
| 100.54                                     |           | 270      | LF   | REF PAV MRK-TY I (4") Solid White Striping                                                               | \$         | \$          |
| 100.55                                     |           | 15       | EA   | Small Sign Assembly                                                                                      | \$         | \$          |
| Trail Improvments                          |           |          |      |                                                                                                          |            |             |
| 100.56                                     |           | 525      | SY   | Concrete Paving (5") - Trail                                                                             | \$         | \$          |
| 100.57                                     |           | 88       | CY   | Limestone Base (6") (Type A, Grade 4) (WilCO Item 247) - Trail                                           | \$         | \$          |
| 100.58                                     |           | 479      | SY   | Crushed Granite (3") - Trail place 5" and compact to 3"                                                  | \$         | \$          |
| 100.59                                     |           | 1,004    | SY   | Moisture CMP Sub (6") - Trail                                                                            | \$         | \$          |
| 100.60                                     |           | 12       | EA   | Curb Ramp - Trail                                                                                        | \$         | \$          |
| 100.61                                     |           | 12       | LF   | Rail - Pedestrian                                                                                        | \$         | \$          |
| Site Electrical                            |           |          |      |                                                                                                          |            |             |
| 100.62                                     |           | 51       | EA   | RV Pedestals (with dual water service, shut-off valve, reinf. concrete pad with anchor bolts per detail) | \$         | \$          |
| 100.63                                     |           | 3        | EA   | Site Pole Lights                                                                                         | \$         | \$          |
| 100.64                                     |           | 1        | LS   | Electric Gear                                                                                            | \$         | \$          |
| 100.65                                     |           | 1        | LS   | Wire/Conduit - Including Primary Option 3A - Ref. Site Plan Keynote 3A                                   | \$         | \$          |
| Fencing/Amenities                          |           |          |      |                                                                                                          |            |             |
| 100.67                                     |           | 1        | EA   | Temporary Acknowledgement Sign                                                                           | \$         | \$          |
| 100.68                                     |           | 1        | EA   | Permanant Acknowledgement Sign (sign panel provided by owner, pedestal by contractor)                    | \$         | \$          |
| 100.66                                     |           | 4,846    | SY   | Decomposed Granite Island at RV Spaces (5" wet compact to 3", 5" Crushed limestone base)                 | \$         | \$          |
| 100.69                                     |           | 260      | LF   | Fencing (Priefert 3-Rail)                                                                                | \$         | \$          |
| 100.70                                     |           | 2        | EA   | Cable Gate (w/ Reflectors)                                                                               | \$         | \$          |
| 100.71                                     |           | 15,700   | SY   | Reveg - Native Grass Seed Hydromulch (Includes temporary irrigation for establishment)                   | \$         | \$          |
| SUBTOTAL SCHEDULE NO. 100:                 |           |          |      |                                                                                                          |            |             |
| TOTAL BASE BID SCHEDULES NO. 100:          |           |          |      |                                                                                                          |            |             |
| Alternate Bid Items                        |           |          |      |                                                                                                          |            |             |
| A1.0                                       |           | 1        | LS   | Primary Conduit - Option 3B - Ref. Site Plan Keynote 3B                                                  | \$         | \$          |



**AGREEMENT  
BETWEEN OWNER AND CONTRACTOR**

The **Owner:** Williamson County  
710 Main Street, Ste. 101  
Georgetown, Texas 78626

and **Contractor**

[REDACTED]  
[REDACTED]  
[REDACTED]

for the **Project:**

[REDACTED]  
[REDACTED]  
[REDACTED]

**Architect:**

[REDACTED]  
[REDACTED]  
[REDACTED]

**AGREEMENT**, this Agreement Between Owner and Contractor (hereinafter called "Agreement") is entered into effective as of the date indicated herein below and all attachments (the "Effective Date"), by and between Williamson County a political subdivision of the State of Texas (hereinafter called the "Owner") and [REDACTED] (hereinafter called "Contractor").

**WHEREAS**, the Owner desires to retain a Contractor for the [REDACTED] (hereinafter called the "Project"),

**WHEREAS**, the Owner desires a Contractor who will render, diligently and competently in accordance with the highest standards used in the profession, all Contractor services which shall be necessary or advisable for the expeditious, economical and satisfactory completion of the Project, and



**NOW, THEREFORE,** in consideration of the mutual undertakings herein contained, the parties hereto agree as follows:

## **ARTICLE 1     SCOPE OF WORK**

The Contractor has overall responsibility for and shall provide complete construction services and furnish all materials, equipment, tools and labor as necessary or reasonably inferable to complete the Work, or any phase of the Work, in accordance with the Specifications and Drawings for the Project and the Owner's requirements. The Specifications and Drawings were prepared for Williamson County by the Architect. The Contractor shall do everything required by the Contract Documents.

## **ARTICLE 2             CONTRACT DOCUMENTS**

**2.1**     The Contract Documents consist of the following, which are incorporated by reference for all purposes:

- a. This Agreement and all exhibits and attachments listed, contained or referenced in this Agreement;
- b. The Uniform General Conditions for Williamson County ("General Conditions");
- c. The Supplementary or Special Conditions, if any;
- d. All Addenda issued prior to the Effective Date of this Agreement;
- e. The Bid/Proposal Documents as defined by the Invitation for Bidders/Request for Proposals;
- f. All Change Orders issued after the Effective Date of this Agreement;
- g. Minimum Insurance Coverages and Minimum Coverage Amounts, which is attached here to as **Exhibit 1**; and
- h. The Drawings, Specifications, details and other documents developed by Architect to describe the Project and accepted by Owner, which are attached hereto **Exhibit 2**.

**2.2**     The Contract Documents form the entire and integrated Contract and Agreement between Owner and Contractor and supersede all prior negotiations, representations or agreements, written or oral. Contractor acknowledges receipt of all Contract Documents as of the date of its execution hereof.

**2.3**     The term "Contractor" shall be interchangeable with the terms "Proposer," "Bidder," "Respondent" and "General Contractor" or other similar terms as appropriate in the Contract Documents.

## **ARTICLE 3             CONTRACT TIME**

The Owner shall provide a Notice to Proceed in which a date for commencement of the work shall be started. The Contractor shall achieve Substantial Completion of the Work within [REDACTED] ( [REDACTED] ) calendar days after such commencement date, as such completion date may be extended by approved Change

Orders. Unless otherwise specified in writing, Contractor shall achieve Final Completion within [REDACTED] ( [REDACTED] ) calendar days of Substantial Completion. The time set forth for completion of the work is an essential element of the Contract.

#### **ARTICLE 4                      CONTRACTOR REPRESENTATIONS**

**4.1**                      In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

- A.           Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bid/Proposal Documents.
- B.           Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C.           Contractor is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the Work.
- D.           Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- E.           Based on the information and observations referred to in Paragraph 4.1.D above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F.           Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.



- p. 177

the allowed markup will be allowed only on the net addition. The allowed markup shall cover all overhead expenses and profit of any kind relating to the specific change.

## **ARTICLE 6            TIME**

**6.1    TIME LIMITS STATED IN THE CONTRACT DOCUMENTS ARE OF THE ESSENCE OF THIS AGREEMENT.**

**6.2**    Unless otherwise approved in writing, the Owner and the Contractor shall perform their respective obligations under the Contract Documents as expeditiously as is consistent with reasonable skill and care and the orderly progress of the Work.

**6.3    Liquidated Damages.** Contractor and Owner recognize that time is of the essence and that Owner will suffer financial loss if the Work is not completed within the times specified in Article 3 above, plus any extensions thereof allowed in accordance with the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, for each consecutive calendar day after the date of Substantial Completion that the Work is not substantially completed, the Owner may deduct the amount of:

**Five Hundred Dollars per calendar day (\$500.00/calendar day)**

from any money due or that becomes due the Contractor, not as a penalty but as liquidated damages representing the parties' estimate at the time of contract execution of the damages that the Owner will sustain for late completion. The parties stipulate and agree that calculating Owner's actual damages for late completion of the Project would be impractical, unduly burdensome, and cause unnecessary delay and that the amounts of daily liquidated damages set forth are reasonable. Contractor expressly agrees that the amounts of daily liquidated damages are a reasonable forecast of the actual damages Owner will incur due to any such delay.

## **ARTICLE 7            NOTICES**

Notices of claims, disputes or other legal notices shall be in writing and shall be deemed to have been given when delivered in person to the representative of the Contractor or Owner for whom it is intended, as set out below or sent by U. S. Mail to the representative of the Contractor or Owner for whom it is intended, as set out below. Mail notices are deemed effective upon receipt or on the third business day after the date of mailing, whichever is sooner.

If to Owner:

Williamson County Judge  
710 Main Street, Ste. 101  
Georgetown, Texas 78626

with copy to:

Hal C. Hawes  
General Counsel to the  
Williamson County Commissioners Court  
710 Main Street, Suite 102  
Georgetown, Texas 78626

If to Contractor:

[REDACTED]  
[REDACTED]  
[REDACTED]

The parties may make reasonable changes in the person or place designated for receipt of notices upon advance written notice to the other party.

## **ARTICLE 8 PARTY REPRESENTATIVES**

The Owner's Designated Representative (sometimes referred to as the "ODR") authorized to act in the Owner's behalf with respect to the Project is:

[REDACTED]  
[REDACTED]  
[REDACTED]  
Phone (512) [REDACTED]  
Fax (512) [REDACTED]

The Contractor's designated representative authorized to act on the Contractor's behalf and bind the Contractor with respect to the Project is:

[REDACTED]  
[REDACTED]  
[REDACTED]  
Phone (512) [REDACTED]  
Fax (512) [REDACTED]

The parties may make reasonable changes in their designated representatives upon advance written notice to the other party.

## **ARTICLE 9 ENTIRE AGREEMENT**

This Agreement supersedes all prior agreements, written or oral, between Contractor and Owner and shall constitute the entire agreement and understanding between the parties with respect to the Project. This Agreement and the terms of the Contact Documents shall

be binding upon the parties and may not be waived, modified, amended or altered except by a writing signed by Contractor and Owner.

BY SIGNING BELOW, the Parties have executed and bound themselves to this Agreement to be effective as of the date of the last party's execution below (the "Effective Date").

WILLIAMSON COUNTY  
Williamson County, Texas,

\_\_\_\_\_, a  
Texas \_\_\_\_\_,

By: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_, 20\_\_\_\_

Date: \_\_\_\_\_, 20\_\_\_\_

**EXHIBIT 1**

**Minimum Insurance Coverages  
and  
Minimum Coverage Amounts**

- A. All policies of insurance provided by the Contractor must comply with the requirements of this Exhibit, the Contract Documents and the laws of the State of Texas.
- B. The Contractor shall provide and maintain, until the Work covered in the Agreement Between Owner and Contractor is completed and accepted by the Owner, the minimum insurance coverages in the minimum amounts as described below. Coverage shall be written on an occurrence basis by companies authorized and admitted to do business in the State of Texas and rated A- or better by A.M. Best Company, or otherwise acceptable to Owner.

|    | Type of Coverage                                                                                                                                                           | Limits of Liability       |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1. | Worker's Compensation                                                                                                                                                      | Statutory                 |
| 2. | Employer's Liability                                                                                                                                                       |                           |
|    | Bodily Injury by Accident                                                                                                                                                  | \$500,000 Ea. Accident    |
|    | Bodily Injury by Disease                                                                                                                                                   | \$500,000 Ea. Employee    |
|    | Bodily Injury by Disease                                                                                                                                                   | \$500,000 Policy Limit    |
| 3. | Comprehensive general liability including completed operations and contractual liability insurance for bodily injury, death, or property damages in the following amounts: |                           |
|    | COVERAGE                                                                                                                                                                   | PER OCCURRENCE            |
|    | Comprehensive General Liability (including premises, completed operations and contractual)                                                                                 | \$1,000,000               |
|    | Aggregate policy limits:                                                                                                                                                   | \$2,000,000               |
| 4. | Comprehensive automobile and auto liability insurance (covering owned, hired, leased and non-owned vehicles):                                                              |                           |
|    | COVERAGE                                                                                                                                                                   | PER PERSON PER OCCURRENCE |
|    | Bodily injury (including death)                                                                                                                                            | \$1,000,000 \$1,000,000   |

|                 |             |             |
|-----------------|-------------|-------------|
| Property damage | \$1,000,000 | \$1,000,000 |
|-----------------|-------------|-------------|

|                         |                    |
|-------------------------|--------------------|
| Aggregate policy limits | No aggregate limit |
|-------------------------|--------------------|

5. Builder's Risk Insurance (all risks)

An all risk policy, in the amount equal at all times to 100% of the Contract Price or Contract Sum. The policy shall be issued in the name of the Contractor and shall name its Subcontractors as additional insureds. The Owner shall be named as a loss payee on the policy. The builders risk policy shall have endorsements as follow:

a. This insurance shall be specific as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises. If off-site storage is permitted, coverage shall include transit and storage in an amount sufficient to protect property being transported or stored.

b. This insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, caused by certified acts of terrorism as defined in the Terrorism Risk Insurance Act, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss as well as coverage for building materials while in transit or building materials suitably stored at a temporary location. Property insurance provided by the Contractor shall not cover any tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring, and other similar items commonly referred to as construction equipment that may be on the site and the capital value of which is not included in the Work. The Contractor shall make its own arrangements for any insurance it may require on such construction equipment. Any such policy obtained by the Contractor under this section shall include a waiver of subrogation in accordance with the requirements of Section 11.3.4 of the General Conditions.

C. For renovation projects and or portions of work contained within an existing structure, the Owner waives subrogation for damage by fire to existing building structure(s), if the Builder's Risk Policy has been endorsed to include coverage for existing building structure(s) in the amount described in the Special Conditions. However, Contractor shall not be required to obtain such an endorsement unless specifically required by the



Special Conditions in the Contract Documents. The aforementioned waiver of subrogation shall not be effective unless such endorsement is obtained.

6. Flood insurance when specified in Supplementary General Conditions or Special Conditions.
7. Umbrella coverage in the amount of not less than \$5,000,000.

C. Workers' Compensation Insurance Coverage:

a. Definitions:

(1) Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Workers' Compensation Commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the Project.

(2) Duration of the Project - includes the time from the beginning of the work on the Project until the Contractor's/person's work on the Project has been completed and accepted by the Owner.

(3) Coverage – Workers' compensation insurance meeting the statutory requirements of the Texas Labor Code, §401.011(44).

(4) Persons providing services on the Project ("subcontractor") - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the Project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the Project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the Project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- b. The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, §401.011(44) for all employees of the Contractor providing services on the Project, for the duration of the Project.
- c. The Contractor must provide a certificate of coverage prior to execution of the Agreement Between Owner and Contractor, and in no event later than ten (10)

days from Notice of Award. Failure to provide the insurance in a timely fashion may result in loss of Contractor's bid bond.

- d. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the Project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the Owner showing that coverage has been extended.
- e. The Contractor shall obtain from each person providing services on a project, and provide to the Owner:
  - (1) a certificate of coverage, prior to that person beginning work on the Project, so the Owner will have on file certificates of coverage showing coverage for all persons providing services on the Project; and
  - (2) no later than seven days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project.
- f. The Contractor shall retain all required certificates of coverage for the duration of the Project and for one year thereafter.
- g. The Contractor shall notify the Owner in writing by certified mail or personal delivery, within 10 days after the Contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project.
- h. The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the Project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- i. The Contractor shall contractually require each person with who it contracts to provide services on a project, to:
  - (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas labor Code, Section 401.011(44) for all of its employees providing services on the Project, for the duration of the Project;
  - (2) provide to the Contractor, prior to that person beginning work on the Project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the Project, for the duration of the Project;
  - (3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;

(4) obtain from each other person with whom it contracts, and provide to the Contractor:

- a. a certificate of coverage, prior to the other person beginning work on the Project; and
- b. a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the Project;

(5) retain all required certificate of coverage on file for the duration of the Project and for one year thereafter;

(6) notify the Owner in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project; and

(7) contractually require each person with whom it contracts, to perform as required by paragraphs (1)-(7), with the certificates of coverage to be provided to the person for whom they are providing services.

- j. By signing the Agreement Between Owner and Contractor or providing or causing to be provided a certificate of coverage, the Contractor is representing to the Owner that all employees of the Contractor who will provide services on the Project will be covered by workers' compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
  - k. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the Owner to declare the Agreement Between Owner and Contractor void if the Contractor does not remedy the breach within ten days after receipt of notice of breach from the Owner.
- D. If insurance policies are not written for the amounts specified in this Exhibit, Contractor shall carry Umbrella or Excess Liability Insurance for any differences in amounts specified. If Excess Liability Insurance is provided, it shall follow the form of primary coverage.
- E. The furnishing of the above listed insurance coverage, as may be modified by the Contract Documents, must be tendered prior to execution of the Agreement Between Owner and Contractor, and in no event later than ten (10) days from Notice of Award. Failure to provide the insurance in a timely fashion may result in loss of Contractor's bid bond.

- F. Owner shall be entitled, upon request and without expense, to receive copies of the policies and all endorsements as they apply to the limits set out in this Exhibit.
- G. Contractor shall be responsible for payment of premiums for all of the insurance coverages required under this Exhibit. Contractor further agrees that for each claim, suit or action made against insurance provided hereunder, with respect to all matters for which the Contractor is responsible hereunder, Contractor shall be solely responsible for all deductibles and self-insured retentions. Any deductibles or self-insured retentions over **\$75,000** in the Contractor's insurance must be declared and approved in writing by Owner in advance.

**EXHIBIT 2 –DRAWINGS AND SPECIFICATIONS****FOR****LIST OF DRAWINGS**DWG DRAWING TITLEISSUE DATE

TABLE OF CONTENTS  
For  
TECHNICAL SPECIFICATION SECTIONS

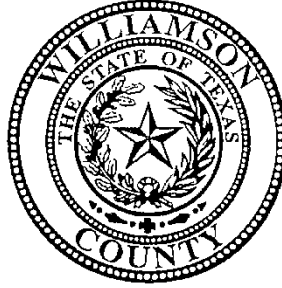
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DIVISION 1

END OF TECHNICAL SPECIFICATIONS





UNIFORM GENERAL CONDITIONS  
FOR WILLIAMSON COUNTY

TABLE OF ARTICLES

|    |                                                  |
|----|--------------------------------------------------|
| 1  | GENERAL PROVISIONS                               |
| 2  | OWNER                                            |
| 3  | CONTRACTOR                                       |
| 4  | ARCHITECT                                        |
| 5  | SUBCONTRACTORS                                   |
| 6  | CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS |
| 7  | CHANGES IN THE WORK                              |
| 8  | TIME                                             |
| 9  | PAYMENTS AND COMPLETION                          |
| 10 | PROTECTION OF PERSONS AND PROPERTY               |
| 11 | INSURANCE AND BONDS                              |
| 12 | UNCOVERING AND CORRECTION OF WORK                |
| 13 | MISCELLANEOUS PROVISIONS                         |
| 14 | TERMINATION OR SUSPENSION OF THE CONTRACT        |
| 15 | CLAIMS AND DISPUTES                              |

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract as revised, Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Owner or the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor.

### § 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

### § 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

### § 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

### § 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

### § 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 KNOWLEDGE: The terms "knowledge," "recognize," and "discover," their respective derivatives, and similar terms in the Contract Documents, as used in reference to the Contractor, shall be interpreted to mean that which the Contractor knows (or should know), recognizes (or should recognize), and discovers (or should discover) in exercising the care, skill, and diligence required by the Contract Documents. Analogously, the expression "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a contractor familiar with the Project and exercising the care, skill, and diligence required of the Contractor by the Contract Documents. §1.1.10 PRODUCT: Materials, systems, and equipment incorporated or to be incorporated in the Work.

§1.1.9 PROVIDE: Furnish and install and shall include, without limitation, labor, materials, equipment, transportation, services and other items required to complete the referenced tasks.

§1.1.02 FURNISH: Pay for, deliver (or receive), unload, inspect, and store products, materials, equipment, and accessories as specified while retaining care, custody and control until received for installation based on a signed receipt.

§ 1.1.11 INSTALL: Receive, unload, inspect, and store as specified while retaining care, custody and control; set or place in position, make required connections; and adjust and test as specified in the Contract Documents for satisfactory performance and operation.

### § 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes, and ordinances, the Contractor shall (i) provide the better quality or greater quantity of Work or (ii) comply with the more stringent requirement; either or both in accordance with the Owner or the Architect's

interpretation. The terms and conditions of this Section 1.2.1, however, shall not relieve the Contractor of any of the obligations set forth in the Contract Documents.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.3.1 Whenever a product is specified in accordance with a Federal Specification, an ASTM Standard, an American National Standards Institute Specification, or other Association Standard, the Contractor, if required by the Specifications or if requested by the Owner, shall present evidence from the manufacture, certifying the product complies with the particular Standard or Specification. When required by the Contract Documents, supporting data shall be submitted to substantiate compliance.

§ 1.2.3.2 Whenever a product is specified or shown by describing proprietary items, model numbers, catalog numbers, manufacturer, trade names, or similar reference, no substitutions may be made unless accepted in strict accordance with the Substitution requirements stated in the Specifications or, if no Substitution requirements are stated in the Specifications, in accordance with the requirements stated elsewhere in the Contract Documents. Where two or more products are shown or specified, the Contractor has the option to use either of those shown or specified.

#### § 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

#### § 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

#### § 1.5 USE OF DRAWINGS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights, except as provided in the Owner-Architect Agreement. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

#### § 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall establish the necessary protocols governing such transmissions in writing, unless otherwise already provided in the Agreement or the Contract Documents.

## ARTICLE 2 OWNER

### § 2.1 GENERAL

The Owner means Williamson County acting through any duly authorized representative as provided in the Agreement, and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization ("Owner's Designated Representative"). The term "Owner" means the Owner or the Owner's authorized representative.

### § 2.2 OWNER

§ 2.2.1 Appropriation of Funds by Owner. Owner believes it has sufficient funds currently available and authorized for expenditure to finance the costs of the Agreement between Owner and Contractor. Contractor understands and agrees that the Owner's payment of amounts under the Agreement between Owner and Contractor is contingent on the Owner receiving appropriations or other expenditure authority sufficient to allow the Owner, in the exercise of reasonable administrative discretion, to continue to make payments under the Agreement.

§ 2.2.2 Unless specifically stated otherwise in the Contract Documents, Contractor shall secure and pay for necessary permits, approvals, assessments, and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. Except for surveys or grade information, the Contractor shall compare the information furnished by the Owner, including, but not limited to, soil tests, with visibly observable physical conditions and the Contract Documents and, on the basis of such review, promptly report to the Owner and the Architect any known conflicts, errors or omissions. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions.

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## §2.5 EXTENT OF OWNER RIGHTS

§ 2.5.1 The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (i) granted in the Contract Documents, (ii) at law, or (iii) in equity.

§ 2.5.2 In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

## § 2.6 OWNER'S RIGHT TO RECORDS

§ 2.6.1 The Contractor's records, which shall include but not be limited to accounting records, written policies and procedures, subcontractor files (including proposals of successful bidders), original estimates, estimating work sheets, correspondence, schedules, change order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to this contract (all foregoing hereinafter referred to as "records") and shall be open to inspection and subject to audit and/or reproduction, during normal working hours, by Owner's agent or its authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the Contractor or any of his payees. Such records subject to examination shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this Contract.

§ 2.6.2 For the purpose of such audits, inspections, examinations and evaluations, the Owner's agent, or authorized representatives shall have access to said records from the effective date of this Contract for the duration of Work and until three (3) years (or longer if required by law) after the date of final payment by Owner to Contractor.

§ 2.6.3 Owner's agent or its authorized representative shall have access during normal business hours to the Contractor's facilities, shall have access to all necessary records and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with this Article 2.6. Owner's agent or authorized representative shall give auditees reasonable advance notice of intended audits.

§ 2.6.4 Contractor shall require all subcontractors, insurance agents, and material suppliers (payees) with cost plus contracts, if permitted, and not fixed price contracts to comply with the provisions of this Article by insertion of the requirements hereof in a written contract agreement between Contractor and payee. Failure to obtain such written contracts which include such provisions shall be reason to exclude some or all of the related payee's costs from amounts payable to the Contractor pursuant to this contract.

## ARTICLE 3 CONTRACTOR

### § 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative, and if these General Conditions are used in conjunction with the Agreement between Owner and Construction Manager-At-Risk, the term "Contractor" shall mean the Construction Manager.

§ 3.1.2 The Contractor shall perform the Work in strict accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

### § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. Prior to execution of the Agreement, the Contractor and each Subcontractor shall have evaluated and satisfied themselves as to the observable conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, (iv) availability and cost of materials, tools, and equipment, and (v) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site. Except as set forth in Section 10.3, the Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or the Contract Time in connection with any failure by the Contractor or any Subcontractor to have complied with the requirements of this Section 3.2.1.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Owner and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. 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 reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner. The Contractor shall verify the accuracy of elevations, dimensions, locations, and field measurements. In all cases of the interconnection of its Work with existing or other Work, the Contractor shall verify at the site all dimensions relating to such existing or other Work.

- .1 All of Contractor's work shall conform to the Contract Documents. Contractor shall be responsible for the details of the Work necessary to carry out the intent of the drawings and specifications, or which are customarily performed. When more detailed information is required for performance of the Work or when an interpretation of the Contract Documents is requested, the Contractor shall submit a written request for information to the Architect or Owner (as required), and the Owner or Architect shall furnish such information or interpretation. Where only part of the Work is indicated, similar parts shall be considered repetitive. Where any detail is shown and components thereof are fully described, similar details not fully described shall be considered to incorporate the fully described details and components.
- .2 The Contractor has had an opportunity to examine, and has carefully examined, all of the Contract Documents and Project site, and has fully acquainted itself with the scope of work, design, availability of materials, existing facilities, access, general topography, soil structure, subsurface conditions, obstructions, and all other conditions pertaining to the Work, the site of the Work, and its surrounding; that it has made necessary investigations to a full understanding of the difficulties which may be encountered in performing the Work; and that anything in any Contract Documents, or in any representations, statements, or information made or furnished by Owner or its representatives notwithstanding, Contractor will complete the Work for the compensation stated in the Agreement. In addition thereto, Contractor represents that it is fully qualified to do the Work in accordance with the terms of this Agreement in the time specified.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Owner and the Architect any nonconformity discovered by or made known to the Contractor as a request for information.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15.

### § 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.4 Inspection of the progress, quantity, or quality of the Work done by the Owner, any Owner's representative, any governmental agency, or the Architect, or any inspector, shall not relieve the Contractor of any responsibility for the compliance of the Work with the Contract Documents. The Owner or its approved representative (heretofore referred to as Owner's representative) shall have access to the worksite and all Work. No supervision or inspection by the Owner's representative, nor the authority to act nor any other actions taken by the Owner's representative shall relieve the Contractor of any of its obligations under the Contract Documents nor give rise to any duty on the part of the Owner.

### § 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.1.1 Duty to Pay Prevailing Wage Rates. The Contractor shall pay not less than the wage scale of the various classes of labor as shown on the "Prevailing Wage Schedule" provided by the Owner. The specified wage rates are minimum rates only, and are not representations that qualified labor adequate to perform the Work is available locally at the prevailing wage rates. The Owner is not bound to pay—and will not consider—any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract Documents. The "Prevailing Wage Schedule" is not a representation that quantities of qualified labor adequate to perform the Work may be found locally at the specified wage rates.



- .1 For classifications not shown, workers shall not be paid less than the wage indicated for Laborers. The Contractor shall notify each worker commencing work on the Project the worker's job classification and the established minimum wage rate required to be paid, as well as the actual amount being paid. The notice must be delivered to and signed in acknowledgement of receipt by the employee and must list both the monetary wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by Owner, competent evidence of compliance with the Texas Prevailing Wage Law shall be furnished by Contractor.
- .2 A copy of each worker wage rate notification shall be submitted to the Owner with the Application for Payment for the period during which the worker began on-site activities.

§ 3.4.1.2 Prevailing Wage Schedule. The "Prevailing Wage Schedule" shall be determined by the Owner in compliance with Chapter 2258, Texas Government Code. Should the Contractor at any time become aware that a particular skill or trade not reflected on the Owner's Prevailing Wage Schedule will be or is being employed in the Work, whether by the Contractor or by a subcontractor, the Contractor shall promptly inform the Owner and shall specify a wage rate for that skill or trade, which shall bind the Contractor.

§ 3.4.1.3 Penalty for Violation. The Contractor and any Subcontractor shall pay to the Owner a penalty of sixty dollars (\$60.00) for each worker employed for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the Prevailing Wage Schedule or any supplement thereto pursuant to §3.4.1.2. The Contractor and each Subcontractor shall keep, or cause to be kept, an accurate record showing the names and occupations of all workers employed in connection with the Work, and showing the actual per diem wages paid to each worker, which records shall be open at all reasonable hours for the inspection by the Owner.

§ 3.4.1.4 Complaints of Violations of Prevailing Wage Rates. Within 31 days of receipt of information concerning a violation of Chapter 2258 of the Texas Government Code, the Owner shall make an initial determination as to whether good cause exists to believe a violation occurred. The Owner's decision on the initial determination shall be reduced to writing and sent to the Contractor or Subcontractor against whom the violation was alleged, and to the affected worker. When a good cause finding is made, the Owner shall retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the Prevailing Wage Schedule and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

§ 3.4.1.5 Arbitration Required if Violation not Resolved. After the Owner makes its initial determination, the affected Contractor or Subcontractor and worker have 14 days in which to resolve the issue of whether a violation occurred, including the amount that should be retained by Owner or paid to the affected worker. If the Contractor or Subcontractor and affected worker reach an agreement concerning the worker's claim, the Contractor shall promptly notify the Owner in a written document signed by the worker. If the Contractor or Subcontractor and affected worker do not agree before the 15th day after the Owner's determination, the Contractor or Subcontractor and affected worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Chapter 171, Tex. Civ. Prac. & Rem. Code. The parties to the arbitration have 10 days after the expiration of the 15 days referred to above, to agree on an arbitrator; if by the 11th day there is no agreement to an arbitrator, a district court shall appoint an arbitrator on the petition of any of the parties to the arbitration.

§ 3.4.1.6 Arbitration Award. If an arbitrator determines that a violation has occurred, the arbitrator shall assess and award against the Contractor or Subcontractor the amount of penalty as provided in this Article 3.4 and the amount owed the worker. The Owner may use any amounts retained hereunder to pay the worker the amount as designated in the arbitration award. If the Owner has not retained enough from the Contractor or Subcontractor to pay the worker in accordance with the arbitration award, the worker has a right of action against the Contractor and Subcontractor as appropriate, and the surety of

either to receive the amount owed, attorneys' fees and court costs. The Contractor shall promptly furnish a copy of the arbitration award to the Owner.

§ 3.4.1.7 Prevailing Wage Retainage. Money retained pursuant to this Article 3.4 shall be used to pay the claimant or claimants the difference between the amount the worker received in wages for labor on the Project at the rate paid by the Contractor or Subcontractor and the amount the worker would have received at the general prevailing wage rate as provided by the agreement of the claimant and the Contractor or Subcontractor affected, or in the arbitrator's award. The full statutory penalty of \$60.00 per day of violation per worker shall be retained by the Owner to offset its administrative costs, pursuant to Texas Government Code §2258.023. Any retained funds in excess of these amounts shall be paid to the Contractor on the earlier of the next progress payment or final payment. Provided, however, that the Owner shall have no duty to release any funds to either the claimant or the Contractor until it has received the notices of agreement or the arbitration award as provided under §§3.4.2 and 3.4.3.

§ 3.4.1.8 No Extension of Time. If the Owner determines that good cause exists to believe a violation has occurred, the Contractor shall not be entitled to an extension of time for any delay arising directly or indirectly from of the procedures set forth in this Article 3.4.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Owner or Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. If the Contractor desires to submit an alternate product or method in lieu of what has been specified or shown in the Contract Documents, the Contractor shall comply with the Substitution requirements listed in the Specifications, or if there are no Substitution requirements listed in the Specifications, then the following provisions apply:

§ 3.4.2.1 The Contractor must submit to the Architect and the Owner (i) a full explanation of the proposed substitution and submittal of all supporting data, including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution; (ii) the adjustment, if any, in the Contract Sum, in the event the substitution is acceptable; (iii) the adjustment, if any, in the time of completion of the Contract and the construction schedule in the event the substitution is acceptable; and (v) a statement indicating Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect. Proposals for substitutions shall be to the Architect in sufficient time to allow the Architect no less than ten (10) working days for review. No substitutions will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated hereinbefore.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 The Contractor shall only employ or use labor in connection with the Work capable of working harmoniously with all trades, crafts, and any other individuals associated with the Project.

§ 3.4.5. In case the progress of the Work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of such conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive.

## § 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner: (1) that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise; (2) that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit; (3) that the Work will be done strictly in accordance with the Contract Documents; (4) that all products are installed

per the manufacturer's instructions, and in such a way that the manufacturer's warranties are preserved, including the use of a manufacturer-certified installer, if required by the manufacturer; (5) and that the Work, when finally completed, will provide a complete Project that meets the intent of the Contract Documents. The Contractor represents and warrants to the Owner that its materials and workmanship, including without limitation, construction means, methods, procedures and techniques necessary to perform the Work, use of materials, selection of equipment and requirements of product manufacturers are and shall be consistent with: (1) good and sound practices within the construction industry; (2) generally prevailing and accepted industry standards applicable to the Work; (3) requirements of any warranties applicable to the Work subject to Paragraph 3.2.3. Work, materials, or equipment not conforming to these requirements shall be considered defective, and promptly after written notification of non-conformance shall be repaired or replaced by Contractor with Work conforming to this warranty. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Owner or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.1.1 Contractor further warrants that all materials or equipment of a category or classification will be a product of the same manufacturer and such materials or equipment shall be of the same lot, batch or type and that such materials and equipment will be as specified.

§ 3.5.2 The Contractor agrees to assign to the Owner at the time of final completion of the Work any and all manufacturer's warranties relating to materials and labor used in the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties.

#### § 3.6 TAXES

State Sales and Use Taxes. Sales, use or similar taxes imposed by a governmental authority that are related to the Work and for which the Contractor is liable; provided, however, Owner is a body corporate and politic under the laws of the State of Texas and claims exemption from sales and use taxes under Texas Tax Code Ann. § 151.309, as amended, and the services and materials subject of the Agreement are being secured for use by Owner. Exemption certificates will be provided to Contractor upon request. As a precondition to the Owner reimbursing Contractor for allowable sales and use taxes, Contractor must, on its own, first attempt to use such tax exemption certificates in order to assert the exemption. In the event Contractor's efforts to use the tax exemption certificate is unsuccessful and provided that under the laws of the State of Texas an exemption from sales and use taxes is allowed, Owner will reimburse Contractor for such sales and use taxes upon Contractor providing sufficient and satisfactory documentation to the Williamson County Auditor.

#### § 3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided, the Contractor shall secure, pay for, and, as soon as practicable, furnish the Owner with copies or certificates of all permits and fees, licenses, and inspections necessary for the proper execution and completion of the Work, including, without limitation, all building permits. All connection charges, assessments, or inspection fees as may be imposed by any municipal agency or utility company are included in the Contract Sum and shall be the Contractor's responsibility.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction and damages resulting therefrom.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from

those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Owner will promptly investigate such conditions and, if the Owner determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will authorize an equitable adjustment in the Contract Sum or Contract Time, or both. If the Owner determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Owner shall promptly notify the Contractor in writing, stating the reasons. If the Contractor disputes the Owner's determination, the Contractor party may assert a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contractor shall, prior to purchasing any such materials, notify the Owner in writing of the cost and whether such cost will exceed the amount of the allowance. If Owner authorizes Contractor to proceed, after receiving the Contractor's estimate of the total cost, then the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

### § 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent or Contractor's project manager shall be as binding as if given to the Contractor. Important oral communications shall be immediately confirmed in writing.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Owner or Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Owner and Architect require additional time to review. Failure of the Owner or Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

#### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, as provided in the Agreement, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 The construction schedule shall be a detailed precedence-style critical path management ("CPM") schedule in a format satisfactory to the Owner that shall (i) provide a graphic representation of all activities and events that will occur during performance of the Work; (ii) identify each phase of construction and occupancy; and (iii) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as the "Milestone Date"). Upon review and acceptance by the Owner of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents. If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and resubmitted for acceptance. The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions as set forth in section 3.10.1 or if requested by the Owner. In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorize pursuant to a Change Order.

§ 3.10.5 In the event the Owner determines that the performance of the Work, as of a Milestone Date, has not progressed or reach the level of completion required by the Contract Documents, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment, and facilities, and (iii) other similar measures. Such measures so continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require such measures is solely for the purpose of ensuring the Contractors compliance with the construction schedule.

#### § 3.11 DOCUMENTS AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or

equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### § 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly as required by the Contract Documents. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

### § 3.16 ACCESS TO WORK

The Owner and Architect shall, at all times, have access to the Work in preparation and progress wherever located.

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.



**§ 3.18 INDEMNIFICATION**

**§ 3.18.1 INDEMNITY – OTHER THAN EMPLOYEE PERSONAL INJURY CLAIMS.** TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND, AND HOLD HARMLESS OWNER, ITS EMPLOYEES, AND ASSIGNS (THE "INDEMNIFIED PARTIES" OR "INDEMNITEES") FROM AND AGAINST CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING BUT NOT LIMITED TO ATTORNEYS' FEES, ARISING OUT OF OR ALLEGED TO BE RESULTING FROM THE PERFORMANCE OF THIS AGREEMENT, TO THE EXTENT CAUSED BY THE NEGLIGENT OR WILLFUL ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, SUB-SUBCONTRACTORS, OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THEM OR ANYONE FOR WHOSE ACTS THEY MAY BE LIABLE. CONTRACTOR SHALL NOT BE REQUIRED TO INDEMNIFY, HOLD HARMLESS OR DEFEND THE INDEMNIFIED PARTIES AGAINST A CLAIM CAUSED BY THE NEGLIGENCE OR FAULT, OR THE BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD, OR RULE OF THE INDEMNITEE, OR OTHER PARTY OTHER THAN CONTRACTOR OR ITS AGENT, EMPLOYEE, OR SUBCONTRACTOR OF ANY TIER, EXCEPT THAT CONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTIES AGAINST ANY CLAIMS FOR THE BODILY INJURY OR DEATH OF AN EMPLOYEE OF CONTRACTOR, ITS AGENTS, OR IT SUBCONTRACTORS OF ANY TIER.

**§3.18.2 INDEMNITY – EMPLOYEE PERSONAL INJURY CLAIMS.** TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND, AND HOLD HARMLESS THE INDEMNIFIED PARTIES AND SHALL ASSUME ENTIRE RESPONSIBILITY AND LIABILITY (OTHER THAN AS A RESULT OF AN INDEMNIFIED PARTY'S GROSS NEGLIGENCE) FOR ANY CLAIM OR ACTION BASED ON OR ARISING OUT OF THE PERSONAL INJURY, INCLUDING THE DEATH, OF ANY EMPLOYEE OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY SUB-SUBCONTRACTOR, OR OF ANY OTHER ENTITY FOR WHOSE ACTS THEY MAY BE LIABLE, WHICH OCCURRED OR WAS ALLEGED TO HAVE OCCURRED ON THE PROJECT SITE OR IN CONNECTION WITH THE PERFORMANCE OF THE WORK OF THIS AGREEMENT. CONTRACTOR HEREBY INDEMNIFIES THE INDEMNIFIED PARTIES EVEN TO THE EXTENT THAT SUCH PERSONAL INJURY WAS CAUSED OR ALLEGED TO HAVE BEEN CAUSED BY THE COMPARATIVE OR CONCURRENT NEGLIGENCE OF THE STRICT LIABILITY OF ANY INDEMNIFIED PARTY. THIS INDEMNIFICATION SHALL NOT BE LIMITED TO DAMAGES, COMPENSATION, OR BENEFITS PAYABLE UNDER INSURANCE POLICIES, WORKERS COMPENSATION ACTS, DISABILITY BENEFITS ACTS, OR OTHER EMPLOYEES BENEFIT ACTS.

**§3.18.3 THE CONTRACTOR'S INDEMNITY OBLIGATIONS UNDER THIS SECTION 3.18 SHALL ALSO SPECIFICALLY INCLUDE, WITHOUT LIMITATION, ALL FINES, PENALTIES, DAMAGES, LIABILITY, COSTS, EXPENSES (INCLUDING, WITHOUT LIMITATION, REASONABLE ATTORNEYS' FEES) ARISING OUT OF, OR IN CONNECTION WITH, ANY (I) VIOLATION OF OR FAILURE TO COMPLY WITH ANY LAW, STATUTE, ORDINANCE, RULE, REGULATION, CODE OR REQUIREMENT OF A PUBLIC AUTHORITY THAT BEARS UPON THE PERFORMANCE OF THE WORK BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY PERSON OR ENTITY FOR WHOM EITHER IS RESPONSIBLE, (II) MEANS, METHODS, PROCEDURES, TECHNIQUES, OR SEQUENCES OF EXECUTION OR PERFORMANCE OF THE WORK, AND (III) FAILURE TO SECURE AND PAY FOR PERMITS, FEES, APPROVALS, LICENSES, AND INSPECTIONS AS REQUIRED UNDER THE CONTRACT DOCUMENTS, OR ANY VIOLATION OF ANY PERMIT OR OTHER APPROVAL OF A PUBLIC AUTHORITY APPLICABLE TO THE WORK, BY THE CONTRACTOR, A SUBCONTRACTOR, OR ANY PERSON OR ENTITY FOR WHOM EITHER IS RESPONSIBLE.**

**ARTICLE 4 ARCHITECT****§ 4.1 GENERAL**

**§ 4.1.1** The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

#### § 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Owner-Architect Agreement. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 COMMUNICATIONS AND CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to relate relevant communications between Owner and Architect to the Architect. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 If included in Architect's scope of work, the agreement between Owner and Architect, or if requested by the Owner, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts based on the Architect's evaluations of the Contractor's Applications for Payment.

§ 4.2.6 To the extent permitted by the agreement between Owner and Architect, the Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect, in consultation with the Owner, will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Owner to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 To the extent provided in the agreement between Owner and Architect, the Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Owner and Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the

purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 If requested by Owner, the Architect will prepare Change Orders and Construction Change Directives with the Owner's prior written consent, but the Architect may authorize minor changes in the Work as provided in the agreement between Owner and Architect, or in Section 7.4 of these General Conditions. If requested by Owner, the Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 If requested by Owner, the Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 If requested by Owner, the Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents, and if approved by Owner.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 AWARD OF SUBCONTRACTS

§ 5.2.1 For Construction Manager-At-Risk Agreements. The Construction Manager shall publicly advertise for bids or proposals and receive bids or proposals from trade contractors or Subcontractors for the performance of all major elements of the work other than the minor work that may be included in the general conditions. The Construction Manager may seek to perform portions of the work itself if:

(A) the Construction Manager submits its bid or proposal for those portions of the Work in the same manner as all other trade contractors or Subcontractors; and

(B) the Owner determines that the Construction Manager's bid or proposal provides the best value for the Owner.

§ 5.2.1.1 REVIEW OF BIDS OR PROPOSALS. Construction Manager shall review all trade contractor or Subcontractor bids or proposals in a manner that does not disclose the contents of the bid or proposal during the selection process to a person not employed by the Construction Manager, Architect, Engineer, or Owner. All bids or proposals shall be made available to the Owner on request and to the public after the later of the award of the contract or the seventh day after the date of final selection of bids or proposals. If the Construction Manager reviews, evaluates, and recommends to the Owner a bid or proposal from a trade contractor or subcontractor but the Owner requires another bid or proposal to be accepted, the Owner shall compensate the Construction Manager by a change in the Contract Sum, Contract Time, or Cost of the Work for any additional cost and risk that the Construction manager incurs because of the Owner's requirement that another bid or proposal be accepted.

§ 5.2.2 The Contractor shall not contract with a proposed Subcontractor, person, or entity to whom the Owner has made reasonable objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made a reasonable objection.

§ 5.2.3 If the Owner has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time may be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity previously selected if the Owner makes reasonable objection to such substitution.

### § 5.3 SUBCONTRACTUAL RELATIONS

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.2 All subcontracts shall be in writing and, if requested, Contractor shall provide Owner with copies of executed subcontracts.

#### § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 This Contract is for Owner's benefit, its successors and assigns who, as well as Contractor, may directly enforce all rights and warranties, express or implied herein, but Subcontractors shall have recourse only against Contractor and not against Owner. Owner may rely solely upon Contractor for enforcement of all Subcontracts. To effect such purpose, Contractor assigns to Owner all right to bring any actions against subcontractors and material vendors without waiver by Owner of his right against Contractor because of defaults, delays and effects for which a subcontractor or material vendor may also be liable, said assignment being effective only if:

- .1 Contractor is in default under the Contract Documents; or
- .2 Owner has terminated the Contract in accordance with the Contract Documents; and
- .3 Only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .4 The assignment is subject to the prior rights of the surety, if any, obligated under any bond relating to the Contract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation may be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

§5.4.4 The Architect and the Owner shall have the right to request from any Subcontractor at any time during the course of construction, a notarized affidavit stating the amount of monies which have been paid to the Subcontractor as of any certain stipulated date.

#### ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

##### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

##### § 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall

connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect and the Owner apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner, separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

#### § 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and allocate the cost among those responsible.

### ARTICLE 7 CHANGES IN THE WORK

#### § 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Owner or Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work. Except as permitted in Section 7.3 and Section 9.7.2, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any Claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

#### § 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Contractor's Change Order shall set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the dates of Substantial Completion. Contractor shall furnish supporting data as reasonably requested by Owner.

§ 7.2.3 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule.

#### § 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Owner shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Owner or Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;



- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Owner or the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Owner will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Owner determines to be reasonably justified. The Owner's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of Contractor to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 MINOR CHANGES IN THE WORK

If permitted in the agreement between Owner and Architect, the Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents.

### ARTICLE 8 TIME

#### § 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

#### § 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract and are a material element of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

#### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect and Owner determines may justify delay, then the Contract Time shall be extended by Change Order to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time and if the performance of the Work is not, was not, or would not have been delayed by any other cause for which the Contractor is not entitled to an extension in the Contract Time under the Contract Documents. The Contractor further acknowledges and agrees that adjustments in the Contract Time will be permitted for a delay only to the extent such delay (i) is not caused, or could not have been anticipated, by the Contractor, and (ii) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay or reasonable likelihood that a delay will occur.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 Notwithstanding anything contained in the Contract Documents to the contrary, the Contractor's sole remedy for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity, or (4) other similar claims (collectively referred in this Subparagraph 8.3.3 as "Delay or Delays"), whether or not such Delays are foreseeable, shall be an extension of time in which to complete the Work. In no event shall the Contractor be entitled to any other compensation or recovery of any damages, costs, or attorneys' fees, caused by any Delays, unknown site conditions, errors, inconsistencies, or omissions in the Drawings and Specifications, or concealed or unknown conditions, including, without limitation, consequential damages, lost opportunity costs, impact damages or other similar damages; provided however that Contractor may be entitled to additional time as provided under Section 8.3.1.

§ 8.3.4 If the Contractor submits a progress report indicating, or otherwise expresses an intention to achieve, completion of the Work prior to any completion date required by the Contract Documents or expiration of the Contract Time, no liability of the Owner to the Contractor for any failure of the Contractor to so complete the Work shall be created or implied.

§ 8.3.5 Owner shall have the right to occupy, without prejudice to rights of either party, any completed or substantially completed portions of the Work, notwithstanding the fact that time for completion of entire Work, or portions thereof, may not be expired. Occupancy and use by Owner shall not constitute, in itself, acceptance of the Work.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### § 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Owner and Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Owner may require. This schedule, unless objected to by the Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### § 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 As provided in the Agreement and in the Contract Documents, the Contractor shall submit to the Owner and Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2., for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the

Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Owner or the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 If requested by Owner or required elsewhere in the Contract Documents, Each Application for Payment shall be accompanied by the following, all in a form and substance satisfactory to the Owner:

- (i) With each Application for Payment: a current Sworn Statement from the Contractor setting forth all Subcontractors and all material suppliers with whom the Contractor has subcontracted, the amount of each such subcontract, the amount requested for any Subcontractor or material supplier in the Application for Payment, and the amount to be paid to the Contractor from such progress payment;
- (ii) With each Application for Payment: a duly executed Conditional Waiver and Release on Progress Payment from the Contractor and Subcontractors establishing receipt of payment or satisfaction of the payment requested by the Contractor in the current Application for Payment;
- (iii) Commencing with the second Application for Payment submitted by the Contractor, a duly executed Unconditional Waiver and Release on Progress Payment from Contractor and all Subcontractors, material suppliers and, where appropriate, lower tier subcontractors that have billed more than \$5,000 on a single application of payment, establishing receipt of payment or satisfaction of payment of all amounts requested on behalf of such entities and disbursed prior to submittal by the Contractor of the current Application for Payment;
- (iv) With the Final Application for Payment: Contractor shall submit a Conditional Waiver and Release on Final Payment as required by Texas Property Code 53.284. Upon receipt of final payment, Contractor shall submit an Unconditional Waiver and Release on Final Payment as required by Texas Property Code 53.284; and
- (v) Such other information, documentation, and materials as the Owner, or the title insurer may require in order to ensure that Owner's property is free of lien claims. Such other documents may include, without limitation, original copies of lien or bond claim releases suitable for filing with the County Clerk in Williamson County, Texas.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, bond claims, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.3.3.1 The Contractor further expressly undertakes to defend Owner, at the Contractor's sole expense, against any actions, lawsuits, or proceedings brought against Owner as a result of liens filed against the Work, the site of any of the Work, the Project site and any improvements thereon, or any portion of the property of any of Owner (referred to collectively as "liens" in this Section 9.3.3), provide the Owner has paid Contractor pursuant to the requirements of the Contract Documents. The Contractor hereby agrees to indemnify and hold Owner harmless against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings.

§ 9.3.3.2 The Owner shall release any payments withheld due to a lien or bond claims if the Contractor obtains security acceptable to the Owner, however, the Contractor shall not be relieved of any responsibilities or obligations under this Section 9.3.3, including, without limitation, the duty to defend and indemnify Owner.

§ 9.3.3.3 Retainage. The Owner shall withhold from each progress payment, as retainage, five percent (5%) of the total earned amount. Retainage so withheld shall be managed in conformance with Subchapter B, Chapter 2252 of the Texas Government Code. Any request for reduction or release of retainage shall be accompanied by written consent of the Contractor's Surety. No such request shall be made until the Contractor has earned at least sixty-five percent (65%) of the total Contract Price.

§ 9.3.3.4 For purposes of Texas Government Code § 2251.021 (a)(2), the date the performance of service is completed is the date when the Owner's representative approves the Application for Payment.

#### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### § 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Owner or Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Owner or Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Owner or Architect is unable to certify payment in the amount of the Application, the Owner or Architect will notify the Contractor. If the Contractor and Architect, or Contractor and Owner, as the case may be, cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount that can be certified. The Owner or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Owner or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 failure to maintain the scheduled progress, or reasonable evidence that the Work will not be completed within the Contract Time;
- .7 failure to comply with the requirements of Texas Government Code Chapter 2258 (Prevailing Wage Law);
- .8 failure to include sufficient documentation to support the amount of payment requested for the Project;
- .9 failure to obtain, maintain, or renew insurance coverage, payment/performance bonds or warranty bond required by the Contract Documents; or
- .10 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

#### § 9.6 PROGRESS PAYMENTS

§ 9.6.1 The Owner shall make payment in the manner and within the time provided in the Contract Documents and in accordance with Chapter 2251 of the Texas Government Code.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than 10 days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.4 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2.

§ 9.6.5 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

#### § 9.7 FAILURE OF PAYMENT

§ 9.7.1 If the Architect is required to issue Certificates for Payment and, through no fault of the Contractor, the Architect fails to timely issue Certificates for Payment in the time permitted in the Contract Documents, or if the Owner does not pay the Contractor by the date established in the Contract Documents, then the Contractor may, upon twenty-one days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received.

§ 9.7.2 If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or if the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to (i) deduct

an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (ii) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

#### § 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy and any other permits, approvals, licenses, and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial occupancy of the Project.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Owner and Architect a comprehensive list of items to be completed or corrected prior to final payment (punch list). Failure to include an item on the punch list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's punch list, the Owner and Architect will examine the Work to determine whether the Work or designated portion thereof is substantially complete. If the Owner and/or Architect's examination discloses any item, whether or not included on the Contractor's punch list, that is not sufficiently complete in accordance with the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Owner or Architect. In such case, the Contractor shall then submit a request for another examination by the Owner or Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect, if required by the Contract Documents, or Owner will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Unless otherwise provided, Contractor shall complete all items on the punch list within 30 days of Substantial Completion. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage.

#### § 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5, the surety, and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld.

§ 9.9.2 Immediately prior to partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

#### § 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Owner and Architect will make such inspection and, when the Owner and Architect find the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required under or pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Architect as part of the final Application for Payment. The final Certificate for Payment will not be issued by the Architect until all warranties and guarantees have been received and accepted by the Owner.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner and Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied, within the period of time required by Chapter 2251 of the Texas Government Code, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety to final payment, (5) a warranty bond in a form acceptable to Owner, and (6) other data establishing payment or satisfaction of obligations, such as receipts, unconditional full and final releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner.

§ 9.10.3 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of warranties required by the Contract Documents.

§ 9.10.4 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

#### ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

##### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

##### § 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and



- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss. Notwithstanding any language to the contrary, the Owner shall not have any responsibility for job site inspections or safety recommendations. Any inspections or observations by the Owner or the Architect are solely for the benefit of the Owner and shall not create any duties or obligations to anyone else.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

#### § 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all covering and fully protect the Work, as necessary, from injury or damage by any cause.

§ 10.2.10 The Contractor shall promptly report in writing to the Owner and Architect all accidents arising out of or in connection with the Work that cause death, personal injury, or property damage.

#### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the

Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written notice from the Owner.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are expressly required by the Contract Documents. The Owner shall be responsible for materials or substances expressly required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site or negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

#### § 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time, if any, claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations, which coverage shall be maintained for no less than four (4) years following final payment; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Agreement or the Contract Documents. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the

period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Unless otherwise provided, copies of the insurance policies, in form acceptable to the Owner, shall be provided to Owner within 30 days of Owner's request. Except as otherwise provided, all of the policies provided shall name Owner as an additional insured, and such policies shall immediately deliver to Owner copies of all such insurance policies, together with certificates by the insurer evidencing Owner's coverage there under. Each policy of insurance obtained by Contractor pursuant to the Contract Documents shall provide, by endorsement or otherwise (i) that such policy shall not be canceled, endorsed, altered or reissued to effect a change in coverage for any reason or to any extent whatsoever unless the insurer shall have first given Owner and Lender at least thirty (30) days prior written notice thereof, and (ii) that Owner may, but shall not be obligated to, make premium payments to prevent the cancellation, endorsement, alteration or reissuance of such policy and such payments shall be accepted by the insurer to prevent the same. Such policies shall provide, by endorsement or otherwise, that Contractor shall be solely responsible for the payment of all premiums under the policies, and that Owner shall have no obligation for the payment thereof, notwithstanding that Owner is named as additional insured under the policy. Any insured loss or claim of loss shall be adjusted to the Owner, and any settlement payments shall be made payable to the Owner as a trustee for the insureds, as their interests may appear. Upon the occurrence of an insured loss or claim of loss, monies received will be held by Owner who shall make distribution in accordance with an agreement to be reached in such event between Owner and Contractor. If the parties are unable to agree between themselves on the settlement of the loss, such dispute shall be resolved in accordance with section 15, below, but the Work of the Project shall nevertheless progress during any such period of dispute without prejudice to the rights of any party to the dispute. The Contractor shall be responsible for any loss within the deductible area of the policy. If Owner is damaged by the failure of Contractor to purchase or maintain such insurance, then Contractor shall bear all costs properly attributable thereto. The Contractor shall affect and maintain similar property insurance on portions of the Work stored off the site or in transit when such portions of the Work are to be included. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until Final Completion of the Project.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

#### § 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

#### § 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided in the Contract Documents, the Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake,

flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss as well as coverage for building materials while in transit or building materials suitably stored at a temporary location. Property insurance provided by the Contractor shall not cover any tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring, and other similar items commonly referred to as construction equipment that may be on the site and the capital value of which is not included in the Work. The Contractor shall make its own arrangements for any insurance it may require on such construction equipment. Any such policy obtained by the Contractor under this Section 11.3.1 shall include a waiver of subrogation in accordance with the requirements of Section 11.3.4.

§ 11.3.1.2 If the Contractor does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Contractor shall so inform the Owner in writing prior to commencement of the Work. If the Owner is damaged by the failure or neglect of the Contractor to purchase or maintain insurance as described above, without so notifying the Owner in writing, then the Contractor shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 Contractor shall be responsible for any deductibles to the extent that the loss arose out of or was caused by Contractor's negligence or breach of the Agreement.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

#### § 11.3.4 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent of actual recovery of any insurance proceeds under any property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance. However, this waiver shall not apply to property insurance purchased by Owner after completion of the Work or Final Payment, whichever comes first. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.5 A loss insured under the property insurance shall be adjusted in good faith and made payable to the Owner in good faith for the insureds, as their interests may appear. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

#### § 11.4 BONDS

§ 11.4.1 The Contractor is required to tender to Owner, prior to commencing the Work, performance and payment bonds, as required by law. In the event Contractor fails to provide such bonds within the time

provided by the Agreement, Owner may immediately, upon notice of such failure, or within a reasonable time thereafter, at its sole option and discretion: (1) void this Agreement in its entirety; or (2) procure such bonds on behalf of the Contractor, deducting such amounts from the Contract Price. In the event Owner voids the Agreement under this section, Contractor may forfeit its bid bond.

§ 11.4.2 A Performance Bond is required if the Contract Price is in excess of \$50,000. The performance bond is solely for the protection of the Owner, in the full amount of the Contract Price and conditioned on the faithful performance of the Work in accordance with the Contract Documents. The form of the bond shall be approved by the Owner.

§ 11.4.3 A Payment Bond is required if the Contract Price is in excess of \$25,000. A payment bond is payable to the Owner, in the full amount of the Contract Price and solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the Contractor or a supplier of required materials or labor. The form of bond shall be approved by the Owner.

§ 11.4.4 Warranty Bond. Upon Substantial Completion and prior to final completion and final payment, Contractor shall provide Owner with a Warranty Bond in the sum of 10% of the Contract Price or 10% of the Guaranteed Maximum Price for Construction Manager-At-Risk Agreements for the entire warranty period set out in the Contract Documents. The form of bond shall be approved by the Owner.

§ 11.4.5 Corporate sureties authorized to issue bonds shall be qualified and comply with relevant provisions of the Texas Insurance Code.

§ 11.4.6 Each bond shall be executed by a corporate surety or sureties authorized to do business in the State of Texas and acceptable to the Owner. If any bond is for more than 10 percent of the surety's capital and surplus, the Owner may require certification that the company has reinsured the excess portion with one or more reinsurers authorized, accredited, or trusted to do business in the State. A reinsurer may not reinsure for more than 10 percent of its capital and surplus. If a surety upon a bond loses its authority to do business in the State, the Contractor shall within thirty (30) days after such loss furnish a replacement bond at no added cost to the Owner.

§ 11.4.7 Each bond shall be accompanied by a valid Power-of-Attorney (issued by the surety company and attached, signed and sealed with the corporate embossed seal, to the bond) authorizing the attorney in fact who signs the bond to commit the company to the terms of the bond, and stating any limit in the amount for which the attorney can issue a single bond.

§ 11.4.8 The process of requiring and accepting bonds and making claims thereunder shall be conducted in compliance with Chapter 2253, Texas Government Code. If for any reason a statutory payment or performance bond is not honored by the surety, the Contractor shall fully indemnify and hold the Owner harmless of and from any costs, losses, obligations or liabilities it incurs as a result.

§ 11.4.9 Owner shall furnish certified copies of a payment bond and the related Agreement between Owner and Contractor to any qualified person seeking copies who complies with §2253.026, Texas Government Code.

§ 11.4.10 Claims on Payment Bonds. Claims on payment bonds must be sent directly to the Contractor and its surety in accordance with § 2253.041, Texas Government Code. All Payment Bond claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or its surety. The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee.

§ 11.4.11 Payment Claims when Payment Bond not Required. When the value of the Agreement between Owner and the Contractor is less than \$25,000.00, claimants and their rights are governed by Texas Property Code, §§ 53.231 – 53.239. These provisions set out the requirements for filing a valid

lien on funds unpaid to the Contractor as of the time of filing the claim, actions necessary to release the lien and satisfaction of such claims.

§11.4.12 Sureties shall be listed on the Department of the Treasury's Listing of Approved Sureties stating companies holding Certificates of Authority as acceptable sureties on Federal Bonds and acceptable reinsuring companies (Department Circular 570).

#### § 11.5 GENERAL REQUIREMENTS

§ 11.5.1 Unless otherwise provided in the Contract Documents, all insurance coverage procured by the Contractor shall be provided by insurance companies having policy holder ratings no lower than "A" and financial ratings not lower than "XII" in the Best's Insurance Guide, the latest edition in effect as of the date of the Contract, and subsequently in effect at the time of renewal of any policies required by the Contract Documents.

§ 11.5.2 If the Owner is damaged by failure of the Contractor to purchase or maintain insurance required under Article 11, then the Contractor shall bear all reasonable costs (including attorneys' fees and court and settlement expenses) properly attributable thereto.

### ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

#### § 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Owner or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Owner or Architect, be uncovered for examination and be replaced at the Contractor's expense without change in the Contract Time. If prior to the date of Substantial Completion the Contractor, a Subcontractor, or anyone for whom either is responsible uses or damages any portion of the Work (other than start-up), including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

§ 12.1.2 If a portion of the Work has been covered that the Owner or Architect has not specifically requested to examine prior to its being covered, the Owner or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

#### § 12.2 CORRECTION OF WORK

§ 12.2.1 The Contractor shall promptly correct Work rejected by the Owner or Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

#### § 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so. The Owner shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may, without prejudice to any other remedies, correct it in accordance with Section 2.4 or file a claim with the surety of any applicable warranty bond.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

The Contract shall be governed by the law of Williamson County, Texas.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in the Contract Documents or by law, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

### § 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

### § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Except as expressly provided in the Contract Documents, duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval or acquiescence in a breach there under, except as may be specifically agreed in writing.

### § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful



orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority. The Contractor shall give the Owner and Architect timely notice of when and where tests and inspections are to be made so that the Owner and Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Owner and Architect of when and where tests and inspections are to be made so that the Owner and Architect may be present for such procedures.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense. The Contractor also agrees the cost of testing services related to remedial operations performed to correct deficiencies in the Work, shall be borne by the Contractor.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner and Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

#### § 13.6 INTEREST

The rate of interest that accrues on an overdue payment is the rate in effect on September 1 of the fiscal year in which the payment becomes overdue. The rate in effect on September 1 is equal to the sum of:

- (1) one percent; and
- (2) the prime rate as published in the Wall Street Journal on the first day of July of the preceding fiscal year that does not fall on a Saturday or Sunday pursuant to §2251.025 of the Texas Government Code.

#### § 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the time limits provided by law. Nothing herein shall be construed as shortening the period of time Owner has for commencing claims to less than what is required by law.

#### § 13.8 Application To Subcontracts

Any specific requirement in this Contract that the responsibilities or obligations of Contractor also apply to a Subcontractor is added for emphasis and are also hereby deemed to include a Subcontractor of any tier. The omission of a reference to a Subcontractor in connection with any of Contractor's responsibilities or obligations shall not be construed to diminish, abrogate or limit any responsibilities or obligations of a Subcontractor of any tier under the Contract Documents or the applicable subcontract.

#### § 13.10 GENERAL PROVISIONS

§ 13.10.1 All personal pronouns used in this Contract, whether used in the masculine, feminine, or neuter gender, shall include all other genders; and the singular shall include the plural and vice versa. Titles of articles, sections, and subsections are for convenience only and neither limit nor amplify the provisions of this Contract. The use herein of the word "including," when following any general statement, term, or matter, shall not be construed to limit such statement, term, or matter to the specific items or matters set

forth immediately following such word or to similar items or matters, whether or not non-limiting language (such words as "without limitation," or "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement, term, or matter.

§ 13.10.2 Wherever possible, each provision of this Agreement shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Agreement, or portion thereof, is prohibited by law or found invalid under any law, only such provision or portion thereof shall be ineffective, without in any manner invalidating or affecting the remaining provisions of this Agreement or valid portions of such provision, which are hereby deemed servable.

#### § 13.11 NO ORAL WAIVER

The Provisions of the Contract Documents shall not be changed, amended, waived, or otherwise modified in any respect except by a writing signed by Owner. No person is authorized on behalf of Owner to orally change, amend, waive, or otherwise modify the terms of the Contract Documents or any of the Contractor's duties or obligations under or arising out of the Contract Documents. Any change, waiver, approval, or consent granted to the Contractor shall be limited to the specific matters stated in the writing signed by Owner, and shall not relieve Contractor of any other of the duties and obligations under the Contract Documents. No "constructive" changes shall be allowed.

§ 13.12 Texas Public Information Act. To the extent, if any, that any provision in the Contract Documents is in conflict with Tex. Gov't Code 552.001 et seq., as amended (the "Public Information Act"), the same shall be of no force or effect. Furthermore, it is expressly understood and agreed that Owner, its officers and employees may request advice, decisions and opinions of the Attorney General of the State of Texas in regard to the application of the Public Information Act to any information or data furnished to Owner whether or not the same are available to the public. It is further understood that Owner, its officers and employees shall have the right to rely on the advice, decisions and opinions of the Attorney General, and that Owner, its officers and employees shall have no liability or obligation to Contractor for the disclosure to the public, or to any person or persons, of any software or a part thereof, or other items or data furnished to Owner by Contractor in reliance of any advice, decision or opinion of the Attorney General of the State of Texas.

§ 13.13 Equal Opportunity in Employment. The Contractor agrees that during the performance of the Agreement it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Parties 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; termination; rates of pay or other forms of compensation, and selection for training, including apprenticeship.

### ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

#### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 90 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped; or
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on an undisputed Certificate for Payment within the time stated in the Contract Documents.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon 30 days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

## § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 fails to commence the Work in accordance with the provisions of this Contract,
- .2 fails to prosecute the Work to completion thereof in a diligent, efficient, timely, workmanlike, skillful and careful manner and in strict accordance with the provisions of the Contract,
- .3 fails to use an adequate amount or quality of personnel or equipment to complete the Work without undue delay,
- .4 fails to perform any of its obligations under the Contract,
- .5 fails to make prompt payments when due to its Subcontractors and Suppliers, or as required by Texas Government Code 2251,
- .6 files any petition or other pleading seeking any relief under any provisions of the Federal Bankruptcy Act, as amended, or any other federal or state statute or law providing for reorganization of debts or other relief from creditors, permits a receiver or other person to be appointed on account of its insolvency or financial condition, or becomes insolvent,
- .7 creates any situation or state of facts which would authorize or permit an involuntary petition in bankruptcy to be filed against Contractor, or
- .8 has not met or in Owner's opinion will not meet the dates of Substantial Completion set forth in the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, in its sole and absolute discretion, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, 30 days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished. In the event that a final decision under section 15, below, is rendered that sufficient cause did not exist for termination under this section 14.2, then the termination shall be considered a termination for convenience, under section 14.4, below.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages and costs incurred by the Owner in finishing the Work and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner.

### § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

### § 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 Upon such termination, the Contractor shall recover the amounts provided in Section 10.1.3 of the Agreement.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 CLAIMS

#### § 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

#### § 15.1.2 NOTICE OF CLAIMS

Claims for events arising during the performance of the Work by Contractor must be initiated by written notice to the other party with a copy sent to the Architect; provided, however, that the claimant shall use its best efforts to furnish the other party, as expeditiously as possible, with notice of any Claim including, without limitation, those in connection with concealed or unknown conditions, once such claim is recognized, and shall take steps to mitigate the alleged or potential damages, delay, or other adverse consequences arising out of the condition that is the cause of such a Claim. Claims by Contractor must be initiated within 10 business days after occurrence of the event giving rise to such Claim or within 10 business days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims may also be reserved in writing within the time limits set forth in this Section 15.1.2. Any notice of Claim or reservation of Claim must clearly identify the alleged cause and the nature of the Claim and include data and information available to the claimant that will facilitate prompt verification and evaluation of the Claim.

#### § 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the Contract Documents.

#### § 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### § 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

#### § 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived shall be subject to mediation as a condition precedent to seeking redress in a court of competent jurisdiction.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation, which shall consist of a single mediator who is knowledgeable about the subject matter of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in Williamson County, Texas. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§15.3.4 All disputes not resolved through mediation shall be decided in litigation in Williamson County, Texas.

§ 15.3.5 No waiver of Immunity. Nothing in the Contract Documents shall be deemed to waive, modify or amend any legal defense available at law or in equity to Owner, its past or present officers, employees, or agents, nor to create any legal rights or claim on behalf of any third party. Owner does not waive, modify, or alter to any extent whatsoever the availability of the defense of governmental immunity under the laws of the State of Texas and of the United States.

## PROPOSAL AFFIDAVIT

**This form must be completed, signed, notarized and returned with Proposal package**

The undersigned attests that the company named below, under the provisions of Subtitle F, Title 10, Texas Government Code Chapter 2270:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract.

Pursuant to Section 2270.001, Texas Government Code:

1. "Boycott Israel" means 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 specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and
2. "Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit

The undersigned certifies that the RFSCP and the Respondent's Proposal have been carefully reviewed and are submitted as correct and final. Respondent further certifies and agrees to furnish any and/or all goods and/or services upon which prices are extended at the price Proposal, and upon the conditions contained in the RFSCP.

I hereby certify that the foregoing Proposal has not been prepared in collusion with any other Respondent or other person or persons engaged in the same line of business prior to the official opening of this Proposal. Further, I certify that the Respondent is not now, nor has been for the past six (6) months, directly or indirectly concerned in any pool or agreement or combination, to control the price of services/commodities Proposal on, or to influence any person or persons to submit a Proposal or not to submit a Proposal thereon."

|                                                     |                                                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------|
| <b>Name of Respondent:</b>                          | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| <b>Address of Respondent:</b>                       | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| <b>Email:</b>                                       | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| <b>Telephone:</b>                                   | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| <b>Printed Name of Person Submitting Affidavit:</b> | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| <b>Signature of Person Submitting Affidavit:</b>    | <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |

### **Cooperative Purchasing Program**

**Check one of the following options below.** A non-affirmative Proposal will in no way have a negative impact on the County's evaluation of the Proposal.

|                          |                                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | I will offer the quoted prices to all authorized entities during the term of the County's Contract. |
| <input type="checkbox"/> | I will not offer the quoted prices to all authorized entities.                                      |

---

**\*If no box is checked, the Respondent agrees to make best efforts in good faith to offer the quoted prices to all authorized entities. \***



BEFORE ME, the undersigned authority, a Notary Public, personally appeared [ ] (Name of Signer), who after being by me duly sworn, did depose and say: "I, [ ], (Name of Signer) am a duly authorized officer of/agent for [ ] (Name of Respondent) and have been duly authorized to execute the foregoing on behalf of the said [ ] (Name of Respondent).

SUBSCRIBED AND SWORN to before me by the above-named [ ] on this the [ ] day of [ ], 20[ ].

[ ]

Notary Public in and for

The State of [ ]

The County of [ ]

SIGNATURE AND NOTARY NOT REQUIRED IF COMPLETING IN BIDSYNC ELECTRONICALLY.

| <b>CONFLICT OF INTEREST QUESTIONNAIRE</b><br><b>For vendor or other person doing business with local governmental entity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Form</b><br><b>CIQ</b>                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <p>This questionnaire is being filed in accordance with chapter 176 of the Local Government Code by a person doing business with the governmental entity.</p> <p>By law this questionnaire must be filed with the records administrator of the local government not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code.</p> <p>A person commits an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>OFFICE USE ONLY</b><br><br>Date Received<br><div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Name of person doing business with local governmental entity.</b><br><div style="border: 1px solid black; height: 20px; width: 100%;"></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                        |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p style="text-align: center;"><b>Check this box if you are filing an update to a previously filed questionnaire.</b></p> <div style="display: flex; align-items: center;"> <input type="checkbox"/> <div style="margin-left: 10px;"> <p>(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than September 1 of the year for which an activity described in Section 176.006(a), Local Government Code, is pending and not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)</p> </div> </div> |                                                                                                                        |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Describe each affiliation or business relationship with an employee or contractor of the local governmental entity who makes recommendations to a local government officer of the local governmental entity with respect to expenditure of money.</b></p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <div style="text-align: right; position: absolute; top: 5px; right: 5px;">5</div> <div style="text-align: right; position: absolute; bottom: 5px; right: 5px;">6</div>                                                                                                                  |                                                                                                                        |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Describe each affiliation or business relationship with a person who is a local government officer and who appoints or employs a local government officer of the local governmental entity that is the subject of this questionnaire.</b></p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div> <div style="text-align: right; position: absolute; top: 5px; right: 5px;">5</div> <div style="text-align: right; position: absolute; bottom: 5px; right: 5px;">6</div>                                                                                                                              |                                                                                                                        |

|                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                            |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>CONFLICT OF INTEREST QUESTIONNAIRE</b><br><b>For vendor or other person doing business with local governmental entity</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Form</b><br><b>CIQ</b><br><b>Page 2</b> |
| 5                                                                                                                            | <p><b>Name of local government officer with whom filer has affiliation or business relationship.</b><br/> <b>(Complete this section only if the answer to A, B, or C is YES.)</b></p> <p>This section, item 5 including subparts A, B, C &amp; D, must be completed for each officer with whom the filer has affiliation or other relationship. Attach additional pages to this Form CIQ as necessary.</p> <p>A. Is the local government officer named in this section receiving or likely to receive taxable income from the filer of the questionnaire?<br/> <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>B. Is the filer of the questionnaire receiving or likely to receive taxable income from or at the direction of the local government officer named in this section AND the taxable income is not from the local governmental entity?<br/> <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>C. Is the filer of this questionnaire affiliated with a corporation or other business entity that the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?<br/> <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>D. Describe each affiliation or business relationship.</p> <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div> |                                            |
|                                                                                                                              | <p><b>6. Describe any other affiliation or business relationship that might cause conflict of interest:</b></p> <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                            |
| 7                                                                                                                            | <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 60%; border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 35%; border-bottom: 1px solid black; margin-bottom: 5px;"></div> </div> <div style="display: flex; justify-content: space-between;"> <span>Signature of person doing business with the governmental entity</span> <span>Date</span> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                            |
|                                                                                                                              | <b>Signature not required if completing in BIDSYNC electronically.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                            |

## Proposal References

List the last three (3) companies or governmental agencies, where the same or similar goods and/or services as contained in this RFP package, were recently provided by Respondent.

### **Reference 1**

Client Name:

Location:

Contact Name:

Title:

Phone:

E-mail

Contract Date To:

Contract Date From:

Contract Value: \$

Scope of Work:

|  |   |
|--|---|
|  | 5 |
|  | 6 |

### **Reference 2**

Client Name:

Location:

Contact Name:

Title:

Phone:

E-mail

Contract Date To:

Contract Date From:

Contract Value: \$

Scope of Work:

|  |   |
|--|---|
|  | 5 |
|  | 6 |

### **Reference 3**

Client Name:

Location:

Contact Name:

Title:

Phone:

E-mail

Contract Date To:

Contract Date From:

Contract Value: \$

Scope of Work:

5

6

## Question and Answers for Bid #1801-210 - RV Park Williamson County Expo - Phase II Development

### Overall Bid Questions

There are no questions associated with this bid.